

# The relationship among Egyptian adolescents' perception of parental involvement, academic achievement, and achievement goals: A mediational analysis

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*A structural equation modelling analysis was used to test the mediating effect of achievement goal factors on the relationship between Egyptian adolescents' perception of parental involvement and academic achievement. The perception of Parental Involvement Scale and Achievement Goal Questionnaire was administered to a sample of 255 first-year students (135 males and 120 females) enrolled in a high school in El-Minia city in Egypt during 2005. Achievement scores were obtained from students' school records. Results of the study revealed that students' performance-approach and mastery goals were the most important predictors of students' academic achievement, followed by at-home parental involvement, at-school parental involvement, and finally performance-avoidance goals. At-home parental involvement had an indirect effect on students' academic achievement through mastery goal. At-school parental involvement had an indirect effect on academic achievement through mastery, performance-approach, and performance-avoidance goals. Implications of these findings for students' academic achievement are discussed.*

Adolescents, parental involvement, academic achievement, achievement goals

## INTRODUCTION

Parental involvement in their children's education has been seen as a mechanism for raising standards, developing new partnerships between schools and parents in the local community, and promoting social inclusion. Parental involvement was operationally defined in numerous ways. The definitions included communication between parents and teachers (Deslandes et al., 1997); parents' participation in school activities, such as conferences (Miedel and Reynolds, 1999); and parents' help with their children's homework (Shumow and Miller, 2001). Parental involvement, as investigated in the present study, refers to parents' behaviours at home and at school intended to assist with children's overall learning experiences (Bronfenbrenner, 1986; Galal-El-Dean, 1994).

An extensive research has established a linkage between parents' involvement in their children's education and higher levels of academic achievement for those children. Van Voorhis (2003), for example, reported that students achieved at higher levels at school when parents offered assistance with their school homework. Similarly, Lamborn, Brown, Mounts, and Steinberg (1992) found that joint parent-student decision-making (for example, choosing what project to undertake or what courses to take) was associated with higher levels of students' school engagement, as well as academic achievement. Furthermore, Keith et al. (1998) reported that parental involvement as measured in eighth Grade had a significant effect on tenth Graders' grade point average.

However, several researchers have reported mixed results (Deslandes et al., 1997; Fan, 2001; Sui-Chu and Willms, 1996), including no evidence of a direct effect of parental involvement on children's academic achievement (Bobbett et al., 1995; Keith et al., 1986; Okpala, Okpala, and Smith, 2001) and even a negative relationship between these two variables (Deslandes et al., 1997; Sui-Chu and Willms, 1996).

One possible explanation for these inconsistent findings could be that the impact of parents' involvement on children's academic achievement might include indirect effects. That is, the effect of parents' involvement on children's academic achievement might be mediated by some other variables (Keith et al., 1986). Though little empirical work seems to have been done on such mediating processes, some researchers have proposed possible mechanisms. Epstein (1991), for example, suggested that parents' involvement conveyed to the child the importance of education, which could lead the child to set higher levels of educational aspiration. Another possible impact might be through children's attitudes toward themselves. For example, children who perceived their parents as being involved might also feel more competent (Patterson, 1986). Similarly, Grolnick and her colleagues (Grolnick, Ryan, and Deci, 1991; Grolnick and Slowiaczek, 1994) suggested that parental involvement might affect children's academic achievement through its impact on the children's attitudes and motivations related to school. In addition, Ross and Broh (2000) found that children's locus of control, significantly mediated the effect of parental social support on children's academic achievement.

It is conceivable that achievement goal factors may mediate the relationship between parental involvement and children's academic achievement. Several researchers have attended to two types of goal orientations: (a) performance goals, which were focused on the demonstration of competence relative to others; and (b) mastery goals, which were focused on the development of competence and task mastery (Ames and Archer, 1989). Elliott and Dweck (1988) suggested that achievement goals involved an organisation of cognitive processes that had cognitive, affective, and behavioural consequences on the person. For example, students who adopted mastery goals chose challenging tasks (Ames and Archer, 1988), became involved in the learning process (Nicholls, Cheung, Lauer, and Patashnick, 1989), and used effective study strategies (Nolen and Haladyna, 1990). In contrast, performance goals were found to be associated with surface-level and effort-minimising learning strategies, and impaired problem solving strategies (Graham and Golan, 1991; Meece, Blumenfeld, and Hoyle, 1988).

