

**Evaluation of the Effectiveness of the Parent Institute for Quality Education**

**in Los Angeles Unified School District**

**September 2003 to May 2004**

**Evaluation Report**

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In September 2003, the Parent Institute for Quality Education asked faculty in the Gevirtz Graduate School of Education at the University of California, Santa Barbara, to evaluate the effectiveness of the PIQE 9-week parent education program using an experimental design. This report presents a brief background on PIQE, the methods used in the study, the results from the treatment and control groups, and concludes with a recommendation that the PIQE program continue to be offered by LAUSD schools based on the strong positive effects of the program on parent participants knowledge, beliefs and practices to support their children's education. We found that the effect sizes of the PIQE program are larger than reported in those found in other similar programs. In addition, PIQE is also highly effective in attracting large numbers of Latino parents to its programs.

**The Parent Institute for Quality Education**

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The Parent Institute for Quality Education was founded in San Diego in 1987. Since its founding, PIQE has taught parenting classes to over 200,000 mostly Latino parents in California. PIQE classes began to be offered in Los Angeles Unified School District in January of 1992. The LAUSD/PIQE program has graduated over 103,000 parents of elementary, middle and high school students since its inception. Although mainly focused on Latino families, the Institute has offered classes and has materials translated into Russian, Cambodian, Korean, Chinese, Armenian and English.

**Program Objectives**

The purpose of the Parent Institute is to assist parents to become involved in the education of their children. PIQE programs stress how important parents are to their child's future. The

underlying principle guiding PIQE is that parents, especially those who are low-income or recent immigrants to the United States, need information about (1) the educational system, (2) how to interact with the school and teachers, and (3) how to help their children at home to increase the potential for success at school.

## **Executive Summary**

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The Parent Institute for Quality Education (PIQE) has conducted parent educational programs in California and other nearby states since 1987. The PIQE programs are designed to address the needs of parents from diverse cultural and linguistic backgrounds and enable them to support their children's education. Two 9-week programs for parents are currently conducted for elementary schools and middle and high schools in Los Angeles Unified School District (LAUSD). In fall 2003, two researchers from the Gevirtz Graduate School of Education at the University of California, Santa Barbara (UCSB) conducted an experimental study to evaluate the effectiveness of the parent programs in LAUSD. A middle school was selected and the school staff accepted to participate in this study.

The experimental study included two stages: (1) parents were randomly assigned to a treatment and a control group, and both groups were pre- and post-surveyed before and after the program; and (2) classroom teachers were pre- and post-surveyed to gather data about parents' school contacts, especially with teachers, and their children's academic and behavior progress. Data were analyzed to learn the effects of the program on the treatment and delayed treatment groups, using several statistical tests such as factor and reliability analysis, ANOVA, ANCOVA, MANCOVA, Pearson's correlation, and effect sizes. Teachers' responses to open-ended questions were also analyzed and triangulated with the findings from the quantitative analyses.

### **Three main evaluation questions were addressed by the study:**

1. Is there a significant difference in parents' knowledge, beliefs and practices between the control and treatment group before and after the 9-week parent education program?
2. Do teachers perceive a change in the levels of involvement from both groups of parent participants before and after the program?
3. Do teachers perceive a change in the academic performance and behavior of the parents' children before and after the program?

Overall, findings showed that the PIQE classes positively changed parents' beliefs, attitudes, knowledge, and practices toward their children's education and their role in the education process. The results were consistent across grade levels (6-8) and are important since parent engagement is generally considered minimal at middle and high schools. The PIQE curriculum was effective in informing parents about the education system, helping them to support their children's schoolwork and motivating them to encourage their children to pursue a university

level education in the future. Highest effect sizes of the program were found in the areas of parents' knowledge (.84), college expectations (.54), parents' sense of self-efficacy for supporting their child's education (.54), parental role construction (.49), home learning activities (.35), parenting practices (.33) and parent-child dialogues (.30). Small effect sizes were found in home-school connection (.15). Changes in school practices may be needed to increase parents' contact with their children's schools.

The specific objectives of the PIQE programs are to:

- increase parent's sense of efficacy and beliefs about the importance of parent involvement,
- increase parents' knowledge of the school system,
- increase parents' knowledge of how to support their child's academic success at home with home learning activities as a means to increase parents educational engagement with their children,
- raise parent's expectations for their child's immediate and future educational aspirations, especially college or university options, and
- increase the contacts parents will make with the school to track their children's progress.

### **Program Description**

The program consists of nine sessions of 90 minutes (a planning session, six content sessions, one forum, and a graduation ceremony). Parents talk and interact with each other and with the instructor about the topic being discussed. Multiple classes are scheduled to accommodate the family's needs (e.g. morning or evening classes). All PIQE instructors use a prescribed curriculum that is translated into the parents' language and is specially designed for middle and high schools. Instructors from the same culture as the participants, who speak the language fluently, conduct the classes.

The PIQE program for middle and high schools focuses on the parents' understanding of the adolescence and how to motivate their growing child to succeed at school, and plan for college. This program includes the participation of the parents' children in some sessions. The sessions consist of the following topics: (1) adolescence change and growth, (2) positive communication and self-esteem, (3) how to motivate teenagers to read, (4) obstacles for success at school, (5) school system, and (6) the road to the university. See detailed description of contents and objectives for each session are in Appendix A

### **Evaluation Design**

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### **Evaluation Questions**

**The following main questions lead this evaluation study:**

1. Is there a significant difference in parents' knowledge, beliefs and practices between the control and treatment group before and after the 9-week parent education program?
2. Do teachers perceive a change in the levels of involvement from both groups of parent participants before and after the program?
3. Do teachers perceive a change in the academic performance and behavior of the parents' children before and after the program?

## **Evaluation Method**

An experimental design was used for this evaluation. In the fall of 2003, PIQE was offering the program to three schools. Of the three, Stevenson Middle School was selected for this study because the school staff was willing to participate in the research component. As an incentive, PIQE agreed to conduct two series of classes free of charge. The experimental study included parents and classroom teachers as study participants. The study consisted of two stages: (a) pre and post-survey of treatment and control groups of parents, and (b) pre and post-survey of classroom teachers.

