

ABSTRACT

SHAJITH, BINDIYA. Bringing Parents to School: The Effect of Invitations from School, Teacher, and Child on Parental Involvement in Middle Schools. (Under the directions of Dr. William Erchul.)

Parental involvement in children's school and education has been found to be beneficial for children's academic and social competence. However, parental involvement tends to decrease as children grow older and move from elementary to secondary school. It is therefore important to devise ways to promote parental involvement at the secondary level, especially in middle schools. Research has shown parental perceptions of invitations for participation in school activities to be positively associated with parental involvement. Frequent and positive home-school communications have been also found to promote parental participation in children's educational activities.

The differential effect of three types of invitation (general school invitation, an additional specific teacher invitation, and an additional specific child invitation) on middle school parents' decisions to become involved in their children's school activities was studied. It was hypothesized that specific invitations from teachers for participation would be a better predictor of parental attendance at a school event than general invitations from the school, and that specific invitations from a child would be a better predictor of parental involvement than specific invitations from a teacher. Moreover, parental commitment to attend the event was predicted to have a positive effect on parent attendance. Effects of gender and grade level of a student on parental attendance were also explored.

Three middle schools participated in this study. The Family Science and Math Night conducted in the three middle schools was used as the target event for the study. Homerooms in the schools were randomly assigned to three conditions: a) General Invitation only (control group), b) General Invitation with a Specific Teacher Invitation, and c) General Invitation with a Specific Child Invitation. Parents in the three schools were invited to the target event using these invitations. On the day of the event, data were gathered on the parents who attended the event to determine the most effective type of invitation.

Data were analyzed using Logistic Multilevel Models and SAS PROC GLIMMIX 9.2 was used to fit the models. Results showed additional specific teacher invitations to be better predictors of parental attendance when compared to additional child invitations and general invitations only. Parents who agreed to come to the event were found to be about 14 times more likely to attend the event. Parents of non-Hispanic students were about three times more likely to attend the event at two of the three schools. Student gender and grade level did not have an effect on parent attendance. However, parents of girls were found to be 1.6 to three times more likely to respond to the specific invitations. Similarly, in one middle school, sixth and seventh graders were found to be 12 and 24 times more likely to respond to specific invitations respectively. Limitations and implications are also discussed

Bringing Parents to School: The Effect of Invitations from School, Teacher, and Child on
Parental Involvement in Middle Schools

by
Bindiya Shajith

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APPROVED BY:

Edward Sabornie

Denis Gray

William Erchul

Mary Haskett

Chair of Advisory Committee

DEDICATION

To Sayanth for being an easy baby, undemanding toddler, and patient child for the past seven years to support his mother's difficult journey through graduate school. Thank you, son.

BIOGRAPHY

Bindiya Ibrahim Shajith was born on November 12, 1979 in Abu Dhabi, United Arab Emirates. She earned a bachelors degree in Psychology from Mahatma Gandhi University in Kerala, India. Bindiya moved to the United States in 2001 with her husband and continued her education at North Carolina State Univeristy. She received a Masters Degree in Special Education from NC State in 2004 and is a licensed Special Education teacher in the state of NorthCarolina. After completing her Doctor in Philosophy degree in 2012, Bindiya plans to return to India and continue her work with chidren and adolescents in South India. Bindiya is also the mother of a seven year old boy.

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Introduction

Parental involvement in children's education has been found to be beneficial to the development of academic and social competence. However, parental involvement tends to decrease as children grow older and move from elementary to secondary school. Given the benefits of parental involvement in children's education, it is therefore important to devise ways to promote parental involvement at the secondary level, especially in middle schools. In particular, it is important to answer the following questions: (a) What motivates parental involvement in children's schooling?; and (b) What factors contribute to the decrease in parental involvement as children move from elementary to middle school?

Although little is known about why parents decide to become involved in their children's education, previous research has shown some school, teacher, and child-related factors to be influential in parents' decision to participate in their child's schooling. For example, parental participation is expected to be higher when schools are welcoming and have policies that encourage parental involvement. Parents are also more likely to be involved in school activities when teachers are optimistic about parental participation and use effective strategies to support and promote parental involvement. Parental involvement has been observed to be higher when children are younger but tends to decrease as children grow older perhaps to allow more independence and autonomy. Finally, parents are more likely to be involved in their children's education when they have the time and resources to help with the learning activities both at home and at school (Dauber & Epstein, 1993; Eccles & Harold 1996).

Importantly, parental involvement in schools tends to decrease as children move to middle school (Epstein & Dauber, 1991). Various factors, including systems level changes, contribute to this decrease in parental participation. For example, elementary schools are usually smaller in size, include children living in the immediate neighborhood, and have self-contained classrooms, factors that make it easier for parents to interact with teachers and other school personnel. Middle schools, on the other hand, are larger in size, include more students from different parts of the school district, and have departmentalized programs. This organizational structure of middle schools perhaps makes them intimidating and more difficult for parents to navigate. Moreover, communication between teachers and parents is also reduced in middle schools when compared to elementary schools. These factors may make parents feel unwelcome in their children's middle schools and thus lead to less parental participation in school activities (Eccles & Harold, 1996; Useem, 1990).

Given the significance of parental involvement in children's schooling and less-than-optimal parental participation in middle schools, it is important to think about ways to promote parental involvement in middle schools. Studies have found frequency and diversity of communication between school and home and accessibility of the communication system to be important predictors of parents' decisions to become involved in their children's school (Bittle, 1975; Powell, 1978). Moreover, engaging in positive communication and raising parental commitment to their involvement in children's education may encourage parental participation in children's education and related activities (Ajzen et al., 2009; Copeland, 1972).

Along those lines, research has shown parental perceptions of invitation for participation in school activities to be positively associated with parental involvement. More specifically, “parents’ perception of invitation for involvement from others” has been identified as one of the predictors of parental involvement in Hoover-Dempsey and Sandler’s (1995, 1997) model of parental involvement (later revised by Walker, Wilkins, Dallaire, Sandler, & Hoover-Dempsey, 2005). According to this model, parents are more likely to be involved in their children’s schooling when they perceive that their help is solicited. Hoover-Dempsey and Sandler delineated three different types of invitations: (a) general invitation for involvement from school, (b) specific invitation for involvement from teachers, and (c) specific invitation for involvement from child.

This dissertation research was aimed at studying the differential effect of these three types of invitations for parent involvement on middle school parents’ decisions to become involved in their children’s school activities. The study examined the extent to which the use of one type of invitation (i.e., general invitation from school, specific teacher invitation, or specific child invitation) was more effective in prompting parental involvement in school activities than the other types.

Chapter 1

Review of the Literature

This literature review presents the knowledge and research currently available about characteristics of the school, teacher, child, parent, and the level of schooling, and nature of home-school communication that influence parents' decisions to become involved in their children's education at home and at school. It also presents a description of the Hoover-Dempsey and Sandler (1995, 1997) model of parental involvement and the revised model by Walker et al. (2005), with emphasis on one category of particular relevance to this study: "Parents' perception of invitation for involvement from others."

Parental Involvement

Definition and types of parental involvement. Parental involvement may be defined as "parents' interactions with schools and with their children to promote academic success" (Hill et al., 2004, p.1491). Epstein (1991) delineated six major types of involvement that every school should incorporate in its comprehensive programs to encourage parent participation. Four of these types suggest specific ways parents can be involved in their children's education.

1. Creation of positive home conditions that support school learning and behavior across the school years;
2. Involvement at school, including volunteering in the classroom, attending sports and other events at school to support student performances;

3. Involvement in learning activities at home, which includes assistance at home with learning activities that are coordinated with the class work; and

4. Involvement in decision-making, governance, and advocacy, which involves a participatory role in the parent-teacher associations, advisory council, etc. (Epstein, 1991).

In this study, the focus was on number 2.

