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Mothers' motivational beliefs and children's learning purpose for doing homework: The mediate effects of autonomy support and control[☆]

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ABSTRACT

The study analyzed the mediational model of relationship between mothers' motivational beliefs, type of involvement (autonomy support and control) in homework, and the children's learning-oriented purposes for doing homework. The sample included 235 boys (M age = 11.09, SD = 0.56 years old), 273 girls (M age = 11.12, SD = 0.62 years old) and their mothers (M age = 37.85, SD = 6.94 years old) from Mexican elementary schools. Two structural models were calculated. The first model indicated that mothers' mastery-oriented goals and self-efficacy had a positive relationship with the support of children's autonomy and a negative one with mothers' control on children's homework. On the other hand, the mothers' active role in education resulted negatively related to mothers' control. Whereas mothers' performance-oriented goals resulted negatively related to the support of children's autonomy, they were positively related to control. Overall, mothers' mastery-oriented goals, and self-efficacy had a positive direct and indirect association with children's learning-oriented purpose in homework whereas performance-oriented goals resulted negatively. The alternative model indicated that children's learning-oriented purpose for doing homework promoted mothers' mastery-oriented goals, self-efficacy, and an active role in education in mothers; in turn, it hinders their performance-oriented goals. In addition, it had positive direct and indirect associate to autonomy support, but not affected control. Overall findings suggest a reciprocal relationship between mothers' characteristics and children's motivation for homework.

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Creencias motivacionales de las madres y el propósito de los estudiantes de aprender en los deberes escolares. Su relación con el apoyo a la autonomía y el control

RESUMEN

En el estudio se analizan las relaciones entre las creencias motivacionales de las madres, su tipo de involucramiento y hacer los deberes escolares con el propósito de aprender de los estudiantes. Participaron 235 niños (M edad = 11.09, DT = 0.56 años) y 273 niñas (M edad = 11.12, DT = 0.62 años) de escuelas primarias de México, así como sus madres (M edad = 37.85, DT = 6.94 años). Se calcularon dos modelos estructurales. El primero muestra que la orientación hacia la maestría y la autoeficacia materna favorecen el apoyo a la autonomía y disminuyen el control, mientras que las creencias acerca del rol activo en la educación no se asocian con el apoyo a la autonomía, pero influyen negativamente el control. La orientación materna al desempeño disminuye su apoyo a la autonomía y favorece el control. La orientación a la maestría, la autoeficacia, el rol activo y el apoyo a la autonomía se relacionan positivamente con el cumplimiento de los deberes escolares con el propósito de aprender. El segundo es el modelo alternativo, que sugiere que hacer los deberes con el propósito de aprender influye positivamente la orientación a la maestría,

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la autoeficacia y el rol activo y negativamente la orientación al desempeño en las madres. Además, se asocia positivamente con el apoyo a la autonomía, aunque no afecta al control. Se concluye que existen relaciones recíprocas entre las características de las madres y la motivación de los estudiantes hacia las tareas.

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Introduction

Researchers have consistently reported homework as a positive influence in children's academic outcomes (Fan, Xu, Cai, He, & Fan, 2017; Murillo & Hernández-Castilla, 2020). However, even though homework is a task assigned by teachers to extend students practice of academic skills during non-school hours (Olympia, Sheridan, & Jenson, 1994), their benefits are ensured only when students are committed to devote time and effort to homework completion (Dettmers et al., 2011; Fernández-Alonso, Suárez-Álvarez, & Muñiz, 2016). Consequently, students' purposes for doing homework are often associated to the quality of academic work carried out by them (Katz, Kaplan, & Buzukashvily, 2011; Silinskas & Kikas, 2017). Overall, the literature suggests that students holding learning-oriented purposes while doing homework are prone to completion, effort, and the use of management strategies in homework (Trautwein, Lüdtke, Schnyder, & Niggli, 2006; Xu, 2005, 2011). Warton (2001) and Xu (2005) explain learning-oriented students tend to perceive homework as a means for academic progress, which in turn improve their self-regulation. However, despite of its relevance, current literature remains incapable to explain which factors lead students to adopt learning-oriented purposes while doing homework.

While countless factors may affect children's stance toward school, some scholars have insisted on the prominent role of parental influence on the overall student performance (Gonida & Cortina, 2014; Silinskas & Kikas, 2019). Hence, as other scholars (Green, Walker, Hoover-Dempsey, & Sandler, 2007; Yotyodying & Wild, 2014), we posit that parental motivational beliefs, specifically, shape the way parents get involved in children's homework, condition that ultimately affects their academic performance. Thus, it is important to analyze the relationship among parental motivational beliefs, the types of parental involvement in homework and the adoption of children's learning-oriented purpose for doing homework.