### **Participants**

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Stevenson Middle School, grades 6-8, serves approximately 2,524 students, 99.6% who are Latino. Forty-three percent of the students are English Learners and 93% receive free or reduced price lunch. In 2003, the school Academic Performance Index was 555. The school did not meet their Annual Yearly Progress goals for any group or subgroup in 2003.

Parents . In October 2003, PIQE staff in collaboration with school staff identified a pool of approximately 1000 parents who had not previously attend PIQE classes. PIQE staff then invited these parents through telephone calls and follow-up flyers sent home with students to attend an orientation session about the PIQE program on October 21, 2003. Parents who attended the orientation were randomly assigned to a treatment group and a control group at their time of their arrival; for example, the first parent was assigned to the control group, the second to the treatment, and so on. In their separate rooms, both groups received an orientation to the program and were invited to participate in the study. The treatment group participated in an educational program starting October 28 through December 16, 2003.

Approximately 250 parents attended the orientation. A total of 220 parents, 105 in the control and 115 in the treatment group, signed a consent form for their participation in the study. Parents were pre-surveyed and paid ten dollars for completing the survey form. Parents were offered English and Spanish versions of the surveys, and questions were read and explained by the evaluators if necessary. Five assistants were in each room to assist illiterate parents answering the survey questions. Both groups of parents presented similar demographic characteristics, as shown in Table 1 below. One hundred and sixty-six parents completed both pre and post surveys: 71 in the control and 95 in the treatment. Calls were made to both groups to ensure a high a rate of return on the post survey.

Teachers . The school principal was contacted and asked to facilitate the evaluation study by allowing the evaluators to survey the teachers during staff meetings. Gift certificates for each grade level were offered to the school for their participation. The English Language Arts teachers of Stevenson Middle School were selected by the school to participate in the evaluation. The school staff provided the lists of students, parents and teachers, and the oldest child of the parent participant was selected for gathering data for this study. The evaluators attended the departmental staff meeting on October 28, 2003. After reading the notice of consent for the study, a total of 32 teachers completed a pre-survey for each student whose parents were either in the treatment or the control group. Teachers did not know whether the student was in a control or treatment group. Teachers were post-surveyed two months later in the first week of January.

**Table 1. Demographics of Parent Participants in the Experimental Study**

Demographics PRINT ON CAMPUS

	<b>Treatment</b>
<b>(n=95)</b>	
<b>Control</b>	
<b>(n=71)</b>	
<b>Ethnicity</b>	
Hispanic	
Other	99%
1%	100%
0	
<b>Relationship with child</b>	
Father	
Mother	
Other	21%
72%	
7%	28%

72%

0

**Socioeconomic level**

Free lunch

Reduced-price lunch

Do not qualify

92%

5%

3%

85%

15%

0

**Home Language**

Spanish

Other

99%

1%

99%

1%

**English Level (speaking)**

None

Beginner

Intermediate

Advanced

44%

32%

17%

7%

49%

34%

13%

4%

**Education Level**

None

1-3 grade

4-6 grade

7-12 grade

post high school

6%

9%

38%

45%

2%

7%

13%

31%

46%

3%

**Child's grade level**

6 grade

7 grade

8 grade

37%

34%

29%

46%

37%

17%

### **Data Analyses**

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The data analysis involved five stages:

- (1) Preliminary analyses of parents' survey data using analysis of variance (ANOVA), Cronbach's Alpha reliability, and factor analysis;
- (2) Comparison analyses of the treatment and control groups using the multivariate analysis of covariance (MANCOVA) and Cohen's *d* effect sizes;
- (3) Correlation analyses of parents' outcomes and attendance using Pearson's Correlation;
- (4) Analyses of the effects of the program on parent involvement and student performance and behavior using ANCOVA; and
- (5) Qualitative analysis of the teachers' responses to open ended questions about the children's academic performance, behavior, and their parental support.

Appendix D fully discusses and displays the data analysis.

### **Findings**

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The analyses of the parent self-reported data showed that the effects of the treatment group were significant in seven of the eight areas of parental involvement:

- home learning activities ( $F=3.64, p<0.05$ ),
- parents' expectations for their child going to college ( $F=7.79, p<0.001$ ),
- academic knowledge ( $F=14.38, p<0.001$ ),
- parenting practices ( $F=2.62, p<0.05$ ),



- parent-child dialogues ( $F=6.03$ ,  $p<0.01$ ),
- parents' sense of self-efficacy for supporting their child's learning ( $F=9.16$ ,  $p<0.001$ ) and
- parents' beliefs about their role and their child's schooling ( $F=2.49$ ,  $p<0.05$ ).

Although treatment parents did not show significant improvement in the area of home-school connection, they increased their participation in the PTA meetings ( $F=5.14$ ,  $p<0.05$ ). We also found that the parents' changes in their knowledge, beliefs and behavior were highly correlated to their attendance to PIQE classes.

Parents from the control group did not significantly change in any of the eight areas. The results suggest that parents' knowledge, beliefs and practices at home were reinforced by the PIQE classes. Treatment parents provided more reading materials to their children, increased their expectations for their children going to college, know more about the school system, improved their parenting practices, had more dialogues with their children, and changed their beliefs about their role for supporting their child's schooling.

The analysis of the teacher responses also indicates that the PIQE program had a strong effect on the parents' home learning activities. We found that the treatment parents requested more conferences than the control parents, and there was a significant positive difference in the treatment group's supervision of their children's homework. These outcomes relate directly to PIQE's goals of increasing parent's sense of self-efficacy as it relates to valuing parental involvement (and thereby increasing their participation) and also empowering parents to make more contact with the school to be aware of their child's academic progress. These results suggest PIQE is meeting their goal to increase parents' school and teacher connections and knowledge of the school system in an effort to support and understand their child's school performance.

Even though no immediate effect was found in the students' academic performance, this program did reduce the students' absences at school. Students of parents who attended the PIQE program missed fewer classes than the control group. While two months are too short to reveal the impact on the students' academic performance, potentially, children from the treatment group may improve academically because they are attending more classes and receiving more instruction.

Appendix E displays a detailed analysis of the findings and the appropriate charts.