Benefits of parental involvement. Over the past two decades there has been extensive research in the field of parental involvement in children's education. The importance of parental involvement in schools has been recognized by policy makers and has been incorporated into federal legislation (e.g., No Child Left Behind Act of 2001). Parental involvement has been associated with enhanced academic performance (Comer, 1988; Epstein 1991; Reynolds, 1992), especially in children from low socio-economic backgrounds (Dearing et al., 2006), an increase in social skills (El Nokali et al., 2010), and a decrease in behavior problems (Domina, 2005; El Nokali et al., 2010). Moreover, parental involvement has been found to influence students' education through the senior year of high school (Castambis, 2001).

A meta-analysis by Jeynes (2007) examined the relationship between parental involvement and urban secondary student achievement. The results revealed an overall positive effect of parental involvement programs on student achievement for all student populations, including minority populations. The findings also suggested that voluntary parental involvement worked better than parental support programs. Parental involvement showed more significant effects on grades than it did on standardized test scores. However,

parental style and expectations had a greater impact on student educational outcomes than parental attendance and participation at school. The results of this meta-analysis overall suggest that parental involvement may reduce the achievement gap between dominant and minority ethnic groups.

General predictors of parental involvement. Despite the growing awareness that parental involvement is an important contributor to children's positive outcomes, not much is known about the factors that motivate parents to be involved in their child's academic activities. Some of the general factors that predict parental involvement in children's education are characteristics of the school, teacher, child, parent, and the child's level of schooling. The role that each of these factors plays in parental involvement is described next.

General School Climate and Parental Involvement

Epstein and her colleagues' work (e.g., Epstein & Dauber, 1991) shows the influence of school factors such as the level of school, subjects, types of involvement, and climate of support on parent involvement. Eccles and Harold (1996) further suggested two aspects of school characteristics that are especially influential in parental involvement decisions: The physical and organizational structure of the school and the beliefs and attitudes of school personnel.

Physical and organizational structure of the school. Change in the physical and organizational structure is a primary difference that parents encounter when their children move from an elementary to middle school (Eccles & Harold, 1996). Middle schools and junior high schools are bigger in size, include more students from diverse backgrounds and

different communities, involve more bureaucratic administration, and tend to be departmentalized with reduced personal contact between teachers and parents. These factors are associated with increased feelings of alienation in the adolescents themselves (Eccles & Midgley, 1989). Parents who are involved in their children's elementary school and feel a sense of community in the school also tend to feel alienated in the middle school, which has an expanded physical community with the merging of several elementary schools (Eccles & Harold). A lack of sense of belonging and investment consequently may lead to a decrease in parental involvement in the educational experience of their children.

Beliefs and attitudes of school personnel. The beliefs and attitudes of school personnel about parental involvement are important and can be facilitative or inhibitive in involving parents in specific activities at school (Eccles & Harold, 1996). A school's response to parental involvement and collaboration is influenced by multiple teacher and school characteristics. These characteristics are: (a) beliefs about what is the appropriate amount and type of parent involvement; (b) beliefs about influences on parents' levels of participation, particularly their beliefs about why parents are not involved; (c) sense of efficacy about their ability to affect parents' levels of participation; (d) knowledge of specific strategies to get parents more involved; (e) their plans for implementing these strategies; and (f) support for implementing specific plans (Eccles & Harold).

Opportunities for parental involvement in schools. Comer and Haynes (1991) created a program for parental involvement at three levels: Parent participation in the school planning and management (Level 1), parent participation in classrooms and in supporting

school programs (Level 2), and general participation (Level 3). This program was created based on the authors' observations that most parents want to be involved with activities that concern their children, while some others want to help with the classroom activities, and still others want to be involved in school programs and practices (Comer & Haynes).

Level 1. Comer and Haynes (1991) called this level the most sensitive and critical level of parent involvement in which a small group of parents is elected by their peers to represent them on a school planning and management team. They then work with teachers, professional and non-professional support staff representatives, and the principal; develop activities to support the comprehensive school plan; and influence other parents to become active participants. The involvement of parents in the planning and management of school activities helps to bring a community perspective to the school activities as well as a better understanding of children's needs and experiences. These actions facilitate the formulation of age appropriate and culturally appropriate academic and social programs for the students in the school.

Level 2. At this level, parents are involved in the day-to-day school and classroom activities (e.g., as paid or volunteer assistants in the classroom) and are a part of the parent organization of the school. They also jointly sponsor field trips, parties, and art and athletic programs with the staff. About 5-10% of parents are involved at this level. This kind of parent participation helps to connect the school to the community, and these parents are more successful in reaching out to non-participating parents and in influencing them to become involved in school activities. The positive attachment that these parents build with the school

is more likely to create a similar attachment of students to the staff and school-sponsored programs (Comer & Haynes, 1991).

Level 3. This level involves parent attendance and participation in general events and activities at the school, such as a holiday program. Parents derive a sense of pride and satisfaction in seeing a performance by their children and the children, in turn, are eager to experience the approval of parents and staff. Comer and Haynes (1991) encouraged such events in their parent program. They also paid attention to providing the parents with more "good" news about their children than "bad" news so that parents would associate positive experiences with the school. These strategies were aimed at encouraging them to participate more in their children's school activities.

The current study intended to examine the effectiveness of the strategies used by schools to involve parents to participate in a school event similar to the activities at level 3 of parent involvement as described by Comer and Haynes (1991). Unlike Comer and Haynes, who studied parental involvement in elementary schools, these strategies were studied in a middle school context.

Although overall school climate can be instrumental in predicting parental involvement in school activities, characteristics of the teachers in the school such as teachers' attitudes toward parental involvement and teachers' competence in involving parents can also influence parental decision to participate in school activities. Teacher characteristics that are associated with parental involvement are discussed next.

Teacher Characteristics and Parental Involvement

Current teacher practices to promote parental involvement. In a survey of elementary school teachers in Maryland by Becker and Epstein (1982), teachers identified 14 parent-oriented teaching practices. These practices were grouped into five types: (a) techniques that involve books and reading; (b) methods that encourage discussions between parent and child; (c) strategies that specify some informal activities at home to stimulate learning; (d) contracts between teachers and parents that specify a particular role for parents in connection with their children's school lessons or activities; and (e) procedures that develop parents' tutoring, helping, teaching, or evaluation skills. Teachers reported techniques that involved reading and books to be the most used and most satisfying parent involvement strategies. However, procedures that involve providing parents with the observational and instructional skills were not widely used. Overall, the results showed that teachers prefer parent-oriented strategies that require the investment of minimum time and effort (Becker & Epstein).

Although the above mentioned teaching practices were identified by the elementary teachers in the study, only nine percent of these teachers emphasized parental involvement as a requirement in their classrooms while the others only suggested the techniques be used by parents in their classrooms (Becker & Epstein, 1982). This finding shows that, despite the awareness of parental involvement strategies, very few teachers use them to encourage parental participation. Because of their importance in promoting parental involvement, the

issues of teacher competence in parent involvement techniques and teacher attitudes toward parental involvement are discussed next.

Teachers' competence/skills in involving parents. Although many teachers in Epstein and Becker's (1982) sample believed parental involvement at home to be an important contributor toward achieving the goals they have determined for themselves and for their students, most did not know how to initiate parental involvement and use the strategies effectively to accomplish their goals. Moreover, a qualitative study by Shumow and Harris (2001) found that teachers teaching in low income urban schools were unaware of the knowledge that parents and community could contribute to the students' education. Teachers who remain uninformed about the strengths and needs of a student's ecological system (Bronfenbrenner, 1979) may find it difficult to use creative strategies to involve parents in their children's education.

One reason for teachers' ineffective use of parent involvement strategies may be the insufficient emphasis placed on parent involvement skills in teacher training programs. For instance, Chavkin and Williams (1988) queried 575 teacher educators in six states in the southwestern U.S. and found that only 4% taught a complete course on parental involvement, 15% reported covering the topic as a part of a course, and 37% reported that they had one class period on the topic. Most teachers (86.6%) and principals (92.2%) agreed that there is a need for training in working with parents. The majority of the school administrators, teacher educators, and parents held this opinion (Chavkin & Williams). Because most teachers do not

receive the necessary training to work effectively with parents, having in-service teacher programs focus on this subject may be a viable solution.

