Chih-Lun Hung
School of Education, University of Adelaide, Australia

Family Background, Parental Involvement and Environmental Influences on Taiwanese Children

This study examines to what extent fathers' and mothers' involvement in schooling is related to children's school outcomes, taking into account differences in family social status, social structure, and children's perceptions of their school learning environments. The findings suggested that (a) mothers were more involved in their children's education than fathers; (b) children's academic achievement is related to their family social status and social structure; (c) children's self-concept is associated with their perceptions of school learning environments, parents' aspirations, and parents' involvement at home; and (d) the family social structure and school learning environment variables in the theoretical model mediate the relationships among family social status and children's academic achievement and self-concept.

L'objectif de cette recherche est d'étudier dans quelle mesure l'implication des parents dans l'éducation de leurs enfants est liée à la performance scolaire de ces derniers, tout en tenant compte des différences sur trois plans : le statut social de la famille, la structure sociale de la famille et la perception qu'ont les enfants de leur environnement d'apprentissage. Les résultats permettent de conclure que : (a) les mères étaient plus impliquées dans l'éducation de leurs enfants que l'étaient les pères; (b) la performance académique des enfants est liée au statut social et à la structure sociale de leur famille; (c) les concepts de soi des enfants sont liés à leurs perceptions de leurs environnements scolaires, aux aspirations de leurs parents et à l'implication des parents à la maison; et (d) la structure sociale de la famille et les variables associées à l'environnement scolaire dans le modèle théorique médient les rapports entre le statut social de la famille, la performance académique des enfants et leur concept de soi.

Introduction

Educational reform is a major challenge facing schools in Taiwan. Although schools play a key role in the national effort to improve the education of our children, they cannot accomplish it alone. Currently there are several primary school educational reforms in Taiwan, the most important of which relates to parental involvement in the new educational order. Indeed, starting in 2001 every school had to have a parental involvement plan or program in the school schedule. To support these new programs research is needed to examine the extent and nature of parental involvement in primary schools in Taiwan and investigate the effects of parental involvement on students' outcomes. This study examines to what extent fathers' and mothers' involvement in schooling is related to children's school outcomes, taking into account differences in family social status and social structure and children's perceptions of their school learning environments.

Chih-Lun Hung is an assistant professor in the Department of Early Childhood Care and Education, Central Taiwan University of Science and Technology, Taiwan.

Background

In the past, participation by parents in children's schooling was not part of Chinese culture. In fact parents have generally considered that teaching is the sole responsibility of teachers. Many parents feel that they do not have the knowledge and expertise to provide appropriate learning activities for their children. In addition, teachers are highly regarded in Chinese culture; they are respected as authority figures because of their knowledge. It has been difficult for parents to become involved in their children's school activities, so their direct involvement in school education has rarely been practiced in Taiwan (Chen, 2002; Lin, 2001, 2002). Nor have teachers encouraged parental participation. An analysis by Liu and Chien (1998), for example, indicates that Chinese educators have tended to exclude parents from the classroom because they believe that children need to establish independence. In addition, some teachers have felt that parental involvement in the school might negatively affect children's learning and behavior in the classroom. In particular, some teachers are concerned that parental involvement could harm the classroom climate that they have so carefully created.

Since 1996 the Education Ministry of Taiwan has introduced important reforms to include parental involvement in schools. Mu-Lin Lu (2000), the Vice-Minister of the Education Ministry of Taiwan, stated,

> Globalization has given Taiwan many challenges. Among these is the challenge on how best to address the needs of Taiwan citizens and their society, for better understanding and constructively handling the impact that globalization is having upon their lives, and to provide them with a workable framework that will allow them to deal successfully with these challenges. Government support has provided great momentum to the education reform project for Taiwan, the primary goals for education reform of which include the establishment of an innovative mechanism through the reactivation and promotion of traditional values, family education, and parental involvement in education, as well as the overhauling of inservice programs and other pertinent projects targeting the concept of lifelong learning. (pp. 1-2)