Furthermore, Elliot and his colleagues (Elliot and Church, 1997; Elliot and Harackiewicz, 1996; Elliot and Todd, 2001) have proposed a tripartite achievement goal framework that represented a revision of the performance-mastery dichotomy. This tripartite model incorporated three achievement goal orientations: (a) mastery goal, which was focused on the development of competence and task mastery; (b) performance-approach goal, which was focused on the attainment of favourable judgments of competence through attaining normative competence; and (c) performance-avoidance goal, which was focused on avoiding unfavourable judgments of competence.

Several researchers have demonstrated that parental involvement may affect children's achievement goals orientations. Muhammad (1993), for example, found that the children who lived with natural parents reported higher levels of achievement goals relatively to children who lived with grandparents or close relatives. Similarly, Gonzalez (2002) reported that parental involvement was positively related to mastery goal orientation. That is when parents got involved in their children's education, children were more likely to seek challenging tasks, persist through academic challenges, and experience satisfaction in their school work.

Furthermore, several researchers have shown that the endorsement of specific achievement goals might itself affect children's academic achievement. Using a sample of undergraduates enrolled in

a psychology course, Harackiewicz, Barron, Carter, Lehto, and Elliot (1997), for example, reported that: (a) students who adopted mastery goals reported higher levels of interest in the psychology course; (b) students who adopted performance-approach goals obtained higher grades in the psychology course; and (c) students who adopted performance-avoidance goals received lower grades in the psychology course, as well as, the overall semester GPA. Similarly, Church, Elliot, and Gable (2001) found that mastery and performance-approach goals, in contrast to performance-avoidance goals, were significant predictors of undergraduates' higher levels of academic achievement.

## HYPOTHESES

In an attempt to build upon the findings of previous research, the present study sought to investigate the central notion that the effects of parental involvement factors on children's academic achievement would be mediated through children's achievement goals orientation. A primary goal of the present study was to develop a causal model that could help investigate the following: (a) the extent to which students' academic achievement would be predicted from measures of their achievement goals orientation; and (b) whether students' achievement goals orientation would mediate the relationship between parental involvement factors and children's academic achievement.

## METHODS

### Participants

Subjects of the present study included 255 first-year students (135 males and 120 females) enrolled in a high school in El-Minia city in Egypt during 2005. The students' median age was 14.8 years. Participation was voluntary, and 11 students enrolled in the course declined to participate in data collection.

### Measurements

#### *Perception of Parental Involvement Scale (PPIS)*

Galal-El-Deen (1994) developed the Perception of Parental Involvement Scale (PPIS) using a sample of 244 Egyptian high school students. Two subscales of the PPIS were used in the present study to assess the respondents' perception of their parents' involvement in their education at home and at school. The at-home parental involvement subscale included 31 items. An example of statements from the at-home parental involvement subscale included; "My parents prepare a private, clean, and quiet place for me to study my lessons." The at-school parental involvement subscale included six items. An example of statements from the at-school parental involvement subscale included; "My parents refuse to donate money to school other than the official fees."

Each item in the at-home and at-school parental involvement subscales was scored on a 4-point Likert type scale ranging from 1 (completely disagree) to 4 (completely agree). The scoring of two items (Items 3 and 31) in the at-home and one item (Item 35) in the at-school parental involvement subscales were reversed so that a high total score represented more involvement. Scores on the at-home parental involvement subscale could range from 31 (low level of parental involvement) to 124 (high level of parental involvement). Scores on the at-school parental involvement subscale could range from 6 (low level of parental involvement) to 24 (high level of parental involvement). Within the current data set, the reliability indices for the at-home and at-school parental involvement subscales using Cronbach alpha were 0.75 and 0.71, respectively.

### ***Achievement Goal Questionnaire (AGQ)***

Abd-El-Salam (1999) standardised the Achievement Goal Questionnaire (AGQ) (Elliot and Church, 1997) using a sample of 320 Egyptian high school students. The AGQ is a 15-items scale with three subscales that was intended to assess the respondents' achievement goal orientations. The mastery goal subscale included five items. It assessed students' development of competence and task mastery. An example of statements from the mastery goal subscale included; "I want to learn as much as possible from this class." The performance-approach goal subscale included five items. It assessed students' attainment of favourable judgments of competence. An example of statements from the performance-approach subscale included; "It is important to me to do better than other students." The performance-avoidance goal subscale included five items. It assessed students' avoidance of unfavourable judgments of competence. An example of statements from the performance-avoidance subscale included; "I wish this class was not graded".