## **Conclusions**

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This study was designed to evaluate the effectiveness of the parent programs conducted by the Parent Institute for Quality Education (PIQE) in Los Angeles Unified School District. The specific objectives of the PIQE programs are to: (1) increase parent's sense of efficacy and beliefs about the importance of parent involvement, (2) increase parents' knowledge of the school system, (3) increase parents' knowledge of how to support their child's academic success at home

with home learning activities as a means to increase parents' educational engagement with their children, (4) raise parent's expectations for their child's immediate and future educational aspirations, especially college or university options, and (5) increase the contacts parents make with the school to track their children's progress. Three main evaluation questions guided this study with a focus placed on the parents' outcomes and their children's academic performance and behavior.

The evaluation of the parents' outcomes found that the PIQE parent program conducted at Stevenson Middle School accomplished its academic objectives and positively changed parents' beliefs, attitudes, knowledge and practices toward their child's education. There was a significant difference between the treatment and control groups. The PIQE classes were effective in informing parents about the school system and how to help their child to succeed at school as well as in motivating them to support their children going to the university. As a result, parents changed their practices at home, providing more reading for their children and finding information about their children's academic level. The only area where PIQE did not significantly influence on parents' practices was in the area of home-school connections.

Compared to other studies of parent involvement programs, this study shows that the program had a significant effect on many aspects of parent involvement. The effect sizes were quite substantial for several of the factors: knowledge gained, college expectations, and parent sense of self-efficacy, and parent-child dialogue. For the other factors the effect sizes were in the moderate range, but much higher than have been previously reported in other parenting programs. As shown in the findings, the only factor where there was no significant difference was in the area of home-school connections.

There are several possible explanations for why the program did not affect the home-school connections construct. First, the program is only of 9-week duration focused on increasing parents' knowledge and practices at home to support their child's learning. It is likely to require more time before a significant change would be seen in the parents' participation in school activities since opportunities to contact the school or their child's teacher and to attend events such as PTA meetings are spread across the school year. Second, this construct may be influenced by the school invitations to participate in school activities and how parents perceive the invitations and openness of the school. Hoover-Dempsey & Sandler (1997) and Reed, Jones, Walker and Hoover-Dempsey (2000) proposed and then found that parents' perceptions of school invitations influenced parent involvement decisions. In this short time frame there were not opportunities for the school or teachers to change their practices and invitations.

Importantly, the teacher survey data collected one month after the post-PIQE survey shows there is a significant difference between the treatment and control groups on parental involvement. The teachers indicated that the parents in the treatment group had more one-on-one meetings with the teachers to discuss academics and that parents were more likely to have initiated these meetings. The open-ended comments also supported the quantitative data and indicated that the teachers felt positively about these meetings and the parents' willingness to support their child. The teachers also indicated there was a significant difference in parents of the treatment group's supervision of the child's homework after attending the PIQE classes.

**The teacher survey data showed no significant differences between the two groups in terms of students' grades or other indicators of academic performance.** This finding is not surprising given the short timeframe of the intervention. In terms of behavior there was one variable, number of absences, which showed a trend toward significance for the treatment group (.088). Several of the open-ended responses indicated that the students were doing better after the parents came to meet with the teachers. There were more positive comments about the treatment parents' students than about the control group. These data suggest that it does take time for behavior changes to occur.

The findings from this experimental study confirm previous studies of the impact of the PIQE program on parents' knowledge, attitudes, beliefs and practices (Chrispeels & González, 2003, Chrispeels & González, 2004; Chrispeels & Rivero, 2001). In 2002-03, the authors conducted an extensive pre-post test research design involving 1,150 PIQE parent graduates in 20 Los Angeles schools including 6 elementary, 13 middle school, and 1 high school. **The results of this study were similar showing the strong effects of the program in increasing parents' knowledge, home learning activities, parenting practices, parent role construct, and self-efficacy** (Chrispeels & González, 2003).

The evaluation of the academic performance and behavior of the parents' children also revealed that the PIQE program impacted on the students' outcomes, which is quite important given the short duration of the program and the short time frame for students to improve.

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## **Recommendations**

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The data strongly suggest that this program is effective in assisting parents to be more actively involved in their children's education, and thus fulfills the program's objectives. The data on the impact on student's educational progress and behavior in school is in a positive direction. Since these results were shown in a middle school, where few effective parent programs are known to exist, these findings are particularly encouraging and important. Based on these findings, we recommend that LAUSD approve this program as one of the choices available to schools to offer to parents.

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## **Appendix A**

### **Topic, objectives, contents and activities for the PIQE program for secondary schools**

#### **Session**

**Title/Topic**

**Objective**

**Contents/Activities**

1

Planning Session

Introduction and overview of the Program.

The Parent Institute, goals and objectives of the parent program, contents. Motivation for family involvement.

2

Adolescence: A time of change and growth

Know critical adolescence changes and encourage parenting practices to support the teenagers' socio-emotional growth.

Critical adolescence changes: physical, social, psychological and academic. Normal and self-destructive behaviors. Prevention. Case study. Parenting practices: consistency on decisions, listen to teenager, seek professional help.

3

Communication and self-esteem

Understand importance of positive communication and teenager's self-esteem, and encourage parenting practices for supporting the teenager's socio-emotional development.

Effective and ineffective communication. Self-confidence and self-esteem. Group exercise. Family practices for teenagers: praise efforts, relationships, communication with teenager, listening and vocabulary.

4

Motivation for teenagers to read

Understand importance of reading and how to motivate reading in secondary, and encourage parents' home learning activities.

Changes in reading from teenagers. How to motivate teenagers' reading. Importance of reading at the university level. Critical thinking. Parents' home learning practices: provide readings, develop ability to think critically.

5

Obstacles in the way of success in school

Understand teenagers' behavior and obstacles for academic success, and encourage parenting practices for developing mutually-respectful relationship with teenagers.

Adolescence challenges, sexuality and consequences, drugs and gangs. Academic failure. Parenting practices: know teenager's friends and activities outside home, talk about sex, drugs and gangs; talk about family values; relationships with teenager.

6

School system

Understand the middle and high school system, and encourage parents establishing home-school connections.

The school system in middle and high schools. School accountability report card. Classes at middle school, special programs. State and district standards, standardized tests. Parents' activities for home-school connections: visit child's teacher, know child's academic level, know special programs at school, review cum file, attend school activities.

7 The road to the university



Understand the importance of a college degree for ensuring a better life for the children, know college requirements and financial aid, and encourage parents making decision for their children's going to college.