The new educational reform requires that every primary school have parental involvement programs in its schedule. The Education Ministry of Taiwan (2002) indicates that

> Parental involvement is seen as a democratic issue both in terms of individual rights and as a way of making the educational system more democratic and developing more power at the local level. The whole of Taiwan society needs to increase its level of educational participation, and this cannot be achieved without the cooperation of parents. (p. 1)

Earlier Studies

Involvement of parents in their children's education has been the subject of research for several decades, and the topic continues to be of interest (Carter & Wojtkiewicz, 2000; Center for Educational Research and Innovation [CERI], 1997; Nord & West, 2001; US Department of Education, 2000).

Increasing parental involvement in children's learning has become an important issue in many school reform efforts. Parents in many OECD countries have indicated that they wish to become more involved in their children's schooling (CERI, 1997). There is overwhelming evidence that parental involve-

ment in children's education is linked to children's school success (CERI, 1997; Nord & West, 2001; US Department of Education, 2000).

Promotion of family and school cooperation has become a major issue for policymakers and educators in Taiwan. For example, Lin (2002) examined parental involvement in Kaohsiung County and City and found that most of the parents accepted the value of parental involvement in schooling although it was still not popular. Parents who had higher expectations were more likely to be involved in their children's schooling and to have better interaction with teachers. Lin also suggests that parents participated more frequently in their children's schooling when they were concerned about their academic achievement.

She (2002) investigated parental involvement in Tainan City and County. The study found that generally teachers and parents had positive attitudes about parental involvement in schools. She observed that most of the teachers encouraged parents to participate in parent-teacher associations and accepted the role of parents as assistants, supporters, and advocates. In addition, the investigation indicated that the main barriers to parental involvement were their being too busy, lack of interaction with teachers, lack of ability, difficulties of participating in school functions, and differing ideas of teachers and parents. Wu (2002) investigated parental involvement in Taoyuan County. Findings revealed a variety of school activities that primary schools organized for parental participation such as school decision-making, parent-teacher conferences, volunteering in school, and educational seminars. He also observed that most parents participated in school functions because they were concerned about their children's academic achievement. Parents' educational background was associated with their involvement in schooling. That is, better educated parents were more likely to be involved in their children's schooling.

Shiu (2002) examined parental involvement in Taipei. Findings showed that parents were more likely to participate in parent-teacher conferences and volunteer in school or in classrooms than to be involved in other school functions such as parents' associations. Most parents supervised their children in completing their homework. Parental involvement had a significant association with family background. That is, better educated parents were more likely to be involved in schools.

Chen (2002) indicates, however, that parental involvement in schooling is still not popular among teachers in Taiwan. In interviews teachers said that parent-teacher associations placed many pressures on teachers. Although this could help teachers improve their educational knowledge and skills, it was suggested that teachers should participate in educational seminars, conferences, and training programs and courses to improve their understanding of parental involvement. The Chen study suggests that most parents had positive attitudes about parental involvement in children's education. Parents felt that they could understand better what their children were learning in school if they were involved and that such involvement would improve parents' and children's interactions.

Investigations indicate a growing awareness in Taiwan of the importance of involving parents in their children's education. The Taiwanese analyses also suggest a need for research that investigates more sensitively the relationships

between family and school influences and children's school-related outcomes. That is, research is required that examines the relationships among parental involvement at home and in school, children's perceptions of their school learning environments, and a set of cognitive and affective school outcomes. When such research is undertaken, the role of parental involvement in Taiwanese education will be better understood. I present below the theoretical framework of the study.