However, teachers' competence in parent involvement strategies alone is not sufficient to ensure parental participation. Teachers' attitudes, perceptions, and beliefs about parental competence to help their child with school work additionally influence a teacher's decision to implement parent involvement strategies. Teacher attitudes toward parental involvement are discussed next.

Teacher attitudes toward parental involvement. Teachers' attitudes regarding parental involvement and the use of practices to involve parents are positively associated with parents' decisions to be involved in their child's education (Dauber & Epstein, 1993; Epstein & Dauber, 1991). Teachers with more positive attitudes toward parental involvement place more importance on practices such as holding parent–teacher conferences, communicating with parents about school programs, and providing parents both good and bad reports about students' progress (Epstein & Dauber). More positive attitudes also have been positively correlated with success in involving working parents, less educated parents, single parents, parents of older students, young parents, parents new to school, and other "hard to reach" parents (Epstein & Dauber). In addition, Epstein (1986) found parents of children who were in classrooms with teachers who emphasized parent involvement to be more positive about school than other parents.

Thus, teachers' attitudes toward parental involvement are likely to be reflected in teacher practices to promote parental involvement. Teachers' attitudes may both influence

and be influenced by how teachers perceive parental involvement. Therefore, teachers' perceptions of parental involvement are discussed next.

Teacher perceptions of parental involvement. Although teachers' definitions of parental involvement are consistent with definitions provided by researchers (e.g., Comer & Haynes, 1991; Epstein, 1991), most teachers view parental involvement at home and school as a means to make their own jobs easier (Lawson, 2003). To teachers, parental involvement serves the purpose of supporting the teachers' and school's needs as well as reinforcing what the teachers taught in class. Thus, teachers tend to believe that their efforts are wasted when parents do not show the expected involvement (Lawson).

However, most teachers perceive efforts for involving parents in school as requiring more hours of work but yielding insufficient results. For example, only 34% of teachers surveyed by Becker and Epstein (1982) believed that they would have a modest turnout at parent meetings or workshops and only if these events were held in the evening. Achieving this outcome apparently would require teachers to work extra hours or volunteer in the evening to interact with a small percentage of the parents (Becker & Epstein).

Teachers' perceptions of parental competence to help their children with schoolwork may also influence teachers' attitudes toward parental involvement. For instance, Power (1985) studied differences in parent and teacher perceptions of home-school interactions and differences in each party's perceptions of parent-teacher relationship. Power found a significant difference in parent and teacher estimates of parent competence and teacher competence. Teachers perceived themselves to be more competent than parents while

parents perceived teachers to be less competent than what teachers perceived themselves to be. Parents also perceived themselves to be more competent than what teachers perceived them to be. This incongruence in the perception of each other's competence can be detrimental to the parent-teacher relationship, which in turn can have a negative effect on one's attitudes toward the other's work. Furthermore, differences have been noted in the perception of parental involvement with parents rating their own involvement higher than the teachers' ratings of parental involvement (El Nokali et al., 2010).

Thus, teachers' perceptions of parental involvement are likely to influence teacher attitudes and subsequent teacher practices to promote parental involvement. In-service teacher training to help teachers to change their beliefs about parental involvement would seem to be essential in establishing productive parent-teacher relationships. The findings of a study that involved one such in-service teacher training program are discussed next.

Teacher training to promote parental involvement. In order to increase parental participation in their children's education, it is often important to change teachers' beliefs about and attitudes toward parental involvement. Because most teachers do not receive the necessary training to work effectively with parents (Chavkin & Williams, 1988, Shumow & Harris, 2001), in-service teacher programs focusing on this subject may be a viable solution. For example, a summer workshop for teachers that involved reading, reflection, discussion, and planning on strategies to increase parental involvement was found to be beneficial in increasing parental involvement in a low-income urban school (Shumow & Harris).

Similarly, Hoover-Dempsey and colleagues (2002) reported the results of an in-service teacher training program called Teachers Involving Parents (TIP). The objective of the program was to strengthen the teachers' belief system, which has been proven to increase parental participation through teacher invitations for parental involvement (Hoover-Dempsey, Brassler, & Brissie, 1987). This program was designed to facilitate collegial interactions among teachers and discussions about issues related to involving parents in school and in schoolwork at home. Hoover-Dempsey et al.'s study evaluated the effectiveness of this program in two elementary schools with 30 participant and 22 comparison teachers. Pre- and post-test data were collected from all teachers via questionnaire to evaluate the effect of the different modules in the program.

The results of Hoover-Dempsey et al.'s (2002) study showed a significant increase in efficacy in the participating teachers when compared to the comparison teachers ($F(1, 50) = 4.40, p = .04$). However, teacher beliefs about parent efficacy and invitations for parental involvement increased in both groups with no significant interaction effects. Both groups scored high on teacher beliefs about parent involvement and teacher beliefs about importance of specific involvement practices on the pretests, which showed the presence of positive beliefs about parental involvement prior to the intervention (Hoover-Dempsey et al.) Thus, the results showed that even though teachers initially had positive beliefs about parent efficacy, the TIP program provided these teachers with the skills to develop specific plans for enhanced invitations to parental involvement.

Less positively, the scope of the study by Hoover-Dempsey et al. (2002) was narrow, with 52 teachers from two elementary schools who volunteered to participate, which limits the generalizability of results. Nevertheless, the TIP program represents a viable initial step toward helping teachers to use effective strategies to bring parents to school and to encourage their participation in children's schoolwork at home. It was the intent of the current study to contribute to the repertoire of effective strategies that teachers can use to promote parental involvement, and was particularly concerned with teacher practices to encourage parental involvement in the middle school context.

Even though school and teacher practices are significant in influencing parents' decisions to participate in school activities, children play a key role in persuading their parents to get involved. Researchers have discerned some child characteristics that increase the likelihood of parental involvement in schooling. Child characteristics, such as age, gender, level of achievement, that promote parental involvement are discussed next.

Child Characteristics and Parent Involvement

Several studies have shown that parents vary their involvement in their children's education depending on various child characteristics. For example, parents tend to be more involved if the children are better students (Dauber & Epstein, 1993; Epstein, 1986). Age and gender are other important predictors (e.g., Baker & Stevenson, 1986; Dornbusch & Ritter, 1988; Eccles-Parsons et al., 1982; Stevenson & Baker, 1987). The influence of these child characteristics on parental involvement are described below.

Age of child. Parental involvement tends to decrease as children graduate from elementary school and move on to middle school (Epstein, 2001). For example, Stevenson and Baker (1987) analyzed an extant data set that addressed questions about how families use their time in order to study the predictors and effects of parental involvement in school. They noticed the age of a child to be a significant predictor of parental involvement in school, indicating that parents of younger children are more likely to be involved in school activities than those of older children ($r = -.34, p < .01$). This phenomenon may be due to parents' perception of the importance of early schooling and their role in a child's schooling at younger ages.

Some of this change may also be attributed to the parents' belief that they should begin to disengage from the adolescent's education to respect their need for independence (Carnegie Corporation, 1989). Deslandes (2003) similarly documented a steady decline in parental involvement in grades 8, 9, and 10 along with a steady rise in adolescent autonomy. However, the results of a focus group by Hill and colleagues (2009) contradict the popular notion that adolescents do not want parents to be involved in their education. Adolescents from three different cultures reported that they want their parents to help with managing course schedules, assist with selecting classes, discuss larger projects and assignments and remind them of important due dates, attend parent-teacher conferences and school events, and share stories from their own lives that would help the teens to stay focused. On the other hand, they did not want their parents to micromanage or double check their homework,

chaperone field trips, check their book bags, or lecture them about their future (Hill, Tyson, & Bromell, 2009).

Gender of child. Several studies have shown the effect of gender of the child on parental involvement in school activities. In a study that used a subset of the Time Use Longitudinal Panel Study dataset, Stevenson and Baker (1987) observed an interaction effect of age and gender on parental involvement. Specifically, parents of boys were found to be more likely to be involved in their school activities when the sons were younger ($r = -.61, p < .01$); however, involvement in school activities by parents of girls did not differ by the daughter's age ($r = -.06, p > .05$). This finding points to the importance of gender as a predictor of parental involvement in schools.