Reasons for going to the university. Preparing to go to college since elementary school. Requirements for college admission: courses, exams, grades and credits. Financial aid. Parents' activities for helping their child's going to college: visit child's teacher and counselor, talk to child about going to college, attend university prep meetings at school, visit local universities, know dates of exams, investigate options for financial aid.

#### 8 Forum

Reinforce contents of the program and establish a direct communication with school staff.

Prepare questions for school staff. Meeting/forum with principals, teachers and counselors. Program evaluation.

#### 9 Graduation

Celebrate successes; appreciate parents' efforts and attendance.

Formal graduation ceremony. Speech of parent representatives from each class. Diplomas for parents who attended at least 4 of the first 6 sessions.

### **Appendix B**

#### **Parent Surveys Items, Scales and Categories**

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##### 1. Home Learning Activities

- a) Provide readings at home (1=not yet, 2=one time, 3=monthly, 4=weekly, 5=daily)
- b) Know my child's reading and math level (1=not yet, 2=know a little, 3=well informed)

##### 2. Home-School Connection

- a) Attend PTA meetings (1=not yet, 2=one time, ..... 5=always)
- b) Seek professional help when needed (1=not yet, 2=one time, ....5=daily)
- c) Review my child's cum file (1=not yet, 2=yes)

##### 3. Parent's Expectations for College Attendance

- a) Talk with my child about going to college (1=not yet, 2=one time, ..... 5=daily)
- b) Made the decision that my child should go to the university (1=not yet, 2=yes)
- c) Prepare 4-year plan with counselor (1=not yet, 2=yes)

d) Talk to counselor/teacher about my child's progress (1=not yet, 2=yes)

#### 4. Knowledge

a) Know how to help my child in middle school (1=strongly disagree, ..... 4=strongly agree)

b) Know about standardized tests and GPA (1=do not know, 2=know a little, 3=well informed)

c) Know the special programs available at school and district to help my child (1=do not know, ..... 3=well informed)

d) Know the requirements to enter to the university (1=do not know, ..... 3=well informed)

e) Know about financial aid available to attend university (1=do not know, .... 3=well informed)

f) Know the community resources to help my child (1=do not know, ..... 3=well informed)

g) Able to recognize self-destructive behaviors in my child (1=do not know, ..... 3=well informed)

#### 5. Parenting Practices

a) Consistency on decision affecting my child (1=not yet, 2=one time, .... 5=daily)

b) Talk to child about his/her interest and talents (1=not yet, 2=one time, ..... 5=daily)

c) Listen to child with attention and respect (1=not yet, 2=one time, ..... 5=daily)

d) Praise my child and tell my expectations (1=not yet, 2=one time, ..... 5=daily)

e) Know my child's activities outside home (1=do not know, ..... 3=well informed)

#### 6. Parent-Child Dialogues

a) Talk with my child about sex, drugs and gangs (1=not yet, 2=one time, .... 5=daily)

b) Talk with my child about our family values and goals (1=not yet, 2=one time, .... 5=daily)

#### 7. Parent's Sense of Self-Efficacy

a) Able to accept adolescent changes in my child (1=strongly disagree, ... 4=strongly agree)

b) I feel comfortable talking to my child's teachers (1=strongly disagree, ... 4=strongly agree)

#### 8. Parental Role Construction

- a) I have a great influence in my child's self-esteem (1=strongly disagree, .... 4=strongly agree)
- b) A college degree ensures a better life for my child (1=strongly disagree, ... 4=strongly agree)
- c) I believe my child is capable to study at the university (1=strongly disagree, ... 4=strongly agree)
- d) My child's future success requires my participation at school (1=strongly disagree, ... 4=strongly agree)
- e) My child's future success requires my supervision and help of schoolwork at home (1=strongly disagree, .... 4=strongly agree).

**Appendix C Teacher Surveys Items, Scales and Categories**

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1. Child's Academic Performance

- a) Frequency of in-class assignments completed (1=never, 2=occasionally... 5=usually)
- b) Frequency of homework completed (1=never, 2=occasionally... 5=usually)
- c) Engagement in class (1=not at all, 2=somewhat, ..... 4=well engaged)
- d) Current reading level (1=2-3 yrs below grade level, 2=1 yr below grade level, 3=just below grade level, 4=at grade level, 5=above grade level)
- e) Current grade in class (1=F, 2=D, 3=C, 4=B, 5=A)

1. Child's Behavior

- a) Number of unexcused absences
- b) Number of tardies
- c) Frequency of behavioral problems (1=never, 2=occasionally, .... 5=daily)
- d) If more than monthly, type of behavioral problem
- e) Number of suspensions

1. Parental Involvement

- a) Parents' attended school meetings (1=no, 2=yes)
- b) One-to-one meeting with parent (1=no, 2=before PIQE program, 3=after PIQE program)
- c) Purpose of one-to-one meeting (1=behavior, 2=academics)
- d) Who initiated the one-to-one meeting (1=teacher, 2=both, 3=parent)
- e) Parents' supervised homework (1=no, 2=yes)
- f) Parents' requested information about child's performance (1=no, 2=yes)

## **Appendix D**

### **Data Analysis**

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#### **Preliminary Analyses of Parents' Survey Data**

We conducted a preliminary analysis of the parent self-reported data to determine: (1) the equivalence of the experimental groups (treatment and control) before the educational program using the ANOVA test, and (2) the underlying factors or areas of parental involvement using reliability and factor analyses.

#### **Equivalence of comparison groups**

To ensure that the treatment and control groups were equivalent prior to the education program, the parents' pre-survey data were examined for any preexisting differences in parents' demographics, knowledge, beliefs and practices using the one-way ANOVA test. The ANOVA results showed that there were not significant differences between the treatment and control groups at the beginning of the study in the parents' demographic data (English level, education level, ethnicity, relationship with child, SES, child's grade level). However, a preliminary analysis of the Levene's test of homogeneity of variances showed unequal variances in the parents' educational level were unequal (4.36,  $p < .05$ ). We observed that the differences in parents' education ranged from illiterate to post-high school, with the majority falling within the elementary and some high school level. The possible effects of this variable were controlled in the MANCOVA analysis.

The analysis of preexisting differences in parents' participation at school (classroom volunteer, served in school committees) also resulted in no significant differences between the two groups. In the overall survey results there were no significant differences between the groups; however, an item-by-item analysis revealed significant differences in 8 out of the 32 items. The analysis of a priori differences in parents' knowledge, beliefs and practices between the groups, showed that

the treatment group mean pretest scores were significantly higher at  $p < .05$  in 8 of the 32 items. These variables were also controlled in the MANCOVA analysis.