For the purpose of the present study, we used the Expectancy-Value Socialization Model (Parsons, Adler, & Kaczala, 1982). This model asserts that parental beliefs shape their behavior geared toward promoting children's beliefs and behavior. Moreover, we adopted the Self-Determination Theory (SDT, Deci & Ryan, 1985). This theory posits that the support of children's autonomy (versus control) remains as a critical dimension of parenting (Grolnick, 2009). The adoption of these theories allowed us to analyze how Mexican mothers' motivational beliefs shape their involvement in children's homework (autonomy support or control), and how these types of involvement influence children to adopt learning-oriented purpose for doing homework. We focused in mothers as the literature reports that Latin American mothers are more involved in children education than fathers do (Murillo & Hernández-Castilla, 2020; Valdés, Martín, & Sánchez, 2009).

Parents' motivational beliefs

Hoover-Dempsey and Sandler (1997) posit that parental motivational beliefs are a critical factor to predict parental involvement. In specific, the scholars argue that the motivations for parental involvement are influenced by what parents believe can and should do to support children's education. According

to them, motivational beliefs are reflected in constructs such as role construction for involvement, goal-oriented parenting, and self-efficacy for helping children. Although Green et al. (2007) argue parents' role may either active or passive, we are focused on the active role for the purpose of the study. An active role in children's education is reflected in what parents do to support children's academic success (Walker, Wilkins, Dallaire, Sandler, & Hoover-Dempsey, 2005). In educational settings, an active role is reflected in a parental awareness of the shared responsibility with school for children's academic success. Some scholars suggest that an active role is associated with autonomy support in homework (Katz et al., 2011; Yotyodying & Wild, 2014).

Simpkins, Fredricks, and Eccles (2012) identify mastery and performance as two types of goal-oriented parenting, which have a different effect on children motivation for academic endeavors. Parents pursuing mastery goals promote children's self-improvement, learning progress, and skills to face the academic challenges. On the other hand, parents pursuing performance goals encourage children to demonstrate competence by outperforming others (Dweck & Leggett, 1988). The literature reports that parents holding mastery-oriented goals are prone to provide autonomy support, whereas those holding performance-oriented goals are more disposed to control children (Gonida & Cortina, 2014).

In the educational context, parents' self-efficacy refers to the self-evaluation of their abilities to positively influence and support children's school performance (Coleman & Karraker, 2000). Some scholars (Holloway et al., 2016; Steca, Bassi, Caprara, & Fave, 2011) posit that parents who perceived self-efficacy for helping children in academic domain are often involved in optimal parenting strategies, which in turn increases children's success in educational settings.

Types of parental involvement in homework

According to SDT (Deci & Ryan, 1985), parental support plays an important role in creating a social and emotional context that ultimately contributes to satisfy children's basic psychological needs (autonomy, competence, and relatedness). The support of children's autonomy and parental control are two types of parental involvement in children's education with quite different effect on academic performance (Doctoroff & Arnold, 2017; Grolnick, 2009). Parents support children's autonomy when they put attention on children opinions and encourage both self-expression and self-regulated behavior (Dumont et al., 2012; Feng, Xie, Gong, Gao, & Cao, 2019). On the contrary, when parents exert control on children, they often coerce them into high-academic performance, involving excessive and even unwanted help (Dumont et al., 2012; Ryan & Deci, 2017).

Even though the literature evinces the positive effects of autonomy support and the negative effects of control on homework effort and completion (Dumont, Trautwein, Nagy, & Nagengast, 2014; Valle et al., 2015), only a few studies have analyzed the relation between parental autonomy support or parental control and children's purposes for doing homework. The few studies conducted (Dinkelmann & Buff, 2016; Katz et al., 2011) report an association between parental autonomy support and students' intrinsic motivation for learning. Likewise, they report an association between

parental control and students' extrinsic motivation for doing homework.

Role of oriented-learning purposes for homework in children's perception of mothers' beliefs and involvement

The bi-directional socialization model (Belsky, 1984), posit it is important to analyzing the reciprocal effects of parent-child relation. In fact, studies evinced that children's academic functioning affects both parents' motivational beliefs and involvement in homework (Núñez et al., 2017; Xu, Du, Wu, Ripple, & Cosgriff, 2018). However, no studies know by the authors have analyzed the effects of children learning-oriented purpose on parental motivational beliefs and parental involvement in homework.

The present study

This study was focused on examining the effects of Mexican mothers' motivational beliefs and type of involvement on child's learning-oriented purpose for doing homework. Even though the literature has barely explored the effects of parental motivational beliefs on children's academic performance, the parents-related factors that shape children's purposes for doing homework remain unclear. Understanding these factors is important as several studies have underlined the positive effects of students' learning-oriented purpose on both the quality of homework and academic achievement as well. Also, research in Latin America about this topic, particularly Mexico, is still scarce. Therefore, further studies in developing countries are needed to improve the current understanding of the role of parental involvement in student academic performance (Altschul, 2011; Yamamoto, Holloway, & Suzuki, 2016).