Moreover, parents' gender stereotypes have also been shown to affect the extent to which they are involved in or interfere with their child's education. For example, Bhanot and Jovanovic (2005) studied the effect of parents' academic gender stereotypes and the resulting parental tendency for uninvited intrusions in the children's homework on the children's confidence in those academic domains. They used child and parent reports from 34 families and learned that overall boys received more intrusion than girls irrespective of subject domains. Parents who believed in the stereotype that "girls are better in English" were less likely to intrude into their daughters' homework. However, despite the parents' perception of their daughters' abilities in math, parents' uninvited intrusion in the daughters' math homework was influenced by their stereotype that "math is a male domain."

Other child characteristics. Other child characteristics that are associated with parental participation include level of achievement and level of autonomy. For example, high-achieving students were found to be more likely to request parental assistance than low-achieving students (Zimmerman & Martinez-Pons, 1986). Similarly, adolescents with a high level of autonomy (i.e., highly work-oriented and self-confident) were more likely to invite parental involvement than those without these traits (Deslandes & Cloutier, 2002). Parents become involved if they perceive that their children need help (e.g., if the children have lower ability levels; Epstein, 1988). Moreover, parents of younger children are more likely to help without being asked (Walker & Hoover-Dempsey, 2001). These findings suggest that parents are less likely to help their adolescents with school work unless they make an explicit invitation for parental involvement. Given these results, it may be important to convince adolescents that parents can help and then to devise strategies to encourage adolescents, especially the ones having difficulties with school, to approach their parents for help.

To a large extent, school, teacher, and child efforts to encourage parental involvement influence parental decisions to become involved in their children's education. In addition, there are some parent characteristics that are important predictors of parental involvement such as family socio-economic status, parental educational level, and family size. Some of these parent-related factors are discussed next.

Parent Characteristics and Parental Involvement

Social class. The socio-economic status of a family has been shown to be an important predictor of parental involvement. For instance, Revicki (1981) found that parents

with higher incomes are more likely to be actively involved in their child's education. In an ethnographic study, Lareau (1996) unveiled one way in which the effect of socio-economic status on parental involvement unfolds.

In her study that included observations of 72 children in their third grade classrooms and interviews with their parents, Lareau (1996) noticed some interesting effects of social class on parental involvement. She observed that, although middle class parents share responsibility for schooling with the school and involve themselves in a collaborative educational process with teachers, working class parents tend to turn over the responsibility to schools. Thus, the concept of parental involvement has different meanings to middle class and working class parents. Middle class parents often initiate calls to educators, raise questions about their rights, and criticize teachers, whereas working class parents apparently do not presume similar rights. It may be that the latter group trusts the professional expertise of the educators and then watches the activities of the educators without intervening or criticizing (Lareau).

Lareau's (1996) findings show that the difference in the level of parental involvement of parents from different social classes is primarily due to a disparity in their expectations of and beliefs about schools and educators. These findings suggest that educating low socio-economic families about their rights with regard to their children's education may be an important step toward promoting parental involvement.

Level of education. Parental educational level is positively associated with parental involvement in children's education. Baker and Stevenson (1986), for instance, explored the

ways in which mothers managed their child's transition from middle school to high school to enhance his/her school achievement. The authors interviewed a sample of 41 randomly selected mothers of eighth graders in one middle school and discovered a moderate correlation between mother's education and child's GPA. However, mothers with more education were also more likely to have contacts with school and teachers and to attend parent-teacher meetings and school events. Therefore, mothers with more education may know more about their child's school performance and the school's resources, which can facilitate early awareness of a child's problems in school and perhaps the use of school resources to resolve these problems. Despite their level of contact with the school and the teachers, mothers with more education were not any more likely than mothers with less education to use homework or general academic strategies with their child. Baker and Stevenson also observed an interaction between child and parent characteristics, indicating that mothers with at least a college degree manage their child's homework but only when the child requires assistance.

Other family issues. Various other family issues, including family size, availability of resources, and cultural differences have been found to affect parental involvement in children's education. For example, Revicki (1981) documented that parents with smaller families are more involved in their child's education than parents with larger families. In larger families, both parents typically have to work to provide for the family, which affords them less time to be involved in their children's education. In addition, parents' jobs and short term leave policies affect parental involvement (Espinoza, 1988). Parents whose jobs

do not offer a provision for taking a leave of less than a full day are forced to take whole days of unpaid leave to come to their children's school. It also has been found that when faced with inflexible leave policies, fathers are significantly less likely to show an inclination to be involved in their children's education than mothers (Espinoza). Moreover, availability of transportation and child care services also have a significant effect on parents' attendance at school events (Pena, 2000). Cultural differences in minority group parents' expectations of the school, language barriers, and a lack of opportunity to express concerns may discourage them from active involvement in schools (Pena).

The findings of different studies discussed in this section show the need for better communication between schools and parents about expectations for parental involvement. Parent training and/or specific instructions for parental involvement would seem to be essential in order to ensure parent participation at the levels expected by schools and teachers.

Parental involvement in children's education both at home and school changes in nature as a child moves from preschool and kindergarten to junior and senior high (Seginer, 2006). This change in parental involvement is determined by various factors, including changes in the school and teacher practices at the different levels. The next section discusses the systems-level changes from elementary to middle school that prompt the change in the nature of parental involvement.

Levels of Schooling and Parent Involvement

Parental involvement in children's education is influenced by the level of schooling. For example, in preschool, kindergarten, and elementary school, parental involvement at home focuses on skill building (e.g., basic reading skills) and help with homework (Seginer, 2006). In junior and senior high, parents' home-based involvement includes motivational support, such as monitoring child progress and communicating with the child on school matters. Parental involvement in school changes from participation in classrooms (e.g., volunteering) in preschool, kindergarten, and elementary school to attending school initiated programs and parent teacher organization meetings in middle, junior, and high schools (Seginer).

This change in the nature of parental involvement from direct involvement in educational tasks to engagement in pre-educational activities is determined by various factors, including the child's age, change in academic content, and school and teacher practices. For example, Epstein and Dauber (1991) noticed parent involvement programs to be stronger in elementary than in middle schools. Programs of volunteers at school ($B = -.360, p < .001$) and programs to involve parents in children's learning activities at home ($B = -.310, p < .001$) are some examples of parent involvement programs that have been found to be stronger in elementary schools. Middle grade parents receive less guidance and information about how to be involved in their children's education (Useem, 1990). This section discusses the differences in the parental involvement practices in elementary and middle schools.

Changes in school practices across levels. Elementary school practices for involving parents have been found to be more positive and more comprehensive than the programs and practices in the middle schools (Epstein & Dauber, 1991). Elementary schools in Epstein and Dauber's study used more specific communication practices and had stronger and well-defined programs in place to encourage parental involvement in the school and at home. Some examples of elementary school efforts to involve parents are workshops for parents on parenting skills, child development, and school programs; volunteers at school; learning activities at home; and involvement in school decisions.

In contrast, at the middle school level, parents receive less guidance from teachers about how to be involved in larger and more complex schools (Useem, 1990). In middle schools, school personnel may think it is better for adolescents to have less parental involvement and that it is too much trouble to involve the parents as they are busy, disinterested, and unknowledgeable (Eccles & Harold, 1996). Hence, school personnel at this level may discourage parent involvement in the classroom and school (Carnegie Corporation, 1989; Epstein & Dauber, 1991; Hoover-Dempsey, Bassler, & Brissie, 1987).

Changes in teacher practices across levels. Teacher practices to promote parental involvement in middle schools also appear to be inadequate. Although middle schools report school programs and policies that are similar to elementary schools, middle school teachers use fewer specific communications with families (Epstein & Dauber, 1991). In addition, parent reports show that elementary school teachers do more to ensure parental involvement

in children's education, including involvement at school and at home (Dauber & Epstein, 1993).

Eccles and her colleagues (Eccles & Blumenfeld, 1984; Eccles, Blumenfeld, Harold, & Wigfield, 1990) showed an interesting school effect in a longitudinal study. Results of questionnaire data collected from children, parents, and teachers revealed that fifth grade teachers in middle schools provided less feedback to parents on their children's performance as compared to fifth grade teachers in elementary schools. The extent to which they encouraged parents to get involved in the classroom activities was also significantly lower than the elementary school fifth grade teachers.