Theoretical Framework
In developing a bio-ecological model of human development, Bronfenbrenner and Ceci (1994) proposed that explaining variations in developmental outcomes requires an understanding of relationships among distal environmental contexts, proximal learning settings, individual characteristics, and measures of these outcomes. Bronfenbrenner and Ceci write,

> The form, power, content, and direction of the proximal processes affecting development vary systematically as a joint function of the characteristics of the developing person, of the environment—both immediate and more remote—in which the processes are taking place, and of the nature of the developmental outcomes under consideration. (p. 572)

In addition, Ceci, Rosenblum, de Bruyn, and Lee (1997) suggest,

> Proximal processes are defined as reciprocal interactions between the developing child and other persons, objects, and symbols in its immediate setting. In order to qualify as a proximal process, an interaction must both be enduring and lead to progressively more complex forms of behavior. The efficiency of a proximal process is determined to a large degree by the distal environmental resources … Proximal processes are the engines that actually drive the outcome but only if the distal resources can be imported into the process to make it effective. (pp. 310-311)

I adopted the bio-ecological model to develop a theoretical framework for my own investigation. The bio-ecological model suggests that intervening intermediate and immediate family and school contexts are likely to mediate the effects of distal family contexts on students' school-related outcomes. I construct a model that suggests possible relationships among family social status, family structure, parents' aspirations, parental involvement, school learning environments, and students' school-related outcomes. I present this framework in Figure 1.

Research Hypotheses
From the model in Figure 1 and from the literature, I generated the following hypotheses that I examine in the study.

Hypothesis 1. Mothers are more involved in their children's education than are fathers.

Hypothesis 2. Parents of middle social status provide stronger support at home and are more involved in school than are parents of lower social status.

Hypothesis 3. Children whose parents are highly involved at home perceive the school environment more favorably.

Hypothesis 4. The intervening family and school variables in the theoretical model mediate the relationships among family social status and children's academic achievement and self-concept.
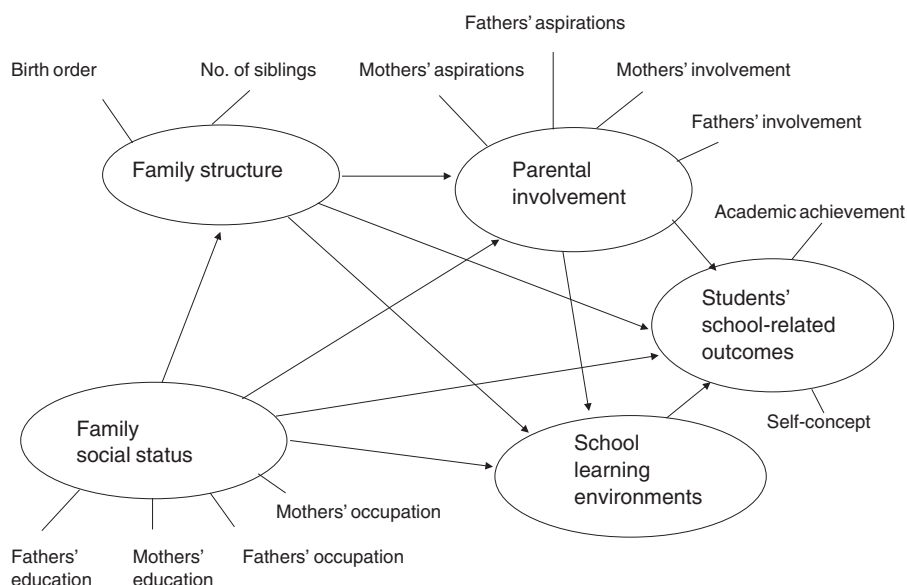
Figure 1. The theoretical framework suggests the above model to examine the relationships among family background, parental involvement, environmental influences, and children's school-related outcomes.

Methodology

Sample and Procedure

For analysis of the hypotheses, in 2001 I collected data from 261 grade 6 Taiwanese students, 128 boys and 133 girls, from four primary schools in the Taichung city school district. The average age was approximately 11 years. I selected two schools in the city and two in suburban locations. In addition, the intake into the schools reflected the social status background of families in the city. Each student completed two questionnaires and two academic achievement tests. The first questionnaire included schedules to assess family social status, family structure, and parents' involvement in their children's education. In the second questionnaire were schedules to measure children's self-concept and perceptions of their schools' learning environments.