In this context, this study proposed to: (1) exam direct and indirect relationships between mothers'-oriented goals (mastery and performance), self-efficacy for helping the child succeed in school, active role in education, autonomy support, control, and children's learning-oriented purpose for doing homework (see Figure 1); (2) examined the alternative model about relationship of children's learning-oriented purpose, mother's motivational beliefs, and the types of involvement.

To accomplish this intent, the following hypotheses were used: *Hypothesis 1a* (direct relations motivational beliefs): Mother's mastery-oriented goals, self-efficacy and an active role were expected to have a positive relationship with the support of children's, and a negative one to control. On the other hand, performance-oriented goals were expected to have a negative association to the support of children's autonomy, and positive one to control. Moreover, we expected that mastery-oriented goals, parental active role and self-efficacy had a positive influence on homework learning-oriented purpose, and performance goals a negative relationship respectively; *Hypothesis 1b* (direct relations type of involvement): Mothers autonomy support was anticipated would has a positive relation to homework learning-oriented purpose, and parental control a negative association respectively; *Hypothesis 1c* (indirect effects): Mastery-oriented goals, self-efficacy, and active role to have an indirect positive relation to learning-oriented purpose for doing homework. Also, mothers with performance-oriented goals were expected to have a negative indirect relation with this homework purposes; *Hypothesis 2a* (direct effects): Children's learning-oriented purpose for doing homework were expected to be positively related to mothers' mastery-oriented goals, taking an active role, self-efficacy, and autonomy-support; likewise, it would be negatively related to mothers' performance-oriented goals, and parental control; and, *Hypothesis 2b* (indirect effects): Children's learning-oriented purpose for doing homework was anticipated to have a positive

relationship with mothers' autonomy support; likewise, it would negatively affect control.

Method

Participants

The sample came from a region located at the North of Mexico. The sites of study were 30 urban public elementary school ($n = 968$ students) from three different cities in the State of Sonora (Ciudad Obregón, Guaymas and Hermosillo; 10 in each city). These schools similar to other public urban elementary schools in Mexico, have low and middle socio-economic status students. The study sample comprised 508 students and their mothers (matched sample), who were selected by simple probabilistic sampling with replacement ($p = .5$, $q = 95\%$, $e = 3\%$). The students sample included 235 (46%) males ($M_{age} = 11.09$, $SD = 0.56$ years old) and 273 (54%) females ($M_{age} = 11.12$, $SD = 0.62$ years old), 245 (48%) of them were enrolled in 5th grade and 263 (52%) in 6th grade. Moreover, 508 mothers who ranged from 27 to 55 years old ($M_{age} = 37.85$ years old, $SD = 6.94$). 20.1% of mothers counted having elementary school, 25.7% middle school, 29.3% high school, and 24.8% hold a bachelor's degree.

Measures

Mothers' measures

Achievement goals: The Personal Achievement Goals Orientation scale from the Patterns Adaptive Learning Scales (PALS; Midgley et al., 2000) was adapted. The back-translations method was used for the translation of the scale from English to Spanish. Then, the scale was adjusted so that they were applicable to mothers instead of students. The instrument comprises eleven items with a five-point Likert scale response (0 = completely disagree, to 4 = completely agree) grouped in two factors: (a) *mastery-oriented goals*, refers to the fostering of children self-regulated learning and fostering academic skills (6 items, e.g., "I want my child's work to be a challenge for him/her"; $\alpha = .82$, $\omega = .87$, $CR = .87$, $AVE = .53$); and (b) *performance-oriented goals*, refers to stimulate children's academic competence by outperforming others peers (5 items, e.g., "I would be very happy if my son/daughter's work was the best of his class"; $\alpha = .79$, $\omega = .81$, $CR = .83$, $AVE = .51$). The Confirmatory Factor Analysis (CFA) showed a good model fit to the data ($\chi^2 = 17.37$, $df = 12$, $p = .136$; SRMR = .02, AGFI = .97, TLI = .99, CFI = .99, RMSEA = .03, CI 90 [.01, .05]). All items factor loadings are significant ($p < .001$) and ranged between .59 ($p < .001$) and .84 ($p < .001$). The correlation between factors resulted as expected ($r = -.23$, $p < .001$).