Developmentally appropriate strategies for parental involvement. As students grow older, their developmental stage, school context, and grade level expectations may not be conducive for the use of certain parental involvement strategies (for examples, see Dauber & Epstein, 1989; Hill & Chao, 2009; Seginer, 2006; Stevenson & Baker, 1987). Therefore, it is important to identify developmentally appropriate parental involvement strategies that may be effective at the middle school level. Hill and Tyson (2009) examined the relative effectiveness of three types of parental involvement in middle school: Home-based involvement, school-based involvement, and academic socialization. Home-based involvement includes home based activities, such as offering homework help, and providing educationally enriching opportunities, such as visits to museum and libraries (Hill & Chao, 2009; Hill & Tyson). School-based involvement is comprised of parent involvement activities, such as visiting and volunteering at school, and attending school events. Academic

socialization refers to parents' communication of their expectations for achievement; fostering educational and career aspirations; discussing learning strategies, future goals, and preparations for achieving these goals; and helping students link the school materials to their goals (Hill & Tyson).

Research on the effectiveness of home-based parental involvement in middle schools has shown inconsistent results (e.g., Cooper, 1989, 2007; Reynolds & Gill, 1994) and has been substantiated in a meta-analysis by Hill and Tyson (2009). Homework help was found to be negatively associated with student achievement in middle school; however, educationally enriching activities at home were found to be helpful in improving student performance in middle school. School-based involvement was found to have a moderately positive association with student achievement in middle schools. Academic socialization was found to be the most salient type of parental involvement that relates to student achievement at the middle school level (Hill & Tyson).

From Hill and Tyson's (2009) meta-analysis, it appears that initiating conversations with adolescents about their schoolwork, future plans, and aspirations may be the most effective approach to parental involvement at the middle school level. This type of involvement yields sufficient opportunities for parents to support their adolescents' education and future goals while giving the students a sense of autonomy that is desired at this stage of development.

In conclusion, there is growing evidence that parental involvement improves student achievement (Comer, 1988; Epstein 1991; Reynolds, 1992). The importance of parental

involvement creates a need for more effective and developmentally appropriate strategies for involving parents in their children's education. It is obvious from existing research that this need is especially pronounced at the secondary level of schooling (Eccles & Harold, 1996; Epstein & Dauber, 1991). In order to facilitate parental participation at the secondary level, it is important to have an effective system of home-school communication in place. Therefore, strategies to improve communication between parents and teachers are explored next.

Home-School Communication and Parental Involvement

Existing research on school-to-home communication has not yielded definitive results. Some studies have shown positive effects of parent-teacher contacts for young children (Bittle, 1975; Iverson, Brownlee, & Walberg, 1981) but negative gains for older students (Iverson, Brownlee, & Walberg). Most teachers attempt to increase parental involvement through the use of school-to-home communication (Epstein, 1986).

Communication typically is sent home regarding schedules, report card grades, special events, and emergencies. Despite this surplus information sent home, most parents receive few communications. For example, in Epstein's (1986) survey, about 16% of the parents said that they received no memos from the teacher over one year, 35% reported that they had no parent-teacher conferences, and about 60% never spoke to their child's teacher over the phone during the year (Epstein). This section explores the existing research in home-school communication and some gaps in the literature.

Current teacher practices of home-school communication. Schools and teachers reach out to parents using different forms of communication, including parent-teacher

conferences, written communication, telephone contacts, and parent groups (Patton, Jayanthi, & Polloway, 2001). Despite these efforts to communicate, both educators and parents are dissatisfied with the degree of communication and each party perceives the other as being responsible for the gap in communication (Jayanthi et al., 1995).

In a study by Dornbusch and Ritter (1988) in high schools, teachers reported that they initiated more contacts with parents than parents did with them. However, 63% of these teachers reported that they initiated contact with “almost none” or “a few” parents and only 15% reported initiating contacts with “most” or “almost all” parents. Teachers had the most contact with parents of students with discipline problems and academic difficulties. On the other hand, few teachers wanted to have contacts with parents of high achieving students, average students, and with parents who were active in school or were interested in helping their children (Dornbusch & Ritter).

Teacher and parent perceptions of home-school communication. A qualitative study that used focus groups found that parents and teachers shared similar concerns in the area of communication, especially communication surrounding homework (Jayanthi et al., 1995). They identified some major areas of concerns, including lack of initiation of communication; delayed, inconsistent, and infrequent communication; lack of responsiveness to communication; and problems with clarity and usefulness of communication. In addition to these shared concerns, parents reported as a problem not being able to contact teachers when they (i.e., parents) were available (Munk et al., 2001). Many parents wished to receive more communication about their child’s attendance, good news about the child, and the

content that the child was learning in school (Leitch & Tangri, 1988). Some problems were perceived to be significant by parents of children with disabilities, such as loss or interception (by children) of communication sent home by teacher, and not knowing whether to contact general or special education teachers about their child's homework (Munk).

Effective school/teacher to parent communication. Existing literature in this area shows an inconsistent approach to studying school-to-home communication. Although some researchers have explored parent- and teacher-related factors that predicted the frequency of parent-teacher contacts, others have focused on the effectiveness of the content of the communication and accessibility of the communication system.

For instance, in a preschool study, Powell (1978) identified some factors, such as teacher's role in the school, teachers' friendship with parents, parents' socio economic status, parents' length of association with the school, and parents' and teachers' attitudes toward discussing family information and child rearing values, to be positively correlated with the frequency and diversity of parent-teacher contacts. Interestingly, some teacher factors, such as number of years of formal work with children and number of years since completion of education, were found to be negatively correlated with the frequency and diversity of parent-teacher contacts (Powell).

On the other hand, the content of home-school communication also has been found to be influential in creating an effective home-school relationship. For example, in a study that analyzed written and oral communications sent from principals of three different schools to parents, Keogh (1997) observed that all three principals studied used pronouns reflective of

authority, which positioned the readers (i.e., the parents) as agents who were expected to continue to do the work of the school outside its boundaries. These messages seemed to force the parents to consider themselves as being within or outside the institution's "accepted practices" (Keogh). Thus, these messages may be perceived differently by different parents. For example, parents who agreed with the message and implemented it may have considered themselves as accepted by the school whereas parents who disagreed with the message may have felt estranged. Alternatively, positive communication from a school authority has been found to facilitate parents' responsiveness to school (Copeland et al., 1972). Copeland et al. demonstrated an increase in student attendance at a non-compulsory summer school when the principal called and praised the parents for sending their children to school as compared to when the principal called and requested the parents to ensure student attendance.

In addition, school/teacher-to-parent communication has been found to be more effective when the communication system is conveniently accessible by parents (Bittle, 1975). Bittle showed a dramatic increase in the number of parent-initiated contacts when an answering service was made available to the parents by the teacher.

Parent compliance with school/teacher communication. Despite receipt of communication from school or teacher, most parents do not follow through with the information contained in the communication (Leitch & Tangri, 1988). Therefore, it is important to explore strategies for ensuring parental compliance or change in behavior in response to communications from school.

Individuals' pursuit toward attaining goals, including behavior change, has been studied for several years. A variety of goal theories (e.g., theory of planned behavior, theory of self regulation, goal setting theory, the strength model of self control, implementation intentions) have been proposed to understand failures in goal attainment (Webb & Sheeran, 2005). These theories posit different, though sometimes overlapping, constructs to explain the phenomenon of goal attainment. Webb and Sheeran evaluated the efficacy of all constructs used in these goal theories to integrate the concepts and come up with a comprehensive and parsimonious model of goal attainment. Factor analyses and discriminant analyses of these constructs found motivation, task focus, and implementation intentions to be important predictors of goal attainment in both retrospective and prospective studies. Of these constructs, implementation intention was found to be the most important predictor of goal achievement in the prospective study (Webb & Sheeran).