Measures

Family social status. The students were asked to indicate the occupations and educational attainment levels of their parents. Occupations were scored on an index that ranks occupations in the Taiwanese context (Yang, 2001). The occupational attainment scores ranged from 1, semi-technical and nontechnical worker; to 5, high-ranking professional and administrative personnel. Educational attainment scores ranged from 1, finished primary school; to 6, postgraduate school (see Appendix).

Family structure. Family structure was assessed by measures of the birth order of each child in the study and the number of children in each child's family.

Parents' aspirations. Parents' aspirations were assessed by asking the children to indicate the educational aspirations they perceived their parents had for

them, as well as their parents' idealistic and realistic occupational aspirations for them.

Parents' involvement at home. I used the Marjoribanks (1994, 2002) Perceived Family Environment Scale to assess the children's perceptions of the support they received from their fathers and mothers at home in relation to their education.

Parents' involvement in school. The questionnaire was used to assess how mothers and fathers were involved in their children's school-related activities.

School learning environment. The Marjoribanks (1994, 2002) School Learning Environment Scale was used to assess the children's perceptions of their school learning contexts.

Self-concept. Items from a self-concept scale constructed by Marsh and Yeung (1997) were adapted for the present study.

Academic achievement. The academic achievement tests that I used are from the Secondary School Scholastic Aptitude Test published by the National Normal University (2000). This test includes verbal reasoning and mathematics reasoning measures that are assessed at five levels. In this study I adapted the verbal reasoning test at level 1 to assess Chinese-language academic achievement. In addition, I adapted the mathematics reasoning test at level 1 to assess mathematics academic achievement.

Results

In the first analysis I examine possible differences in mean scores between boys and girls on each of the predictor and outcome measures. Then in the following analyses, I investigate the hypotheses of the study.

Differences in Mean Scores

Table 1 shows the mean scores for boys and girls on each measure with the *t*-values associated with the differences in scores. The findings show no significant gender differences on any of the measures.

Tests of the Hypotheses

Hypothesis 1: Mothers are more involved in their children's education than are fathers.

The results in Table 1 reveal that the mean scores of mothers' involvement at home, involvement in school, and aspirations were higher than those of fathers. I examined the significance of these differences in mean scores between mothers and fathers for boys and girls to examine the first hypothesis.

Table 2 shows the findings that for both boys and girls mothers had significantly higher involvement at home and involvement in school mean scores than did fathers. The differences in aspiration scores were not significant. That is, mothers were perceived by their daughters and sons to be more actively involved than their fathers in their education at home and in school. That is, the findings provided partial support for the first hypothesis.

Hypothesis 2: Parents of middle social status provide stronger support at home and are more involved at school than are parents of lower social status.

Table 3 shows that for boys and girls, family social status had large zero-order correlations with fathers' and mothers' aspirations. In addition, family social status had medium associations with parents' involvement at school, whereas

Table 1
Mean Scores on Predictor and Outcome Measures for Boys and Girls

Variable	Mean Scores		t-value
	boys (n=128)	girls (n=133)	
Family status	12.02	12.09	.14
Birth order	1.80	1.68	1.12
Sibship size	1.34	1.53	1.90
Fathers' involvement at home	21.36	21.08	.46
Mothers' involvement at home	22.57	22.93	.82
Fathers' aspirations	12.45	12.29	.48
Mothers' aspirations	12.71	12.49	.71
Fathers' involvement in school	8.63	8.72	.30
Mothers' involvement in school	10.16	10.79	1.57
School environment	114.59	115.46	.54
Chinese language	102.07	105.53	1.68
Mathematics	95.97	94.01	1.11
Self-concept	41.3	40.93	.54

Table 2
Differences in Mean Scores between Mothers and Fathers for Boys and Girls