In summary, the two samples of parents that were randomly assigned to the treatment or control groups did not have significant differences in their demographics and participation at school, and in most areas of knowledge, beliefs and practices.

### **Reliability and factor analyses of parents' survey data .**

To determine the underlying factors in parents' knowledge, beliefs and practices measured by the parent survey, two analyses were performed using the post-test data. First, a Maximum Likelihood factor analysis with Direct Oblimin rotation of the 32-item survey responses was conducted for the entire sample of parents ( $n=166$ ). Factors with eigenvalues greater than 1.0 that accounted for most of the variance of the data were selected. Second, the Cronbach's alpha reliability analysis was conducted to determine the internal consistency of the pre- and post-surveys, and the internal consistency of each of the factors obtained in the factor analysis. The analysis of the parent data yielded 9 factors with eigenvalues greater than 1.0; eight main factors with loadings above 4.0 were selected that accounted 64% of the variance. The eight final factors were translated into the following constructs: home learning activities, home-school connection, college expectations, knowledge of the school system and how to support their children, parenting practices, parent-child dialogues, sense of self-efficacy, and parental role construction. A reliability analysis was also conducted, showing an overall high internal consistency with Cronbach's Alpha coefficients of .87 for the pre-survey data, and .91 for the post-survey data. The reliability analyses for each of the constructs indicated that seven out of the eight factors had good internal consistency, ranging from .50 to .88. The parents' self-efficacy factor had a low Alpha coefficient of .24 and an item was dropped (“*my English is an obstacle in contacting the school*”), resulting in a higher Alpha coefficient of .44. The reliability coefficients and factor loadings of the items are presented in Appendix F.

### **Comparison analysis of treatment and control groups**

The *Multivariate analysis of covariance* (MANCOVA) test were computed to determine the statistical significance between the treatment and control groups of parents. The F-test for each construct was computed using the Multivariate Analysis from the General Linear Model in the SPSS 11.0. The parents' posttest scores on each survey item were analyzed as dependent variables, adding the experimental group (a dichotomous variable; 1=treatment, 0=control group) as fixed factor and the parents' educational level as the covariate. In our preliminary data analyses of a priori differences between the two groups, we did not find significant differences in the parents' demographics and participation at school; however, differences within the groups were found in the parent educational level. We did not want to attribute changes in parent outcomes due to the program when in fact they were due to differences in parent education. Therefore, we included this variable as covariate as a further precaution for statistical equation to guard against its possible effects that might bias the results of the parents' outcomes from program (Cook & Campbell, 1979; Shapka & Keating, 2003).

The *Cohen's d effect sizes* were also calculated in order to determine the magnitude of the differences between the treatment and control groups of parents (i.e. how large the difference one should expect). As researchers we were concerned with not only whether the null hypothesis was false or not, but also how false it was. In other words, if the difference is not zero, how large is the difference? The effect size *d* is the mean difference between groups in standard score form (i.e. the ratio of the difference between the means to the standard deviation). In this study, the effect sizes were computed using the mean posttest scores of the treatment and control groups and the pooled standard deviation. The DSTAT 1.11 software was used for the calculation of the Cohen's *d* and the 95% confidence interval.

### **Correlation analysis**

The Pearson Product Moment Correlation was computed to determine the extent of the relationship between the observed changes in the parents' responses from the treatment group and their attendance to the PIQE classes. By using the Pearson's correlation test, we expect to determine if the parents' self-reported changes in knowledge, beliefs and practices are correlated with the PIQE classes (i.e. are parents' scores gains associated with the number of PIQE sessions that they attended?); as well as the strength and direction of this relationship. The correlation between the parents' score gains, the parents' attendance at each session, and the total attendance to the six main content sessions was computed.

### **Effects on Student Academic Performance, Behavior and Parent Involvement**

The Univariate Analysis of Covariance (ANCOVA) was computed to determine the statistical significance of the difference between treatment and control groups based on the teacher survey data. The F-test was calculated for each item in three specific areas were assessed: child's academic performance, child's behavior and parental involvement. The post-test scores were analyzed as dependent variables, adding the experimental group (a dichotomous variable; 1 = treatment, 0 = control group) as fixed factor. The pre-test scores were entered as covariate. A preliminary analysis (frequency distributions) of the pre-test scores showed that there were pre-existing differences between the groups. We did not want to attribute changes in parent or student behavior or academics to the program when in fact they may be due to prior differences between the two groups; therefore, the effects of the pre-test scores were controlled in this ANCOVA analysis.

### **Qualitative analysis**

The teachers' responses to the open-ended questions were content analyzed and organized into categories. The results were aggregated to the quantitative analyses and are reported in the findings section.

## **Appendix E**

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### **Detailed Findings and Charts**

The results of the experimental study are presented addressing each of the four main research questions:

1. Is there a significant difference in parents' knowledge, beliefs and practices between the control and treatment group after the 9-week parent education program?

Three set of analyses were performed to assess the difference of self-reported outcomes between the treatment and control groups. The MANCOVA, effect sizes, and Pearson's correlations were computed to address this question.

### **Differences in Multivariate Analyses of Covariance**

The first set of analyses compared the post-test responses of the two groups of parents (treatment and control group). The multivariate analysis of covariance (MANCOVA) was run for the parents' self-reported outcomes in each of the eight areas, with the experimental group entered as the fixed factor, and parents' educational level as covariate. The results of the omnibus F Hotelling's Trace showed that the effects of the treatment group for this MANCOVA was significant in seven of the eight areas: home learning activities ( $F=3.64, p<0.05$ ), parents' expectations for their child going to college ( $F=7.79, p<0.001$ ), academic knowledge ( $F=14.38, p<0.001$ ), parenting practices ( $F=2.62, p<0.05$ ), parent-child dialogues ( $F=6.03, p<0.01$ ), sense of self-efficacy for supporting their child's learning ( $F=9.16, p<0.001$ ), and parents' beliefs about their role and their child's schooling ( $F=2.49, p<0.05$ ). Overall, treatment parents did not show significant improvement in the area of home-school connection ; however, these parents increased their participation in PTA meetings ( $F=5.14, p<0.05$ ). Parents from the control group did not significantly change in any of the eight areas. The results suggest that parents' knowledge, beliefs and practices at home were reinforced by the PIQE classes. Table 4 displays the results of the MANCOVA analyses.