Active role in education: Parental Role Construction for Involvement in the Child's Education (Walker et al., 2005) was used. The back-translations method was used for the suitability of the scale in Mexican populations. The scale comprises five items ($\alpha = .81$, $\omega = .82$, $CR = .90$, $AVE = .54$; e.g., "I believe it is my responsibility to help my child with homework") that measure mothers' awareness of their shared responsibility with school for their children's academic success. Likert-scale response format was used (0 = totally disagree, to 4 = totally agree). The CFA showed a good model fit ($\chi^2 = 5.41$, $df = 4$, $p = .247$; SRMR = .02, AGFI = .98, TLI = .99, CFI = .99, RMSEA = .03, CI 90 [.01, .07]). All items factor loadings are significant ($p < .001$) and ranged between .72 ($p < .001$) and .76 ($p < .001$).

Self-efficacy for helping child's academic success: Parental Self-Efficacy for Helping the Child Succeed in School (Walker et al., 2005) scale was used. The back-translations method was used for the suitability of the scale in Mexican populations. The scale comprises four items, refers to mothers' perception about their abilities to support child's school performance (e.g., "I know how to help my child to

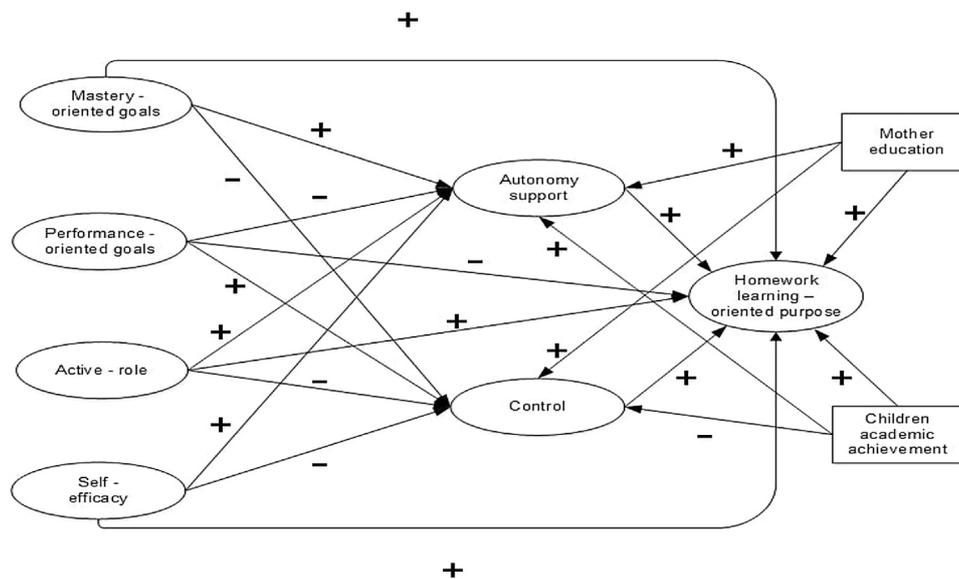


Figure 1. Theoretical structural model of the relations between mothers' achievement goals (mastery or performance), active role in education, self-efficacy, parental homework involvement, and children's learning-oriented purposes.
Note. All are a latent variable.

do well in school"; $\alpha = .88$, $\omega = .89$, $CR = .80$, $AVE = .60$). A five-point Likert scale response with options from 0 = completely disagree to 4 = completely agree was used. The CFA supported the model fit to the data ($\chi^2 = 2.49$, $df = 2$, $p = .287$; $SRMR = .01$, $AGFI = .98$, $TLI = .99$, $CFI = .99$, $RMSEA = .02$, $CI 90 [.01, .05]$). All items factor loadings are significant ($p < .001$) and ranged between .69 ($p < .001$) and .87 ($p < .001$).

Students' measures

Parental involvement in homework: Parental Homework Involvement Scale was used (PHIS; Grijalva-Quiñonez, Valdés-Cuervo, Parra-Pérez, & García Vázquez, 2020). The scale was validated by the authors in a Mexican elementary students' sample. It comprises eleven items with a five-point Likert scale response (0 = never, to 4 = always) grouped in two factors: *autonomy-support*, that assesses children perception about frequency that their mothers taking their opinions, encourage their self-expression, and promote self-regulates behaviors (6 items, e.g., "When I make mistakes in homework, my parents encourage me to review them and to correct them"; $\alpha = .85$, $\omega = .88$, $CR = .90$, $AVE = .52$); and *control*, refers to children's opinions about the frequency that their mother exerted an excessive and even unwanted help in homework (5 items, e.g., "My parents do the homework that I cannot"; $\alpha = .80$, $\omega = .85$, $CR = .73$, $AVE = .53$). The CFA showed a good model fit ($\chi^2 = 46.82$, $df = 26$, $p = .007$; $SRMR = .06$, $AGFI = .97$, $TLI = .98$, $CFI = .99$, $RMSEA = .04$, $CI 90 [.02, .06]$). All items factor loadings are significant ($p < .001$) and ranged between .59 ($p < .001$) and .84 ($p < .001$). The correlation between factors resulted as expected ($r = -.35$, $p < .001$).