Family Variable	Mean	Difference	t-value
Boys (n=128)			
Fathers' involvement in school	8.63	1.53***	7.21
Mothers' involvement in school	10.16		
Fathers' involvement at home	21.36	1.21***	3.44
Mothers' involvement at home	22.57		
Fathers' aspirations	12.45	0.26$^{n.s.}$	1.88
Mothers' aspirations	12.71		
Girls (n=133)			
Fathers' involvement in school	8.72	2.07***	10.24
Mothers' involvement in school	10.79		
Fathers' involvement at home	21.08	1.86***	5.48
Mothers' involvement at home	22.93		
Fathers' aspirations	12.29	0.20$^{n.s.}$	1.65
Mothers' aspirations	12.49		

***$p<.001$.

family social status had a small significant association with mothers' support at home for their sons. The results also revealed that birth order had medium zero-order correlations with fathers' and mothers' aspirations for their sons, whereas number of siblings had a medium significant association with fathers' involvement in school for their sons. In addition, birth order and number of siblings had small significant associations with mothers' involvement in school

Table 3
Relationships Between Family Social Status and Family Structure With
Parents' Aspirations and Involvement in Their Children's Education

	Fathers' aspirations	Mothers' aspirations	Fathers' involvement at home	Mothers' involvement at home	Fathers' involvement in school	Mothers' involvement in school
Boys (n=128)						
Family status	.53***	.43***	.14	.21*	.35***	.33***
Birth order	−.38***	−.31***	−.15	−.13	−.12	−.08
Sibship size	−.43***	−.40***	−.06	−.11	−.20*	−.15
Girls (n=133)						
Family status	.52***	.47***	.13	.12	.26**	.32***
Birth order	−.12	−.09	−.09	.06	−.17	−.22**
Sibship size	.02	.01	.03	.03	−.14	−.18*

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

for their daughters. In general, the findings indicate that although family social status was related to the family environment scores, there were few significant associations between family structure and the other family measures. However, the findings did support the initial hypothesis of the investigation.

Hypothesis 3: Children whose parents are highly involved at home perceive the school environment more favorably.

The zero-order correlations in Table 4 show that for boys, fathers' and mothers' aspirations and mothers' support at home had medium significant associations with their children's perceptions of the school learning environment. In addition, mothers' aspirations and parents' support at home had medium significant relationships with girls' school learning environment. Parents' involvement at school was not, however, related to the school environment scores. That is, the findings show that hypothesis 3 was only partly supported.

A Test of the Theoretical Mediation Model

Hypothesis 4: The intervening family and school variables in the theoretical model mediate the relationships among family social status and children's academic achievement and self-concept.

To test the overall theoretical model of the study, I used multistage regression analysis. In the analysis the variables from the theoretical model were added to multistage regression equations in four stages. First, relations between family background and outcomes were examined. In the second stage the regression models included the measures of family structure. In the third stage parental involvement measures were included. The full regression models in the fourth stage included the measure of school learning environment.

Table 4

Relationships Between Family Influences and Children's Perceptions of Their School Learning Environment

Family influences	School environment
Boys (n=128)	
Fathers' aspirations	.20*
Mothers' aspirations	.27**
Fathers' involvement at home	.16
Mothers' involvement at home	.34***
Fathers' involvement in school	.04
Mothers' involvement in school	.08
Girls (n=133)	
Fathers' aspirations	.10
Mothers' aspirations	.20*
Fathers' involvement at home	.34***
Mothers' involvement at home	.32***
Fathers' involvement in school	.14
Mothers' involvement in school	.10

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

As Baron and Kenny (1986) indicate, variables function as mediators to the extent that they account for the relationships between predictors and outcomes. If full mediation occurred, then the relationships between family social status and each outcome would become nonsignificant after controlling for the associations between the intervening variables and outcomes. However, if the relationships were reduced, but remained significant, then partial mediation would be demonstrated.