Each item in each subscale of the AGQ was scored on a 4-point Likert type scale ranging from 1 (completely disagree) to 4 (completely agree). Scores on each of the three subscales (mastery, performance-approach, and performance-avoidance) could range from 5 (low motive level) to 20 (high motive level). Within the current data set, the reliability indices for mastery, performance-approach, and performance-avoidance goals using were 0.75, 0.72, and 0.74, respectively.

### **Procedures**

The PPIS and the AGQ were administered to the sample in the study during the eleventh week of the school year 2005. Students were asked for a permission to obtain their achievement scores from their records. These scores were the course aggregated total score, that is, the sum of on-course assignments and examinations scores and were expressed as percentages.

### **THE PRESENT STUDY**

The model in the present study incorporates three types of constructs: (a) antecedents variables, which include parental involvement factors that are not influenced by other variables in the model; (b) mediator variables, which include students' achievement goals orientation; and (c) criterion variables, which include students' academic achievement as being predicted by the other variables in the model.

The main assumption guiding the development and refining of the model was based on a parsimonious attempt to build a concise and coherent model. Certain assumptions were set during the process of model development: (a) at-home and at-school parental involvement factors were positively related to mastery and performance-approach goals and negatively related to performance-avoidance goal; and (b) academic achievement, as the criterion measure, was considered to be under the influence of all other variables in the model either directly or when mediated through other variables. The positive (+) and negative (-) effects of at-home and at-school parental involvement factors, mastery goal, performance-approach goal and performance-avoidance goal orientation on academic achievement are represented in Figure 1.

### **RESULTS**

Initially, a matrix of Pearson product-moment correlation coefficients, presented in Table 1, among at-home and at-school parental involvement, mastery goal, performance-approach goal, and performance-avoidance goal (predictors) and academic achievement (criterion) scores was calculated. Means and standard deviations were also estimated.

It is noted from Table 1 that all variables are moderately correlated and the highest correlation ( $r=0.40$ ) is between mastery goal and academic achievement. However, the lowest correlation ( $r=-0.25$ ) is between mastery goal and performance-avoidance goal.

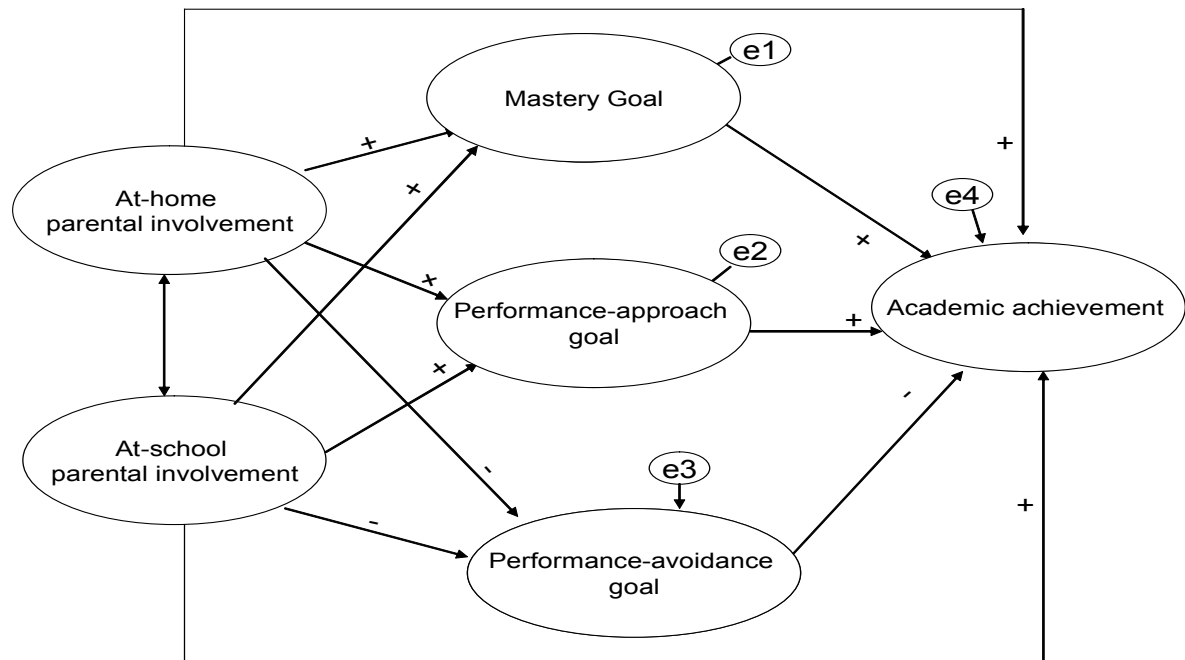


Figure 1. Hypothesised Structural Equation Model

Table 1. Correlations and descriptive statistics of at-home and at-school parental involvement, mastery goal, performance-approach goal, performance-avoidance goal, and academic achievement (N=255)