Learning-oriented purposes for doing homework: A sub-scale from the *Homework Purpose Scale* (HPS; Xu, 2010) was used. The back-translations method was used for the suitability of the scale in Mexican populations. Using nine items, it assesses children perceptions about homework value for academic succeed (e.g., "Doing homework helps you understand what's going on in class"; $\alpha = .86$, $\omega = .87$, $CR = .85$, $AVE = .54$). This using a five-point Likert response format (0 = strongly disagree, to 4 = strongly agree). The CFA supported the good model fit ($\chi^2 = 13.09$, $df = 6$, $p = .025$; $SRMR = .021$, $AGFI = .97$, $TLI = .98$, $RMSEA = .05$, $CI 90 [.02, .06]$). All items factor loadings are significant ($p < .001$) and ranged between .71 ($p < .001$) and .76 ($p < .001$).

Control variables

The control variables included *mothers' education level* (e.g., the highest educational degree held by the mother; 0 = elementary school, 1 = middle school, 2 = high school, 3 = bachelor's degree) and *children's academic achievement*. Academic achievement was obtained from school records using the grade point average (GPA) of all subjects during the last evaluation. We control these variables to account for the differences in the children's learning-oriented purpose for doing homework that may be related to these variables (Dumont et al., 2012; Núñez et al., 2017) rather than the mother's motivational beliefs or their type of involvement in homework.

Procedure

The researchers gained permission from the Ethical Committee of the University to conduct the study. Later, a consent letter was sent to mothers in order to request voluntary participation from children and themselves in the study. Only 4% of mothers refused to participate. Once the approvals were gained, mothers' were invited to respond to the instruments. Data collection with children took place in school-classrooms during school hours.

Data analysis

Missing values were less than 5% of data. They were treated using the multiple imputation method, available in SPSS 25. The mean, standard deviations and Person's correlations between the variables under study are then calculated. Then an unconditional random effects Anova was conducted to evaluate the school dependence of variables in the study. Results were used to calculate the intraclass correlation (ICC), or the ratio of variance in variables attributes to individuals and school differences. Variance in all variables were not significant, and $ICC < .10$, indicating that differences in the variables were not dependent of school membership (Hox, 2010; Lai & Kwok, 2015).

All the CFA and structural equation models were calculated using AMOS. The maximum likelihood estimation (ML) with Bollen-Stine and bias-corrected confidence intervals bootstraps (500 replicates with 95% CI) was used (Mardia coefficient = 7.3). The bootstrap is an AMOS procedure to dealing with multivariate

Table 1
Mean's, standard deviation, and correlations between variables in the study

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	ICC
1. Mastery goals	2.68	.47	–									.03
2. Performance goals	2.72	.62	–.58***	–								.07
3. Active role	1.82	.34	.49***	.39***	–							.06
4. Self-efficacy	2.51	.55	.36****	–.46***	.58***	–						.08
5. Autonomy support	2.49	.83	.28***	–.20***	.13*	.25***	–					.02
6. Control	1.52	.73	–.18***	.25***	–.37***	–.16***	.18***	–				.04
7. Homework learning-oriented purposes	2.76	.69	.17***	–.13**	.22***	.23***	.52***	.04	–			.07
8. Children's academic achievement	8.39	.64	.24***	–.16***	.27***	.19***	.18***	–.15**	.25***	–		.05
9. Mother education	1.64	.96	.04	–.07	.18***	.12*	.14*	–.02	.03	.10*	–	.03

* $p < .05$.

** $p < .01$.

*** $p < .001$.

non-normality issues (Byrne, 2016; Finney & DiStefano, 2013). Arbuckle (2017) suggests that the ML bootstrap is the bootstrap method with the lowest mean discrepancy between the moments in the original sample and the implied moments from each bootstrap sample.

The mothers' education and children's achievement were controlled in relation to the mediating and outcome variables. The following statistical tests were also used in order to evaluate the global goodness of fit for the models: (a) Chi-squared and associated probability (χ^2 with $p < .001$), Bollen-Stine bootstrap p associate $> .05$, standardized root mean square residual (SRMR $\geq .05$), Tucker-Lewis index (TLI $\geq .95$), adjusted goodness of fit index (AGFI $\geq .95$), comparative fit index (CFI $\geq .95$), and root mean square error of approximation (RMSEA $\geq .05$) with their confidence interval (Bollen & Stine, 1992; Byrne, 2016).