Chinese-language achievement
The regression models in Table 5 show the relationships for Chinese-language achievement. In Model 1 the results indicate that the Chinese-language achievement of students from middle social status families were higher than those of students from lower social status families. The regression weights in Model 2 show that birth order had significant associations with Chinese-language scores. That is, the firstborn child had higher Chinese-language scores than did later-born children, after taking into account family social status. In Model 3, the measures of parents' involvement at home, parents' involvement in school, and parents' aspirations were added, and they were combined related to a medium amount of extra variance in Chinese-language scores (extra R^2=11.68%). In Model 4 the school environment measure was not related to Chinese-language achievement.

The final results revealed that the associations among family social status, birth order, parents' involvement at home and in school, and parents' aspirations with Chinese-language scores were all significant. The final R of .60, which is an index of the goodness of fit of the final regression model, demonstrated that for Chinese language there was an acceptable overall fit of the model to the data. In addition, the reduction of the b-weight from 1.92 to 1.01

Table 5
Regression Coefficients for Relationships Among Predictor Variables and
Chinese Language Achievement

| | Chinese Language | | | | | | | |
| | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
Predictor Variables	b	ß	b	ß	b	ß	b	ß
Family status	1.92***	.44	1.75***	.40	.95***	.22	1.01***	.24
Birth order			−3.80***	−.21	−3.34**	−.19	−3.41**	−.19
Sibship size			1.21	.06	2.20	.11	2.22	.11
Parents' involvement at home					.39***	.18	.45***	.20
Parents' involvement in school					.88***	.28	.86***	.28
Parents' aspirations					.94***	.27	.89***	.26
School environment							.06	.05
R	.44***		.48***		.59***		.60***	
R^2 %	19.71		23.13		34.81		35.40	
Effect size	.25[b]		.30[b]		.53[c]		.55[c]	
Extra R^2 %			3.42		11.68		0.59	

Effect size: [b]medium, [c]large.
*p<.05 **p<.01 ***p<.001.

indicated that the intervening variables mediated partly the relationships between family social status and Chinese-language scores. The beta weights in the final model showed that after taking into account the other predictors, parents' involvement in school and parents' aspirations had the strongest associations with differences in children's Chinese-language achievement.

Mathematics achievement
The regression models in Table 6 show the relationships for mathematics achievement. In Model 1 the results indicate that children from middle social status families had higher mathematics scores than did children from lower social status families. In Model 2 the findings showed that family structure was not related to the mathematics scores after taking into account the differences in family social status. The results in Model 3 indicated that the addition of parents' involvement at home, parents' involvement in school, and parents' aspirations made a medium independent contribution to the variation in mathematics achievement (extra R = 7.97%). In Model 4 the school measure was not related to mathematics scores.

Table 6
Regression Coefficients for Relationships Among Predictor Variables and
Mathematics Achievement

| Predictor Variables | Mathematics achievement | | | | | | | |
| | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
	b	ß	b	ß	b	ß	b	ß
Family status	1.56***	.42	1.46***	.39	.90***	.24	.93***	.25
Birth order			−1.72	−.11	−1.42	−.09	−1.39	−.09
Sibship size			.06	.003	.75	.04	.64	.04
Parents' involvement at home					.33**	.18	.39***	.21
Parents' involvement in school					.44**	.16	.45**	.17
Parents' aspirations					.81***	.27	.78***	.26
School environment							.08	.07
R	.42***		.43***		.52***		.53***	
R² %	17.64		18.75		26.72		27.67	
Effect Size	.15[b]		.23[b]		.36[c]		.38[c]	
Extra *R²* %			1.11		7.97		0.95	

Effect size: [b]medium, [c]large.
*p<.05 **p<.01 ***p<.001.