An *implementation intention* is a specific plan indicating when, where, and how an individual will carry out the intended action (i.e., an if-then plan; "If situation Y occurs then I will perform behavior X"; Gollwitzer & Sheeran, 2006). It is different from goal intention, which is a self instruction to attain an outcome ("I intend to perform behavior Z"). Based on a review of existing literature, Gollwitzer and Sheeran argued that goal intention is insufficient in ensuring goal achievement and delineated different problems an individual may encounter en route to goal attainment, including failure to get started and getting derailed. These researchers conducted a meta-analysis of implementation intentions, which included 94 independent tests from 63 reports, studying the effect of implementation

intention on a variety of behaviors and goals (e.g., organic food purchase, helping behavior, personal goals, eating low fat diet, visiting websites). The results of this meta-analysis showed a significant effect of implementation intention on goal achievement or behavior change ($d = .65$).

Ajzen, Czasch, and Flood (2009) further explored the operation of implementation intention by studying the role of sense of commitment in increasing the effectiveness of implementation intentions. They found that an explicit commitment to behavioral performance was sufficient to produce high level of compliance in the absence of an implementation intention. A related concept, commitment to change, has been widely used in continuing education to promote behavioral changes in health professionals (Wakefield, 2004). For example, physicians who made a statement about commitment to change in prescribing behavior after a continuing education session were more likely to change their prescribing than those who did not state their commitment.

The findings on implementation intention and commitment to change may be relevant to parents' behavior of involvement in children's education. Shajith (2010) examined the effect of invitations on parental attendance at an event in a middle school. Homerooms in the middle school were randomly assigned to three conditions: General invitation only, general invitation with specific teacher invitation, and general invitation with specific child invitation. Parents of students in each homeroom received the respective invitation(s). Parents who received specific invitations from teacher or child were asked to return the invitation with a response (will or will not attend the event) and a signature. Results showed

that parents who gave an affirmative response to the invitation were 13.85 times more likely to attend the event than those who either declined or did not respond to the invitation. Given these findings, an explicit commitment by the parents in the form of an affirmative response and signature on the invitation, may encourage them to attend the event. Therefore this dissertation research used the concept of explicit commitment in home-school communication in an attempt to increase parent compliance.

In conclusion, parents and teachers are generally dissatisfied with home-school communication. However, frequency and diversity of communication between school and home and accessibility of the communication system can play an important role in parents' decisions to become involved in their children's schooling. Moreover, engaging in positive communication and raising parental commitment to their involvement in children's education may be instrumental in increasing parental participation in children's education and related activities. In their model describing the predictors of parental involvement, Hoover-Dempsey and Sandler (1995, 1997) have highlighted the perception of invitation for involvement as an important predictor of parental participation in their children's education. The different variables in this model, with specific emphasis on the invitation variable, are discussed next.

Hoover-Dempsey and Sandler Model of Parental Involvement

The original model. Hoover-Dempsey and Sandler (1995, 1997) developed a theoretical framework from which specific predictors of parental involvement can be studied. Based on the review of educational, developmental, and social psychological research, this

model presents the "best guesses" of the sources of motivation for parental involvement (Walker et al., 2005). This model involves five sequential levels, which are described next.

The first level includes parents' basic involvement decisions. The variables at this level suggest that parents are more likely to be involved in their children's education if they perceive involvement in education as within their role as parent (i.e., role construction); if they believe that he/she has the skills necessary for helping the child with his/her schoolwork (i.e., self efficacy); and if they perceive opportunities, demands, or invitations from their children or children's schools to get involved (i.e., perception of general invitation for involvement from school and from child) (Hoover-Dempsey & Sandler, 1995, 1997).

The second level of the model includes parents' choice of involvement forms, which are influenced by their skills and knowledge, other demands on their time and energy, and specific invitations from child and school. This level suggests that the form of involvement parents choose will be consistent with their lifestyle. For example, a parent is likely to participate in a school-related activity if the requirements of the activity match the parent's skills and knowledge; if it is after work hours; and if other responsibilities such as child care for other children, etc., are supported. Parents are also influenced by direct invitations or requests from the child (e.g., for help with a homework) or from the teacher (e.g., specific directions for parental involvement in homework) (Hoover-Dempsey & Sandler, 1995, 1997).

The third level represents the mechanisms of parental involvement and their influence on children's school outcomes, which include modeling (e.g., modeling positive attitudes

toward school), reinforcement (e.g., praise for good grades or appropriate behavior at school), and instruction (e.g., teaching correct spelling, encouraging divergent thinking in children). The fourth level involves tempering or mediating variables, such as parents' use of developmentally appropriate strategies and fit between parents' involvement actions and school expectations. The final level represents student outcomes, including skills, knowledge, and the child's self-efficacy for school success (Hoover-Dempsey & Sandler, 1995, 1997).

The revised model. On the basis of their findings from empirical tests of the Hoover-Dempsey and Sandler (1995, 1997) model, Walker, Wilkins, Dallaire, Sandler, and Hoover-Dempsey (2005) presented a revised representation of the psychological factors underlying parental involvement. In the revised model, Walker and colleagues collapsed the first two levels of the original model into a single level. Figure 1 ¹depicts levels 1 and 2 of the revised model.

¹ The figure has not been included in this document due to copyright.

In the revised model, parental role construction and parents' self-efficacy are represented under one overarching idea of parents' motivational beliefs. Similarly, Walker et al. (2005) created a broad category of parents' perceptions of invitations for involvement from others. This category involves three factors: (a) perceptions of a general invitation for involvement from school, (b) perceptions of a specific invitation for involvement from the child, and (c) perceptions of a specific invitation for involvement from the child's teacher. A third broad category introduced in this model is the parents' perceived life context, which includes parents' skills and knowledge and other demands placed on their time and energy. Hence, the first level of Walker et al.'s revised model is comprised of three broad categories, namely parents' motivational beliefs, perceptions of invitations for involvement from others, and perceived life context. The current study was particularly interested in the category of parents' perceptions of invitations for involvement from others, which is discussed in detail next.

Parents' perceptions of invitations for involvement from others. The idea that parents are more likely to be involved in their children's education when they perceive opportunities or requests by external agents was emphasized by Hoover-Dempsey and Sandler (1995,1997) in their original model. However, in the original model, this idea was reflected partly in level 1 and partly in level 2.

General demands for involvement by child and child's school were indicated as factors that influence parents' basic involvement decisions, whereas specific invitations from child, school or teacher were suggested as a factor that influenced parents' choice of the form

of involvement. When levels 1 and 2 were collapsed in the revised model, perception of invitations for parental involvement from others was introduced as a separate construct and included general invitation from school, specific invitation from teacher, and specific invitation from child.

General school invitation. Positive school invitations and a welcoming and trustworthy school climate have been found to be supportive of parental involvement (Christenson, 2004; Comer & Haynes, 1991; Griffith, 1998; Lopez, Sanchez, & Hamilton, 2000; Simon, 2004; Soodak & Erwin, 2000). For example, in her study that analyzed the National Education Longitudinal Survey data, Simon (2004) noted some important effects of schools' outreach on parental involvement in high schools. Schools' efforts to reach out to parents was observed to have positive effects on parent attendance at a college planning workshop, parental participation in discussions with their teenager about post-secondary employment and academic-related issues, and parental participation in a school event as a volunteer or audience member. School outreach also promoted parental involvement in their teenagers' homework and increased parental awareness of their child's progress in school. School contacts about attendance and behavior of the teenager in school, on the other hand, had either a negative effect or had no effect at all on parental participation in school; nevertheless, they positively predicted parental reports of talking about post-secondary employment with their teenagers.

The positive effect of a school invitation on parental involvement can also be seen in a survey by Dauber and Epstein (1993). In this survey, parents rated the frequency of their

involvement in 18 different practices under five major types of parental involvement: (a) parenting and supervising at home, (b) communicating with the school, (c) volunteering at the school, (d) conducting learning activities at home, and (e) participating in PTA or parent leadership activities. Parents also rated their children's schools on the extent to which they conducted nine parent involvement practices under the five types of parental involvement listed above. School practices ranging from communication about how the child is doing in school to providing parents ideas on how to help at home were rated by parents in this study. Results of this study showed that parents are more involved in their children's education both at home and at school when they perceive that the school is doing many things to involve them. Similarly, parents reported that they do little at home when they believe that the schools are doing little to involve them. The results of this study thus demonstrate the importance of a school invitation in parental involvement in children's education.