Results

Preliminary analysis

Table 1 shows that mothers' mastery-oriented goals, active role, and self-efficacy were positively correlate with autonomy support and negatively with control in homework. On the other hand, mother's performance-oriented goals had a negative correlation to the autonomy support and positive with control. Moreover, mothers' autonomy support had a positive relation to children's learning-oriented purpose for doing homework. Finally, children academic achievement had a positive correlation to learning-oriented purposes for doing homework.

Model 1: Full structural model

The structural model had a good fit to the data ($\chi^2 = 188.43$, $df = 85$, $p < .001$; Bollen-Stine bootstrap $p = .12$, SRMR = .08, AGFI = .91, CFI = .94, RMSEA = .06, CI 90 [.04, .09]). However, due to the results obtained, we decided to not include the non-significant paths to improve the fit of the structural model. In particular, we did not include the relations performance-oriented goals ($\beta = -.05$, $p = .35$), active role ($\beta = .13$, $p = .15$) and control ($\beta = .09$, $p = .25$) to learning-oriented purpose in homework; likewise, active role to autonomy support ($\beta = .10$, $p = .23$).

Model 2: Trimmed model

The results suggest that the structural model had a good fit to the data ($\chi^2 = 93.21$, $df = 69$, $p = .092$; Bollen-Stine bootstrap $p = .18$, SRMR = .05, AGFI = .94, TLI = .96, CFI = .97, RMSEA = .04, CI 90 [.04, .06]). The model explains 38% of the variance in the children's learning-oriented purpose for doing homework (see Figure 2).

The direct relationship showed that mothers' mastery-oriented goals and self-efficacy were positively related to the support of children's autonomy ($\beta = .34$, $p < .001$; $\beta = .32$, $p < .001$ respectively), and homework learning-oriented purpose ($\beta = .22$, $p < .001$; $\beta = .14$, $p = .005$ respectively). Performance-oriented goals were positively related to control ($\beta = .35$, $p < .001$). Also, mothers' autonomy support was found to have a positive association ($\beta = .55$, $p < .001$) to children's learning-oriented purpose for doing homework. On the other hand, mothers' mastery-oriented goals ($\beta = -.28$, $p < .001$), active role ($\beta = -.21$, $p < .001$), and self-efficacy ($\beta = -.18$, $p < .001$) were negatively associate to control in homework, while performance-oriented goals have a negatively relations ($\beta = -.32$, $p < .001$) to autonomy support.

Regarding the indirect relationships, results showed that mothers with mastery-oriented goals ($\beta = .23$, $p = .008$, CI 95% [.14, .35]), and self-efficacy ($\beta = .15$, $p = .012$, CI 95% [.08, .23]) had a positive influence to children's learning-oriented purpose in homework by

their positive relation to autonomy support. On the other hand, mothers' performance-oriented goals indirectly decreased learning-oriented purpose for doing homework by their positive influenced on control. Finally, mothers' active role in education ($\beta = .10$, $p = .08$, CI 95% [-.01, .18]) did not indirectly relate to learning-oriented purpose for doing homework.

Alternative model

The alternative model (see Figure 3) was acceptable ($\chi^2 = 166.66$, $df = 77$, $p < .001$; Bollen-Stine bootstrap $p = .09$, SRMR = .05, AGFI = .93, TLI = .93, CFI = .95, RMSEA = .05, IC 90 [.04, .06]). Students' learning-oriented purpose for doing homework resulted positively related to autonomy support ($\beta = .43$, $p < .001$), mastery-oriented goals ($\beta = .24$, $p < .001$), performance-oriented goals ($\beta = .13$, $p = .003$), active role ($\beta = .25$, $p < .001$), and self-efficacy ($\beta = .23$, $p < .001$). Moreover, mothers' mastery-oriented goals ($\beta = .36$, $p < .001$), active role ($\beta = .16$, $p < .001$), and self-efficacy ($\beta = .23$, $p < .001$) have a positive relation to autonomy support in homework, while performance-oriented goals decreased support to autonomy ($\beta = -.38$, $p < .001$). On another hand, mothers' mastery-oriented goals ($\beta = -.11$, $p = .008$), self-efficacy ($\beta = -.17$, $p < .001$), and active role ($\beta = -.28$, $p < .001$) have a negative association to control in homework. Regarding the indirect relationship, children's learning-oriented purpose for doing homework resulted positively related to mother autonomy support ($\beta = .13$, $p = .01$, CI [.06, .14]), but did not associated to control ($\beta = .03$, $p = .815$, CI [-.01, .011]).

Control variables

In the proposal model (see Figure 2), children academic achievement resulted positively associated to autonomy support and learning-oriented purpose in homework; and a negative to mothers' control. Moreover, mothers' education resulted positively related to autonomy support. Moreover, the alternative model (see Figure 3) showed that children's academic achievement resulted positively associated to mothers' mastery-oriented goals, active role, self-efficacy, and autonomy support; whereas it resulted negatively related to control. Mothers' education resulted positively related to mothers' active role, self-efficacy, and autonomy support.