Variables	1	2	3	4	5	6
1. At-home parental involvement	-					
2. At-school parental involvement	0.28	-				
3. Mastery goal	0.35	0.35	-			
4. Performance-approach goal	0.34	0.30	0.34	-		
5. Performance-avoidance goal	-0.29	-0.31	-0.25	-0.33	-	
6. Academic achievement	0.32	0.33	0.40	0.34	-0.37	-
Mean	44.3	23.5	16.7	17.4	20.3	52.7
SD	3.2	5.2	4.5	8.4	5.7	6.4

Note. All reported correlations are significant,  $p < 0.05$

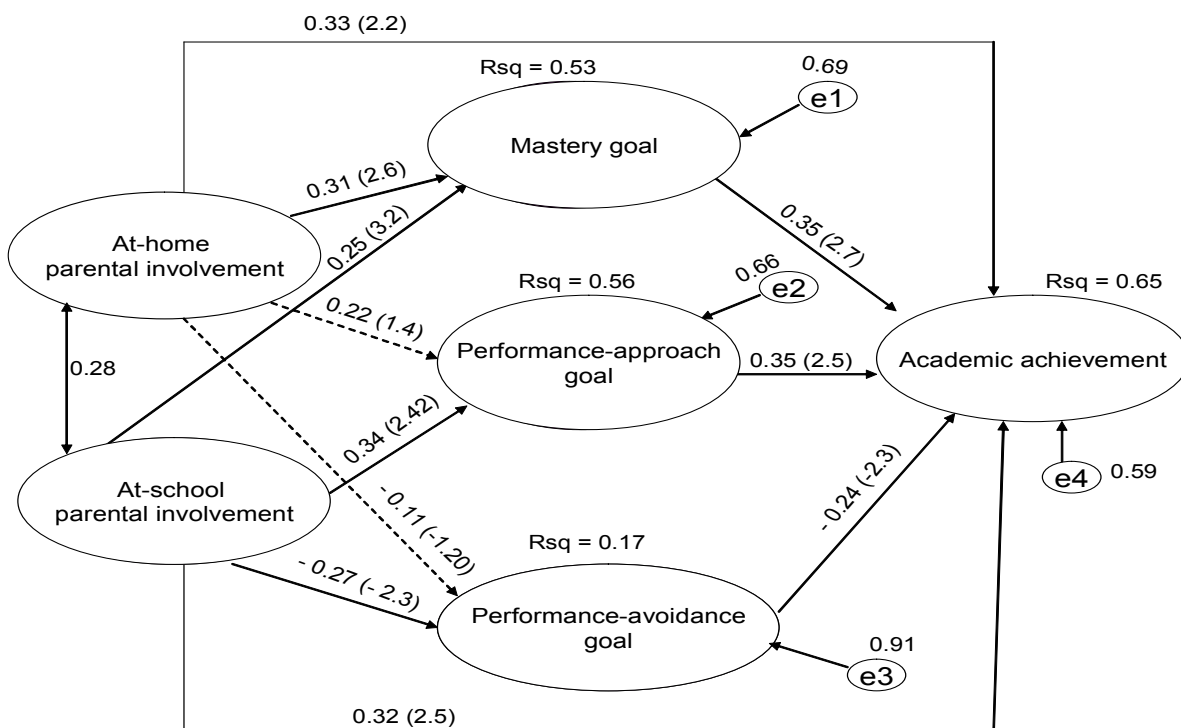
### Model Testing

STATISTICA 7.1 program (StatSoft, 2005) was used to test the hypothesised structural equation model. Table 2 shows the variance-covariance matrix that was analysed using Maximum Likelihood (ML) estimation procedure (Chou and Bentler, 1995).