Specific teacher invitation. A specific invitation from teachers may include a personalized invitation for an event or specific instructions for parents to help their child with homework. Specific invitations from teachers have been found to be a strong predictor of parental involvement in the elementary through high school levels of education (Epstein, 1986; Kohl, Lengua, & Mc Mahon, 2002; Simon, 2004). For example, Epstein (1986) found that parents believed they should help when a teacher frequently asked them for help. Routine communications, on the other hand, did not have a significant effect on parents' feelings of an obligation to help.

There are several studies that illustrate how specific invitations or instructions from teachers for involvement have been positively associated with parental involvement. For instance, Coutts, Sheridan, Kwon, & Semke, (2010) examined the moderating role of teacher invitations in the relationship between Conjoint Behavioral Consultation (CBC; Sheridan & Kratochwill, 2008) and children's behavior change. It was found that when teachers increased their invitations to parents within the CBC interventions, children's aggression decreased significantly ($t = -1.98, p < .05$). A marginal effect was noticed for decreasing conduct problems ($t = -1.71, p < .10$); however, no significant changes were observed for reducing hyperactivity.

Similarly, in an exploratory study, Balli, Demo, and Wedman (1998) examined parental involvement in children's math homework when provided with differential levels of teacher prompts. This study used prompts as a form of home-school communication. Seventy four sixth graders in three math classes taught by the same teacher were randomly assigned to three groups: (a) in group 1, no prompts were given to involve family members; (b) in group 2, students were prompted to involve family members; and (c) in group 3, students were prompted to involve family members and family members were prompted to be involved. Student prompts gave students directions on how to involve families in the assignment while student and family prompts directed students to involve families and encouraged families to offer written feedback and requested a signature on the assignment sheet.

Results of Balli et al.'s (1998) study showed that parents who received either student prompts (group 2) or both student and family prompts (group 3) on helping with math homework reported more involvement than the parents who did not receive any prompts. Family reports on the survey showed no significant difference in parental involvement between group 2 and group 3. Families of all three groups reported that they would be more likely to be involved with their children's homework if their child or child's teacher prompted their involvement than if there were no prompts at all. The findings of this study thus show the influence of specific teacher invitations on parental involvement in a child's education.

Specific child invitation. A child invitation refers to a distinct request from the child for parental involvement, such as request for help with homework. It has been demonstrated that specific child invitations can be very influential in predicting parental involvement. For instance, Balli and colleagues (1998) observed that although teacher prompts were influential in promoting parental involvement in their children's homework, student reports showed a slightly higher likelihood of parents helping with homework if the prompts came from the child than from the teacher alone.

A study by Deslandes and Bertrand (2005) in Quebec also demonstrated the effect of child invitations on parental involvement. In this study, they explored how some of the psychological constructs defined by Hoover-Dempsey and Sandler (1995, 1997) in their model of parental involvement influence parental involvement at the secondary level. Deslandes and Bertand conducted a survey to study the influence of parents' role

construction, self efficacy, perceptions of teacher invitations, and perceptions of adolescent invitations both at home and at school on parental involvement. The study focused on parental involvement in seventh, eighth, and ninth grade students' education. Results from a survey of 770 parents showed varying effects of the four psychological constructs from one grade to the other, and findings pertaining to the effects of child invitations on parental involvement are discussed next.

Deslandes and Bertand (2005) differentiated between two types of child invitations: A specific academic invitation (e.g., help with ideas for a story or project, help to study or practice for a test) and a specific invitation in the social domain (e.g., discussing a TV show or current events with parent or interviewing a parent for opinion). For seventh graders, parental perceptions of a specific academic invitation from a child was the most important predictor of parental involvement at home (academic domain - $\beta = .31, p < .001$; social domain - $\beta = .25, p < .001$). Among eighth graders, parental perceptions of an adolescent's invitation in the social domain was the most important predictor of parent involvement at home ($\beta = .35, p < .001$) followed by parental perceptions of child invitation in the academic domain ($\beta = .26, p < .01$). For ninth graders, parental perceptions of a specific invitation in the academic domain was the most significant predictor of parental involvement at home ($\beta = .44, p < .001$).

The study by Deslandes and Bertrand (2005) has some clear limitations, however. They used retrospective data, which makes it difficult to validate the parents' responses on the survey. The study also did not focus on the adolescents' perception of parental

involvement, which is another drawback. However, the results of this study showed the positive effect of specific student invitations on parental involvement in the education of secondary school students.

By way of summary, parental involvement is positively associated with academic achievement in middle schools (Hill & Tyson, 2009). Middle schools in general have been found to have lower parent participation as compared to elementary schools (Eccles & Harold, 1996). Schools with a general inviting atmosphere and an appreciation for parent participation in school activities tend to attract more parents than schools that do not encourage parent participation (Eccles & Harold). At the staff level, parents' perceptions of teacher invitations for involvement have been found to be a significant predictor of parent involvement at the secondary level (Balli et al., 1998; Deslandes & Bertrand, 2005). Moreover, explicit invitations from the child for parental involvement are also a significant predictor of parent participation in the child's education (Balli et al.). This dissertation research sought to use strategies that involve these research findings to promote parental involvement in the middle school level. Furthermore, using an experimental design, this study attempted to determine the relative strength of each type of invitation for parental involvement in encouraging parental attendance at a school event.

Chapter 2

Statement of the Problem

The following points summarize the knowledge and concerns in the area of parental involvement in children's education at the middle school level.

1. Parental involvement has significant positive effects on academic achievement for all student populations, including high school students. However, active parental involvement in school decreases dramatically as children move from elementary to secondary school.
2. General school climate, teacher practices to involve parents in school activities, and child requests for parental help are important predictors of parental involvement in a child's education. However, these factors tend to become less influential as a child transitions from elementary to middle school.
3. In order to increase parental involvement in middle schools, effective interventions targeting the improvement of school, teacher, and child efforts to involve parents must be introduced.
4. Frequent and positive home-school communication and raising parent commitment to involvement may promote parental participation in children's education.
5. Results of some studies show the intervention of a specific teacher invitation to be a better predictor of parental involvement than a general school invitation. Furthermore, a specific child invitation has been found to be a stronger predictor of parental involvement when compared to a specific teacher invitation.

6. The existing literature that explores differential effects of the various types of invitations is either retrospective or based on parent, teacher, or child reports. The current study intended to examine this question by using an experimental approach.

Research Question and Hypotheses

Research Question 1 Are there significant differences among the effects of a general invitation from school, a specific invitation from a teacher, and a specific invitation from a child on parental involvement in a school event?

Hypothesis One: Specific invitations from teachers for attendance at a school event will be a better predictor of parental attendance than a general invitation from the school. Therefore, a significantly higher proportion of parents from the group that receives specific invitations from teachers will attend the event than the group that receives only a general invitation from the school.

Hypothesis Two: A specific invitation from a child to attend a school event will be a better predictor of parental attendance than a specific invitation from a teacher. Therefore, a significantly higher proportion of parents from the group that receives a specific invitation from a child will participate in the event than the group that receives a specific invitation from a teacher.

Rationale: School efforts to involve parents have been demonstrated to have a positive effect on parental involvement both with homework and parental participation in activities at school (Simon, 2004). Moreover, Balli et al. (1998) observed that parents are

more likely to be involved in their child's schoolwork if they receive specific instructions for involvement from teachers as compared to instances when no communication is provided. Parents also report a slightly higher likelihood of helping with homework if the prompts come from their child than from the teacher alone. Therefore, the current study hypothesized that a child invitation for parental involvement would be the best type of invitation predicting parental involvement, followed by a specific invitation from a teacher. These two types of invitations were hypothesized to be better predictors of parental involvement than a general invitation from school.

Research Question 2: Does parental involvement in a school event decrease significantly in higher grades?