Discussion

The study focused on the association of mothers' motivational beliefs, their type of involvement in homework (autonomy support and control), and children learning-oriented purpose for doing homework. Overall, finding partially supports our hypotheses about direct and indirect relations proposed in the structural models.

Motivational beliefs (Hypothesis 1a)

Study consistent with the Hoover-Dempsey and Sandler model (1997) evinced that parents' motivational beliefs influence their involvement in children education. As expected, the data provided evidence that mothers' mastery-oriented goals were related to their support of autonomy in homework. Also, show that parents holding performance-oriented goals hindered their children's autonomy and were more likely to try to control their children. These findings are consistent with previous research (Gonida & Cortina, 2014; Katz et al., 2011) reporting that parents holding mastery-oriented goals tend to stimulate children's autonomy and avoid control in academic settings. Similarly, parents holding performance-oriented goals were more controlling while they helped their children with homework.

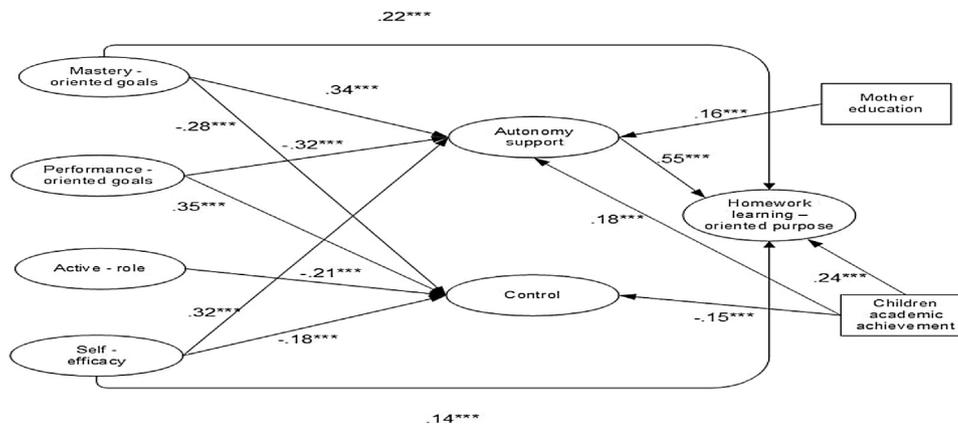


Figure 2. Results of the structural model of the relations between mother's achievement goals (mastery or performance), active role in education, self-efficacy, parental homework involvement and children's learning-oriented purpose.

Note. Standardized coefficients are presented. Non-significant paths were not included.

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

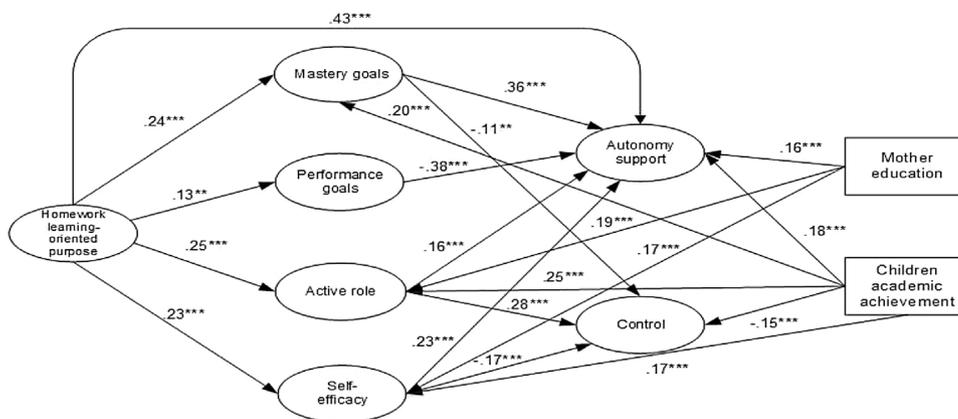


Figure 3. Results of structural alternative model of the relations between children's learning-oriented learning purpose, mother's beliefs and involvement in homework.

Note. Standardized coefficients are presented. Non-significant paths were not included.

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

Similar to suspect the results suggest that parental self-efficacy is an important cognitive construct that directly conditions the types of mothers' involvement in homework. Specifically, self-efficacy mothers are more likely to support autonomy and avoid control (Gonida & Cortina, 2014; Katz et al., 2011). In line with other scholars (Holloway et al., 2016; Steca et al., 2011), we posit that parents who feel self-efficacy themselves are prone to provide a supportive and challenging environment while helping children in homework and do not feel the need to gain self-esteem through the performance of their children.