In general, the findings revealed that family social status, parents' involvement at home, parents' involvement in school, and parents' aspirations combined to have a large relationship with mathematics achievement. The final *R* of .53 demonstrated that for mathematics achievement there was an acceptable overall fit of the model to the data. In addition, the reduction of the *b*-weight from 1.56 to .93 indicated that the intervening variables mediated partly the relationships between family social status and mathematics achievement. The beta weights in the final model showed that family social status and parents' aspirations had the largest associations with differences in children's mathematics achievement.

Self-Concept
The regression models in Table 7 show the relationships for self-concept scores. In Model 1 the findings indicate that children from middle social status families had higher self-concept scores than did children from lower social status families. The findings in Model 2 revealed that birth order was related to the children's self-concept scores. That is, firstborn children had more positive

Table 7
Regression Coefficients for Relationships Among Predictor Variables and
Self-Concept

Predictor Variables	Self-Concept							
	Model 1		Model 2		Model 3		Model 4	
	b	ß	b	ß	b	ß	b	ß
Family status	.27***	.19	.21*	.15	−.08	−.06	.02	.01
Birth order			−.93*	−.16	−.59	−.10	−.43	−.07
Sibship size			.12	.02	.16	.02	.02	.003
Parents' involvement at home					.30***	.41	.24***	.33
Parents' involvement in school					.08	.08	.08	.07
Parents' aspirations					.29***	.26	.26**	.18
School environment							.14***	.32
R	.19**		.24**		.57***		.65***	
R^2 %	3.49		5.56		32.83		41.99	
Effect size	.04[a]		.06[a]		.49[c]		.72[c]	
Extra R^2 %			2.07		27.27		9.16	

Effect size: [a]small, [c]large
*p<.05 **p<.01 ***p<.001

self-concept than did later-born children after taking into account family social status differences.

In Model 3 parents' involvement at home, involvement in school, and aspirations combined to be related to a large amount of extra variation in children's self-concept scores (extra R^2=27.27%). Perceived parents' support at home and their aspirations had strong associations with self-concept scores. In Model 4 the perceptions of the school learning environment measure had significant associations with children's self-concept. The final R of .65 demonstrated that for self-concept there was an acceptable overall fit of the model to the data. In addition, the reduction of the b-weight from .27 to .02 indicated that the intervening variables mediated the relationship between family social status and children's self-concept. The beta weights in Model 4 showed that perceived parents' involvement at home and children's perceptions of school environments had the largest associations with self-concept.

Discussion

In general, the analyses in this study provided tentative support for the hypotheses of the investigation. Mothers tended to be more involved in their

children's education than were fathers. The findings are consistent with investigations, which suggest, for example, "virtually all the parental involvement in cooperative initiatives with schools relates to mothers: parents' power means 'mother power'" (CERI, 1997, p. 56). In addition, West and Noden (1998) indicate,

> Mothers generally assume overriding responsibility for their children's education. Furthermore, mothers with higher levels of education are more likely to use workbooks and employ private tutors to support their children's education; attendance at parents' evenings and informal discussion with teachers. (p. 1)

Nord, Brimhall, and West (1997) suggest in their analysis that in two-biological-parent families mothers are more likely to be involved in their children's education than are fathers.

Table 3 reveals that parents of middle social status provide stronger support at home and are more involved at school than are parents of lower social status. Much research has demonstrated that parents with higher social status are more likely to be involved in their children's schooling than are parents of lower social status (Lareau & Shumar, 1996; Nord et al., 1997; West & Noden 1998). Nord et al., for example, indicate, "In general, families with more financial resources show greater levels of involvement … Children have the most favorable outcomes if both of their parents exhibit high involvement" (pp. 24-53).

Children's self-concept was related to their perceptions of their school learning environments. In addition, children's self-concept had associations with parents' aspirations and parents' involvement at home. Birth order continued to be related to Chinese-language achievement, but was not associated with the other outcomes.