Table 4. Multivariate Analyses of Covariance for the Effect of the Parent Educational Program on Parents' Knowledge, Beliefs and Practices

#### **Multivariate Analysis of Covariance**

**F**  
**Sig.**  
**df**

#### **Home Learning Activities**

Provide readings at home

Know child's reading and math level

**3.64\***

5.05\*

4.85\*

**.029**

.026

.029

**1, 149**

1, 149

1, 149

### **Home-School Connection**

Attend PTA meetings

Seek professional help when needed

Review my child's cum file

**1.71**

5.14\*

0.23

0.74

**.167**

.025

.636

.390

**1, 140**

1, 140

1, 140

1, 140

### **College Expectations**

Talk with child about going to college

Made decision my child going to college



Prepare 4-year plan with counselor

Talk to counselor/teacher about child's progress

7.79\*\*\*

11.60\*\*\*

16.97\*\*\*

2.84

18.15\*\*\*

.000

.001

.000

.094

.000

1, 149

1, 149

1, 149

1, 149

1, 149

### **Knowledge**

Know how to help child in middle/high school

Know about standardized tests and GPA

Know special programs at school/district

Know requirements for college admission

Know financial aid available for college

Know community resources to help child

Able to recognize self-destructive behaviors

14.38\*\*\*  
20.92\*\*\*  
49.47\*\*\*  
28.67\*\*\*  
59.36\*\*\*  
83.01\*\*\*  
5.40\*  
11.84\*\*\*  
    **.000**  
.000  
.000  
.000  
.000  
.000  
.000  
.022  
.001  
    **1, 139**  
1, 139  
1, 139  
1, 139  
1, 139  
1, 139  
1, 139  
1, 139

## Parenting Practices

Consistency on decisions affecting my child

Talk to child about interests and talents

Listen to child with attention and respect

Praise my child and tell my expectations

Know my child's activities outside home

**2.62\***

9.64\*\*

2.51

5.83\*

4.86\*

0.72

**.027**

.002

.116

.017

.029

.397

**1, 147**

1, 147

1, 147

1, 147

1, 147

1, 147

## Parent-Child Dialogues

Parent-child talks about sex, drugs and gangs

Parent-child talks about family values and goals

**6.03\*\***

0.90

11.09\*\*\*

**.003**

.344

.001

**1, 149**

1, 149

1, 149

### **Sense of Self-Efficacy**

Able to accept adolescent changes in my child

Feel comfortable talking to counselor/teacher

**9.16\*\*\***

13.34\*\*\*

9.13\*\*

**.000**

.000

.003

**1, 146**

1, 146

1, 146

### **Parental Role Construction**

I have a great influence in my child's self-esteem

A college degree ensures child's better life

I believe my child is capable to study at college

School counselor is important in middle/high

My child's success requires my participation at school

My child's success requires my supervision of schoolwork

**2.49\***

10.98\*\*\*

6.38\*

7.27\*\*

8.72\*\*

3.08

4.32\*

**.025**

.001

.013

.008

.004

.082

.040

**1, 146**

1, 146

1, 146

1, 146

1, 146

1, 146

\*Statistically Significant  $p < .05$

\*\* Statistically Significant  $p < .01$

\*\*\*Statistically Significant  $p < .001$

### Estimates of Effect Sizes

The effect size (Cohen's  $d$ ) was also computed to learn the magnitude of the differences between the treatment and control group. The mean of each item of the parents' post-test data from the treatment group was subtracted from the mean from the control group and divided by the pooled standard deviation.

There is much argument about how to interpret effect sizes in education. Cohen (1988) suggested .20 as small, .50 medium, and .80 large effect size. However, he acknowledged the danger of using these terms out of context. Glass et al. (1981) are particularly critical, arguing that the effectiveness of a particular intervention program can only be interpreted in relation to other interventions that seek to produce the same effect. They argue that in education, an effect size of .1 in student achievement can be a very significant improvement, particularly if the effect was cumulative over time. Very few studies provide comparison data for effect sizes of parental involvement. Layzer et al. (2001) computed the effect size of 665 studies of family support programs and found two parent outcomes among the largest range of effects. The short-term average effect sizes on parents across the studies were: .23 for parenting attitudes and knowledge and .26 for parenting behavior.

The results confirmed the findings from the multivariate analyses showing that the PIQE education program had high effect sizes on the parents' self-reported outcomes in seven of the eight areas: *home learning activities* (.35), *college expectations* (.54), *academic knowledge* (.84), *parenting practices* (.33), *parent-child dialogues* (.30), *sense of self-efficacy* (.60), and *parental role* (.49). The PIQE classes had low effect sizes in the area of *home-school connection* (.15).

Table 5 below displays the results of the effect sizes.

Table 5. Effect Sizes of PIQE Parent Program on Parents' Self-Reported Outcomes

#### Effect Sizes

Scale Range  
Treatment

Posttest Mean (SD)

**Control**

**Posttest Mean (SD)  
95% Confidence Interval**

**Cohen**

*d*

**Lower  
Upper**

**Home Learning Activities**

Provide readings at home

Know child's reading and math level  
1-5

1-3  
4.14 (1.17)

2.63 (.61)

3.82 (1.37)

2.36 (.68)  
.01

.25  
.49\*

.68\*  
.35

.23

.46

**Home-School Connection**

Attend PTA meetings

Seek professional help when needed

Review my child's cum file

1 - 5

1 - 5

1 - 2

2.23 (1.22)

2.08 (1.42)

1.60 (.49)

1.94 (1.13)

2.03 (1.45)

1.58 (.50)

.03

-.13

-.12

.48\*

.31

.32

**.15**

.26

.09

.10

### **College Expectations**

Talk with child about going to college

Made decision my child going to college

Prepare 4-year plan with counselor

Talk to counselor/teacher about child's progress

1 - 5



1 - 2

1 - 2

1 - 2

4.30 (.95)

1.91 (.29)

1.19 (.40)

1.78 (.42)

3.72 (1.44)

1.70 (.46)

1.09 (.28)

1.45 (.50)