Finally, consistent to the expected a mothers' active role in children's homework showed to be directly negatively associated to the control of children. Nonetheless, contrary to anticipated (Katz et al., 2011; Yotyodying & Wild, 2014), it has not directed association to autonomy support, and homework learning-oriented purpose. This result may suggest the existence of contextual (e.g., social and school pressures for children achievement), parents (e.g., social capital, and beliefs about childrearing), and child characteristic (motivation to learning, and academic achievement) that mediate the relationships between mothers' active role construction, autonomy support and homework outcomes (Grolnick, Gurland, DeCoursey, & Jacob, 2002; Ryan & Deci, 2017). Also, other results may have resulted if other aspect of parents' role was considered in the study.

In line, with hypothesis proposed in the study findings show that mothers' mastery-oriented goals, active role, and self-efficacy have

a direct positive relation to children learning-oriented purposes in homework. These results are consistent with the literature that reported a positive effect of these motivational beliefs in children motivation to learning (Simpkins et al., 2012). However, unexpected mothers' performance-oriented goals have not associate with homework learning-oriented purpose in homework. In this regard scholar suggest that children's characteristic mediated the relation between parent goals and children motivation to learning (Gonida & Cortina, 2014).

Types of mothers' involvement (Hypothesis 1b)

Similar to expected, we found that autonomy support was positively related to children learning-oriented purpose for doing homework (Dinkelmann & Buff, 2016; Katz et al., 2011). Consistent with past authors, the support of children's autonomy by parents in this study was related to the children's motivational variables (Gonida & Cortina, 2014; Núñez et al., 2015).

Further, our findings showed that parental control did not associated with the children's learning-oriented purpose for doing homework, which was not an expected outcome. This result is contradictory to past studies (Dinkelmann & Buff, 2016; Dumont et al., 2014). We posit that Mexican culture, specifically, the children's perception of the control from their mothers, had an influence on this result. Overall, Mexicans believe they must obey and respect their parent's authority (Bridges et al., 2012). As a result, parental

control in Mexico may be perceived as common, even seen as a positive strategy adopted by parents to lead children to academic success.

Indirect relations between motivational beliefs and homework learning-oriented purposes (Hypothesis 1c)

According expected mother's mastery-oriented goals, performance-oriented goals, and self-efficacy have an indirect relation to learning-oriented purposes in homework. These results are in line with Expectancy-Value Socialization Model (Parsons et al., 1982) because evinced that types of mother's involvement partially mediate the relationship between their beliefs and children academic outcomes.

Only, mother's active role has not an indirect relation to learning-oriented purposes in homework, but we believe stronger effect for active role constructions in autonomy support would possibly if a greater range of role construction beliefs were available for analysis, for example, parents' beliefs about suitable child-rearing outcomes, and about the usefulness of specific child-rearing practices.

Alternative model (Hypothesis 2a and 2b)

In line with the expected the study show that children's learning-oriented purpose for doing homework is directly associate to mothers' motivational beliefs and autonomy support over control while doing homework. Also, it has an indirectly relations to autonomy support. These findings are consistent with previous studies (Núñez et al., 2017; Xu et al., 2018), that confirming that the reciprocal associations of mother-child in homework was suitable for the study about factors that affecting quality of children homework.

Surprisingly, the children oriented-learning purpose for doing homework did not hinder the mother control (Núñez et al., 2017; Xu et al., 2018). Although further research is needed, we posit that parental control practices are not relationship by children's traits because Mexican culture values a set of parenting practices that includes parental control in children development (Denner, Laursen, Dickson, & Hartl, 2018).

Theoretical and practical implications

The results show that the Expectancy-Value Socialization Model (Parsons et al., 1982) and SDT (Deci & Ryan, 1985) were a suitable framework to examine the reciprocal associations of mothers' motivational beliefs, their types of parental involvement, and children's learning-oriented purpose for doing homework. Moreover, findings confirm the usefulness of adopting the Belsky (1984) bi-directional socialization model in the analysis of the reciprocal associations of child-parent traits in the academic domain, particularly for a better understanding of the factors influencing the students' homework purposes.

The results suggest when some mothers' motivational beliefs (mastery goals, self-efficacy and active role) are present, mothers tend to promote children's autonomy and to prevent their control while doing homework. Moreover, results suggest that support of children's autonomy remains essential to facilitate children learning-oriented purpose for doing homework. Finally, data showed that children's motivation for doing homework also shaped mothers' motivational beliefs and involvement.

Limitations

These findings have at least three limitations. First, a cross-sectional design does not allow establishing causal relationships

between the included variables. Longitudinal or experimental designs are needed for deepening of the variables' causal effects. Second, the study was based only on self-reported measures. Third, the sample came from an urban region of Mexico, which may not be similar to other regions in country (for example, indigenous and rural population). Studies with more diverse samples are necessary in future studies.

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