When I used multistage regression analysis to test the theoretical model of the study, the findings indicated that the associations between family social status and children's school-related outcomes were reduced when relationships involving the intervening variables were taken into account. The results for Chinese-language and mathematics achievement indicated that the relationships were reduced, but remained significant after the addition of the family and school measures, indicating that partial mediation was demonstrated. In contrast, the relationships between family social status and children's self-concept became nonsignificant after controlling for the associations between the intervening variables and outcomes, indicating full mediation. That is, there was general support for the theoretical model that suggested that the relationships between family social status and children's school outcomes were mediated, or partially mediated, by measures of family and school learning environments.

The analysis suggests the general propositions that: (a) children's academic achievement is related to their family social status and perceptions of immediate family learning environments; and (b) children's self-concept is associated with their perceptions of classroom learning environments, parents' aspirations, and parents' involvement at home. These propositions indicate the differential nature of the relationships among family and school environments and measures of children's school outcomes.

These findings are consistent with those of earlier investigations (Marjoribanks, 1997, 2002; Marjoribanks & Mboya, 1998, 2001). Marjoribanks (2002) indicates, for example, that, "The relationships between family background and students' school outcomes are mediated, in part, by relations involving family and school capital, individual characteristics and school outcomes" (p. 21).

Implications for Parents and Sschools

Educational reform that encourages greater parental participation in children's learning is a major challenge facing schools in Taiwan. This study indicates a significant relationship between parental involvement and children's school-related outcomes. The findings emphasize the need for Taiwanese schools to continue to develop parent-teacher partnerships for the benefit of children's learning.

The literature reviewed in this study and the analyses conducted suggest the need for parents to be meaningfully involved in their children's education. As Epstein and Sanders (2000) suggest,

> Shared responsibilities and overlapping influence mean that parents do not bear the entire burden of figuring out how to become and remain involved in their children's education across the years of schooling. Rather, schools share this burden and must create programs and conditions that inform, consult, assist, and involve all families in their children's education and development every year. Also, community groups, agencies, and individuals are not left to operate in geographic or in social isolation. Rather, educators, parents, and members of communities combine efforts to create a coherent program to help students succeed. (p. 287)

In Taiwan we must move forward to develop the concept of shared responsibilities between families and schools. From such shared responsibilities, parents from all social backgrounds may begin to understand better the educational reality of their children's schools. The present study suggests that if parent-teacher partnerships are to become meaningful, academic and affective outcomes of children from all family backgrounds are likely to be enhanced. It should be a goal of Taiwanese schools to ensure that such enrichment occurs for all students. This research contributes to an understanding of the challenges that face parents, teachers, and principals as they attempt to improve the educational outcomes for students.

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Appendix
Socioeconomic Status SES)

High ranking professional and the administrative personnel

101 University president	102 University professor
103 Physician	104 Judge
105 Scientist	106 High-level officer
107 Legislator, Controller	108 Board chairman
109 General	

Middle ranking professional and administrative personnel

201 Principal (primary or secondary school)   202 Teacher (primary or secondary school)
203 Certified (public) accountant   204 Judge, Lawyer
205 Engineer, Architect   206 Middle-rank officer
207 Member of a legislative body   208 Manager
209 Colonel, Captain   210 Artist, Writer
211 Reporter   212 Entrepreneur

Semi-professional and general administrative personnel

301 Technical personnel   302 Banker, Cashier
303 Wholesaler   304 Captain (army, air force, marine corps)
305 Policeman, Fireman   306 Sailor
307 Secretary to write legal document for others 308 Actor, Dress designer
309 Small-sized businesses

Technical worker

401 Skilled worker   402 Owner of a store, Retailer
403 Driver, Cook, Tailor   404 Barber
405 Postman   406 Typist
407 Soldier   408 Supervisor (of laborers)

Semi-technical and nontechnical worker

501 Worker, Laborer   502 Apprentice
503 Peddler   504 Tenant-farmer
505 Fisherman   506 Manual worker (janitor, cleaner)
507 Hired laborer   508 Waiter
509 Unemployment   510 Housewife