.24

.35

.15

.52

.68\*

.79\*

.58\*

.97\*

**.54**

.46

.57

.36

.75

**Knowledge**

Know how to help child in middle/high school

Know about standardized tests and GPA

Know special programs at school/district

Know requirements for college admission

Know financial aid available for college

Know community resources to help child

Able to recognize self-destructive behaviors

1 - 4

1 - 3

1 - 3

1 - 3

1 - 3

1 - 3

1 - 3

3.44 (.62)

2.59 (.72)

2.31 (.67)

2.63 (.59)

2.55 (.67)

2.19 (.74)

2.62 (.53)

2.97 (.74)

1.88 (.76)

1.84 (.56)

1.86 (.74)

1.66 (.70)

1.99 (.74)

2.31 (.63)  
.53

.76

.57

.96

1.10

.06

.32  
.98\*

1.22\*

1.02\*

1.43\*

1.57\*

.50\*

.76\*  
**.84**

.76

.99

.88

1.20

1.33

.28

.54

**Parenting Practices**

Consistency on decisions affecting my child

Talk to child about interests and talents

Listen to child with attention and respect

Praise my child and tell my expectations

Know my child's activities outside home

1 - 5

1 - 5

1 - 5

1 - 5

1 - 3

4.17 (1.09)

4.50 (.88)

4.81 (.60)

4.54 (.83)

2.83 (.41)

3.61 (1.44)

4.21 (1.24)

4.35 (1.22)

4.23 (1.21)

2.70 (.52)

.27

.04

.14

.05

.04

.71\*

.47\*

.57\*

.48\*

.48\*

**.33**

.49

.26

.36

.27

.26

### **Parent-Child Dialogues**

Parent-child talks about sex, drugs and gangs

Parent-child talks about family values and goals

1 - 5

1 - 5

3.92 (1.32)

4.13 (1.12)

3.75 (1.42)

3.54 (1.41)

-.10

.25

.33

.69\*

**.30**

.12

.47

### **Sense of Self-Efficacy**

Able to accept adolescent changes in my child

Feel comfortable talking to counselor/teacher

1 - 4

1 - 4

3.66 (.50)

3.59 (.67)

3.31 (.66)

3.13 (.95)

.39

.34

.84\*

.79\*

**.60**

.62

.57

### **Parental Role Construction**

I have a great influence in my child's self-esteem

A college degree ensures child's better life

I believe my child is capable to study at college

School counselor is important in middle/high

My child's future success requires my participation at school

My child's future success requires my supervision of schoolwork

1 - 4

1 - 4

1 - 4

1 - 4

1 - 4

1 - 4

3.90 (.33)

3.93 (.36)

3.73 (.49)

3.82 (.41)

3.79 (.48)

3.79 (.55)

3.62 (.60)

3.68 (.58)

3.46 (.63)

3.53 (.64)

3.60 (.60)

3.53 (.74)

.37

.27

.26

.37

.15

.20

.81\*

.71\*

.70\*

.82\*

.59\*

.64\*

**.49**

.59

.49

.48

.60

.37

.41

*\*Statistically Significant  $p < .05$*

*\*\* Statistically Significant  $p < .01$*

*\*\*\*Statistically Significant  $p < .001$*

### **Correlations with Parents' Attendance to PIQE Classes**

The score gains from the parent treatment group were correlated with their attendance to each session and the total attendance at the six content-focused PIQE classes. Overall, the Pearson's correlation analyses resulted in a positive correlation of parents' attendance with the parents' outcomes in all eight assessed areas. The parents' outcomes gains in 12 out of the 31 items were not correlated with their attendance days. The individual correlations also showed that the parents' responses in the areas of college expectations and knowledge were most highly correlated with the total attendance days. These results show that the PIQE sessions were highly effective for positively influencing the parents' knowledge and their expectations for their child's higher education. Table 6 below shows these correlations.

Table 6. Correlation Analysis of Attendance to PIQE Classes and Parents' Outcomes

#### **Correlation Analysis**

##### **Attendance**

##### **Home Learning Activities**



Provide readings at home

Know child's reading and math level  
.169\*

.100

### **Home-School Connection**

Attend PTA meetings

Seek professional help when needed

Review my child's cum file  
.166\*

.074

-.093

### **College Expectations**

Talk with child about going to college  
Made decision my child going to college  
Prepare 4-year plan with counselor  
Talk to counselor/teacher about child's progress  
.033

.170\*

.201\*

.178\*

### **Knowledge**

Know how to help child in middle/high school  
Know about standardized tests and GPA  
Know special programs at school/district  
Know requirements for college admission  
Know financial aid available for college  
Know community resources to help child  
Able to recognize self-destructive behaviors  
.217\*\*

.230\*\*

.222\*

.387\*\*

.405\*\*

.110

.175\*

### **Parenting Practices**

Consistency on decisions affecting my child

Talk to child about interests and talents

Listen to child with attention and respect

Praise my child and tell my expectations

Know my child's activities outside home

.177\*

.069

.197\*

.067

-.109

### **Parent-Child Dialogues**

Parent-child talks about sex, drugs and gangs

Parent-child talks about family values and goals

.032

.170\*

### **Sense of Self-Efficacy**

Able to accept adolescent changes in my child

Feel comfortable talking to counselor/teacher  
.223\*\*

.127

### **Parental Role Construction**

I have a great influence in my child's self-esteem

A college degree ensures child's better life

I believe my child is capable to study at college

School counselor is important in middle/high

My child's future success requires my participation at school

My child's future success requires my supervision of schoolwork  
.057

.233\*\*

.016

.172\*

.230\*\*

.132

*\*Statistically Significant  $p < .05$*

*\*\* Statistically Significant  $p < .01$*

2. Do teachers perceive a change in the levels of involvement from both groups of parent participants before and after the program ?