Table 2. Variance-covariance matrix of at-home and at-school parental involvement, mastery goal, performance-approach goal, performance-avoidance goal, and academic achievement (N=255)

Variables	1	2	3	4	5	6
1. At-home parental involvement	7.61					
2. At-school parental involvement	2.35	5.45				
3. Mastery goal	3.24	4.30	5.35			
4. Performance-approach goal	8.12	5.31	2.41	8.16		
5. Performance-avoidance goal	-6.52	-4.55	-3.66	-4.29	7.30	
6. Academic achievement	5.35	5.25	5.45	8.38	-7.48	3.32

Testing the hypotheses of the study was a two-step process. The first step was to examine the overall fit of the hypothetical structural equation model to the data. This is an omnibus test that in practical terms asks whether or not the specification of the paths, as conceptually supported, provides an acceptable model of the theoretical process underlying the variables. The overall fit of the model was satisfactory  $\chi^2(5, N=255)=8.30, p=0.14$ , which indicates nonsignificant differences between the sample variance-covariance matrix and the population variance-covariance matrix implied by the model. Other fit indices were also examined including Root-Mean-Square Error of Approximation (RMSEA)=0.05 ( $LO_{90}=0.37$  and  $HI_{90}=0.65$ ), Standardised Root-Mean-Square Residual (SRMR)=0.03, Adjusted Goodness of Fit Index (AGFI)=0.97, and Parsimony Goodness of Fit Index (PGFI)=0.36. All values of these indices fall within the recently suggested guidelines as indicative of overall satisfactory model fit (see, Hu and Bentler, 1999). The structural equation model of the effects of at-home and at-school parental involvement, mastery goal, performance-approach goal, and performance-avoidance goal on academic achievement is presented in Figure 2.



**Figure 2.** A structural equation model of the effects of at-home and at-school parental involvement, mastery goal, performance-approach goal, and performance-avoidance goal on academic achievement. Dashed lines indicate nonsignificant path coefficients

### Direct Effects

Once the model achieves an overall satisfactory fit, the second step in the model testing process is to examine the statistical significance of each of the hypothesised direct and indirect effects. With regard to the direct effects, the test statistics is the critical ratio (CR), which represents the parameter estimate divided by its standard error, as such, it operates as a z-statistic in testing whether the estimate is statistically different from zero. Table 3 shows that based on a significance level of 0.05, the test statistic needs to be greater than  $\pm 1.96$  before the hypothesis that the estimate equals 0.0 can be rejected.

It is noted from Figure 2 that with the exception of the paths, presented by dashed lines, from at-home parental involvement to performance-approach goal ( $\beta=0.22$ ) and performance-avoidance goal ( $\beta=-0.11$ ), all hypothesised direct paths, as presented in Table 3, are statistically significant ( $p<0.05$ ).

### Indirect Effects

The statistical significance test for the indirect effects is the bias-corrected confidence interval generated by AMOS 5.0 program ( $p=0.10$ ) through the bootstrapping technique (Arbuckle, 2003). Arbuckle\*<sup>1</sup> (personal communication, February 18, 2005) argued that using the bootstrapping technique with normally distributed data does not change any of the non-bootstrapping results, while it can help test for the significance of the indirect effects. When the range of the bias-corrected confidence interval does not include a value of zero, the hypothesis that an indirect effect regression weight is not equal to a value of zero in the population can be rejected.

**Table 3. Standardised path coefficients, critical ratios of the direct effects, bias-corrected confidence interval of bootstrapping for the indirect effects, and  $R^2$  of the hypothesised model of effect of at-home and at-school parental involvement, mastery goal, performance-approach goal, and performance-avoidance goal on academic achievement (N=255)**

Paths	Direct Effect ( $\beta$ )		Indirect Effect		$R^2$
	PC	CR	PC (LB)	PC (HB)	
To mastery goal					0.53
At-home parental involvement	0.31	2.6	0.00	0.02	
At-school parental involvement	0.25	3.2	0.08	0.18	
To performance-approach goal					0.56
At-home parental involvement	<i>0.22</i>	<b>1.2</b>	0.01	0.05	
At-school parental involvement	0.34	2.4	0.09	0.14	
To performance-avoidance goal					0.17
At-home parental involvement	<i>-0.11</i>	<b>-1.2</b>	-0.04	.06	
At-school parental involvement	<i>-0.27</i>	<b>-2.3</b>	-0.03	-0.08	
To academic achievement					0.65
Mastery goal	0.35	2.7	0.00	0.05	
Performance-approach goal	0.27	2.5	0.22	0.28	
Performance-avoidance goal	-0.24	-2.3	0.00	0.05	
At-home parental involvement	0.34	2.2	0.04	0.09	
At-school parental involvement	0.36	2.5	0.08	0.12	