The ANCOVA was computed to assess teacher perceptions of two outcomes of the program on the parent participants: the home learning activities (e.g. supervise homework), and home-school connection (e.g. attend school activities, meet with teacher). Data were gathered from a pre and post survey given to classroom teachers before and after the PIQE classes. The ANCOVA analysis showed several items where there was a significant difference between treatment and control groups in both areas. In particular, treatment parents were more likely to hold a one-on-one meeting with the teacher, and the requests for this meeting emanated from the parents and focused on discussions of the academic progress. There were no significant differences in the areas of attending school meetings, requesting information about the child, or responses to

teacher initiated requests for conferences. About 50% of both treatment and control groups were reported by the teachers to attend parent teacher conferences and back-to-school nights. The teachers indicated there was a significant positive difference in the treatment group's supervision of their children's homework. These outcomes relate directly to PIQE's goals of increasing parent's sense of self-efficacy as it relates to valuing parental involvement (and thereby increasing their participation) and also empowering parents to make more contact with the school to be aware of their child's academic progress. These results suggest PIQE is meeting their goal to increase parents' school and teacher connections and knowledge of the school system in an effort to support and understand their child's school performance.

Table 7. ANCOVA - results of teacher perceptions of parental involvement

**Univariate Analysis of Covariance**

**F Sig. df**

**Home Learning Activities**

Parent supervised homework

6.12\*\* 0.015 1,120

**Home-School Connection**

Parent's response to teacher initiated contact

2.01

0.159

1,120

Had one-to-one meeting with parent

6.02\*\*

0.016

1,120

Purpose of meeting (academics)

11.62\*\*\*

0.001

1,120

Parent initiated the meeting

7.24\*\*

0.008

1,120

Parent attended school activities

0.02

0.881

1,120

Parent requested information about child

2.47

0.119

1,120

*\*Statistically Significant  $p < .05$*

*\*\* Statistically Significant  $p < .01$*

*\*\*\*Statistically Significant  $p < .001$*

3. Do teachers perceive a change in the academic performance and behavior of the parents' children before and after the program ?

Teachers were also surveyed on other areas that related directly to their students' progress. The ANCOVA was also used to assess two outcomes of the program on the teacher's perceptions of students: academic progress (e.g. grade in English class), and behavior (e.g. behavior in class, attendance, and tardies).

In the area of academics, there were no significant differences between treatment and control groups. These results are probably not that surprising considering the PIQE classes were given over a two-month period and while that may translate into immediate results for parents (the direct participants) any results that may be trickled down to students (the indirect participants) could take longer than this brief period.

Similarly, there were no significant differences in student behavior as reported by teachers. However, there was a significant trend in one area: number of absences decreased more in the treatment group. Again the short timeframe between these measures may be one likely explanation for the lack of differences between treatment and control.

Table 8. ANCOVA-test in areas of academics and behaviors from teacher surveys

#### **Univariate Analysis of Covariance**

**F**

**Sig.**

**df**

#### **Student Academic Performance**

Frequency of in-class work

0.28

0.594  
1,115

Frequency of completing homework

0.18  
0.673  
1,114

Reading level

1.15  
0.286  
1,111

Grade in class

0.01  
0.928  
1,102

Engagement in class

0.38  
0.542  
1,103

### **Student Behavior**

Number of absences

2.96  
0.088  
1,120

Number of tardies

0.35  
0.557  
1,120

Number of suspensions

1.16  
0.284  
1,120

Frequency of behavioral problems

0.08  
0.777  
1,120

Type of behavioral problems

0  
0.984  
1,119

The statistical data are supported by the open-ended responses of the teachers on the post-surveys that are displayed below.

### **Treatment Group : Teacher Responses**

*Parent initiated parent/teacher conference. We had 2 meetings, parent is concerned for performance and is [now]a volunteer in the parent center. Parent has attended all school activities. 8 th grade teacher, ESL Advanced.*

*This student needed vocabulary skill building and had D-S-S, C-S-S grades in my class. His parents requested a conference to talk about his grade and we met on January 27, 2004. They seem good, motivated parents, have agreed to monitor independent reading. Eight grade teacher, English class.*

*Parent requested a meeting to see the student's grades. We met in class on November 3, 2003. I informed student was not doing homework. Good response from parents –helped, willing to come into class. Good student, but he probably has a learning disability. 7 th grade, ESL/Language Arts.*

*This child is doing well but talks sometimes, nothing serious. I had a conference with the parents to discuss about student's talking. His behavior improved dramatically. 7 th grade, English class*

*This parent requested a meeting to check on student. We met on January 23, 2004. The child is improving since then. The parents are supervising homework at home, attending school meetings, and requesting information about the student's academic performance. 8 th grade teacher, English class.*

Of the 17 detailed (e.g., more than good child, good parent) comments from teachers about students whose parents were in the treatment group, all but 2 were positive, indicating that the parents had initiated contact, were trying to help their child academically, or were seeking ways to understand how to support the teacher and child in their academic goals.

### **Control Group: Teacher Responses**

*They [parents] seem to support student both ethically and in practical ways such as making sure homework is done. She's self-disciplined and motivated undoubtedly due to basic good parenting. 8 th grade teacher, English class.*

*I sent a letter to parents about missing homework that wasn't returned. I called and talked with the mother. We had a meeting in the fall. She assured me that detention and homework would be completed. We scheduled a second meeting and she didn't show up. The parent has not done as*

*she promised, i.e., to make sure her child completes the homework . 8 th grade teacher, English class.*

*She's [student] quietly active in class, but does little homework or work outside of class. I sent homework requirements to parents. Parents need to pay close attention to whether she [student] does her homework from week to week. 8 th grade teacher, English class.*

*I called and sent note to parents because she [student] does not complete homework or class work. Grandma came to my request on November 5, 2003. I place student on a DPR. No real parent support –meeting I had was with grandma –no sign of a parent! 8 th grade teacher, English class.*

*I sent a detention notice, and note for not doing reading log homework. Parents signed note –no comments. They seem to support good values and ethical behavior, but don't seem to oversee practical things like homework. 7 th grade teacher, English class*

*I sent letter informing parents of missing homework. The mother signed a contract and said she would make sure it was completed, but she did not keep her promise. 8 th grade teacher, English class.*

In the control group, 6 of the 10 extensive comments from teachers indicated a lack of parental involvement, the need for parents' to follow through with agreements made to the teacher, or a lack of results from the parents' efforts. Overall, the comments support the previous results that the treatment parents have become more actively involved in their children's schooling, and are taking a more proactive role in meeting and planning with the teacher. Although an effort is being made by the treatment group to involve themselves in their child's academics as the data show, more time is needed to see if this added involvement translates into continued academic and behavioral benefits on the part of the students and becomes reflected in their grade.

## **Appendix F**

### **Reliability Coefficients and Factor Loadings for Items of Parent Self-Reported Data**