Note. Values are significant at  $p < 0.05$ . PC=path coefficient, CR=critical ratio, LB=low boundary of bias-corrected confidence interval of bootstrapping, HB=high boundary of bias-corrected confidence interval of bootstrapping. Values shown in italic indicate nonsignificant direct effects. Values shown in bold indicate the critical ratio associated with the nonsignificant direct effects.

### DISCUSSION

An essential goal of the present study was to develop a causal model that could help investigate the central notion that the effect of parental involvement on adolescents' academic achievement would be mediated through children's achievement goals orientation. The findings of the study showed that among many factors that might contribute to children's academic achievement, mastery and performance-approach goals were predominant. After considering performance-avoidance goal, and at-home and at-school parental involvement, children's mastery and performance-approach goals remained critical factors that affected directly children's academic achievement. This finding is consistent with other research findings from different countries. For

<sup>1</sup> Professor James Arbuckle (Temple University, Philadelphia, USA).

example, Wentzel (1991), in the United States, analysed group differences in grades as a function of goal profiles. Wentzel found that high school students who endorsed both mastery and performance goals had higher GPAs than students who endorsed only one or neither goals. Similarly, Tanaka and Yamauchi (2001), using a sample of tenth and eleventh graders in a Japanese girls' high school, reported that mastery and performance goals positively correlated with intrinsic interest and academic achievement. In addition, Wang (2004) found that both mastery and performance goals were significant predictors of high school students' mathematics achievement in Taiwan.

However, the analysis revealed a negative direct effect of performance-avoidance goal on students' academic achievement. Similarly, Harackiewicz et al., (2002), using a sample of students enrolled in an undergraduates' psychology course, reported that students who endorsed performance-avoidance goals showed lower levels of interest and enjoyment of the psychology course, and had lower grades in the psychology course, as well as, the overall semester GPA.

Consistent with these research findings, several researchers (Ames, 1992; Dweck, 2000; Harackiewicz, Barron, and Elliot, 1998; Urdan, 1997) have argued that the type of goal endorsed is presumed to establish the perceptual set for how individuals interpret and experience achievement settings. As such, achievement goals can be viewed as important factors for attaining higher levels of achievement, achievement-related processes, and adjustment to achievement settings (Pintrich and Garcia, 1991; Urdan, 1997).

Furthermore, the analysis showed that parental involvement factors could also affect directly students' academic achievement. After taking into account achievement goals orientation, parents' involvement in their children's education remained a critical factor that affected directly children's academic achievement. This finding stands on line with other research findings from different countries. David, Anthony, and Russell (1987), for example, found that parental involvement predicted reading progress in a sample of Australian second graders who were followed up from kindergarten. Using data drawn from the large-scale Dutch PRIMA (primary education) which contained information on more than 500 schools and 12,000 students in the last year of primary school and their parents, Geert, Frederik, and Peter (2005) reported that parental involvement was an important predictor of students' academic achievement.

Besides the direct effects, the analysis revealed that parental involvement factors could also affect children's academic achievement indirectly by boosting mastery and performance goals and discourage performance-avoidance goal. The assumption was that if children felt cared for, and encouraged through their parents' involvement at-home and at school, children were more likely to do their best to learn and to demonstrate their ability to their parents. Consistent with this finding, Gonzalez (2002) reported that parental involvement was positively related to mastery orientation. That is when parents get involved in their children's education, children were more likely to seek challenging tasks, persist through academic challenges, and experience satisfaction in their school work. Similarly, Blumenfeld (1992) stated that "current thinking about goals would profit from classroom climate and cross-cultural research concerning the influence of teachers and parents on student motivation and learning" (p. 276).

In summary, the results of the present study documented the direct and the indirect relationships among parental involvement factors, achievement goals orientation, and children's academic achievement. After taking into account parental involvement factors and performance-avoidance goal, the strongest predictive factors of academic achievement were students' mastery and performance-approach goals. In addition, the findings of the present study may implicate parents' involvement in their children's education as a beneficial factor through developing mastery and performance-approach goals and discouraging performance-avoidance goals within their children.



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