Hypothesis Three: Student membership in a lower grade will be a better predictor of parental attendance at the event than student membership in a higher grade. Therefore, a significantly higher proportion of parents from sixth grade classrooms will attend the event than that from seventh grade classrooms. Similarly, a significantly higher proportion of parents from seventh grade classrooms will attend the event than that from eighth grade classrooms.

Rationale: Studies have shown that parents of younger children are more likely to be involved in school activities than parents of older children (e.g., Stevenson & Baker, 1987). Other researchers have documented a decline in parental involvement in grades 8, 9, and 10 (e.g., Deslandes, 2003). Therefore, the current study hypothesized grade to be a significant

predictor of parental involvement in school and that parents of students in lower grades were more likely to be involved than parents of students in higher grades.

Research Question 3: Does explicit commitment by parents predict parental involvement in a school event?

Hypothesis Four: Parental agreement to attend the event in the RSVP will be a significant predictor of their attendance at the event. Therefore, a significantly higher proportion of parents who endorse “ yes, we will attend the event” will attend the event than parents who either say “no, we will not attend this time,” or do not respond at all to the invitation.

Rationale: Explicit commitment to behavioral performance has been shown to produce high level of compliance (i.e., performance of the behavior; Ajzen, Czasch, & Flood, 2009). Parents who give an affirmative response to an invitation to attend a school event tend to be more likely to attend the event (Shajith, 2010). Therefore, this study hypothesized affirmative response to the invitation from parents to be a significant predictor of their attendance at the school event.

Research Question 4: Is there a significant effect of gender of the child on parental involvement at a school event?

Research has shown some evidence for the effect of a child’s gender on parental involvement in his/her education. Some researchers have found an interaction effect of age and gender on parental involvement for boys (e.g., Stevenson & Baker, 1987), whereas some

others have explored the effect of gender stereotypes on parental involvement in their children's education (Bhanot & Jovanovic, 2005). However, there is not sufficient evidence to formulate a directional hypothesis for this research question; therefore, the effect of student gender on parent attendance was explored in this study in order to gather more information on this topic.

Chapter 3

Method

Setting/Participants

Setting. The study was conducted in three middle schools in a rural county in a southeastern state in the US. The Family Science and Math Night, held separately at each school, was chosen as the event for the study.

School A had a total of 387 students in 20 homerooms with girls constituting 48.32% of the student population. About 93% of the students were economically disadvantaged and received free or subsidized lunch. Of the students in this school, 18.6% were Caucasian, 37.47% were African American, and 42.64% were Hispanic. Other ethnic communities included in this school were multiethnic (1.81%), Native American/ Hawaiian (0.26%), and Asian (0.26%).

School B had a total of 929 students in 37 homerooms, of which 48.42% were female and 33% were economically disadvantaged. Caucasian students constituted 65.55% of the student population, 13.99% were African American, 16.47% were Hispanic, 3.66% were multiethnic, and 0.32% were Asian.

School C had 754 students in 34 homerooms. The population of this school included 48.1% female and 67% economically disadvantaged students. About 34% of the student population was Caucasian, 31.7% was Hispanic, and 26.26% was African American. Other

communities represented at this school included multi-racial (4.24%), Asian (1.06%), American Indian (0.66%), and Hawaiian/Pacific (0.27%).

The Family Science and Math Night was conducted in the three middle schools as a part of a K-12 outreach initiative by the STEM (Science, Technology, Engineering, and Math) program within the Engineering college of a local university. This event involved hands-on science, math, and engineering activities that students and parents completed together with the help of undergraduate engineering student volunteers. Fifteen to twenty activities were set up at different tables in the cafeteria and the students and parents visited each center to learn about the activities. The Family Science and Math Night was held on October 13, 2011 at School A, November 3, 2011 at School B, and November 17, 2011 at School C from 6:00 to 7:30 pm in the school cafeteria.

Participants. At School A, 386 students from 20 homerooms were included in the study. Teachers of 12 homerooms that were assigned to the two treatment conditions (six in each condition) were actively involved in the study. Six homerooms were assigned to the control condition. All teachers who were in charge of a homeroom in the school were included in the data analysis.

At School B, 921 students in 37 homerooms were included in the study. Teachers of 24 homerooms that were assigned to the two treatment conditions (12 in each condition) were actively involved in the study. The control group consisted of 12 homerooms. All teachers who were in charge of a homeroom in the school were included in the data analysis. Ten students at School B who were severely intellectually disabled were not included.

At School C, 694 students from 34 homerooms participated in the study. Teachers of 23 homerooms were assigned to the treatment groups and were actively involved in the study. There were 11 homerooms assigned to specific teacher invitation condition, whereas 12 homerooms were included in the specific child invitation condition. Eleven homerooms were assigned to the control group. All teachers in the school who were in charge of a homeroom were included in the analysis.

Research Design and Variables

Research design. A multiple treatments and controls design was used in this study. Family Science and Math Night at the schools, which occurred in the evening and for which parental participation was truly voluntary, was used as the context for the dependent variable.

Homerooms in the three middle schools were randomly assigned to one of three conditions: specific invitation from teacher, specific invitation from child, and no specific invitation. The entire school received the general invitation to the event from school. Therefore, the two experimental groups received both the general invitation from school and one of the two specific invitations, while the control group received the general invitation only. Table 1 shows the components of the treatment and control conditions.

Table 1

Components of the Treatment and Control Conditions

Components	Treatment conditions		
	General School + Specific Teacher	General School + Specific Child	General School only
Early Message	X	X	X
RSVP	X	X	
Reminder letter	X	X	
Message from school	X	X	X

Variables. The dependent variable was the presence of one or both parents/ legal guardians at the Family Science and Math Night. The proportions of students whose parents were present at the event from the experimental and the control groups were compared. The independent variables were the three different types of invitation (i.e., treatment conditions) for parental participation in the event.

General invitation from school involved an automated message from the school on the parents' telephone and a flyer sent home with the information about the event. See

Appendix A1 for an example of the flyer. The event was also advertised on the school billboard the day before and the day of the event. The control group (i.e., the group that received no specific invitation) received an early message two weeks before the event that provided pertinent information about it (e.g., date, time, and venue). (See Appendix A2)

Specific invitation from the teacher involved a formal letter from the homeroom teacher addressed to the parents using the format, "Dear Mr. and Mrs. (Last Name)." The letter used a standardized format and contained all the details of the event. In this letter, the teacher also expressed his/her appreciation for the parents' anticipated attendance. The letter had an RSVP section in which the parent was given a choice between "at least one of us will attend the event" and "we cannot make it to the event this time" along with a space for signature. The letter from the teacher had to be signed by a parent and returned to the teacher within a week to ensure that the parent had received the invitation. (See Appendix B1). Spanish translations of the teacher invitations (see Appendix B1.1) were sent to Spanish-speaking parents at Schools A and C. Of the parents whose students were assigned to the teacher invitation condition, about 21% at School A and 44% at School C received letters translated into Spanish.

Specific invitation from the child involved a personalized letter written by the child to the parent(s). The students in the homerooms assigned to the specific invitation from the child condition were given standardized instructions on writing the letter. In this letter, the child included the details about the event, expressed a strong desire for parental attendance, and included at least one personal reason why he/she would like the parent to attend. (See

Appendix C1). At Schools A and C, students were given the option to write the letter in Spanish. If a student chose to write the letter in Spanish, a student handout in Spanish was also provided. (See Appendix C2.1). Of the students assigned to the child invitation condition, less than 1% at School A and about 4% at School C wrote letters in Spanish to their parents.

Procedure

Once the school system approved the proposal for the study, all middle schools (12 total) in the school system were contacted to identify schools interested in participating. Four middle schools subsequently volunteered to participate; however, one school was not included in the study because it served students from kindergarten to eighth grade. Principals of the three schools were presented with the information on the K-12 outreach initiative of the STEM program at the local university. Dates of the event for each school were determined in collaboration with school principals and the STEM coordinator.

Homerooms at the three middle schools were randomly assigned to one of the three conditions: general invitation, general + teacher invitation, and general + child invitation. Stratified random sampling was used to ensure even representation of all three grade levels in the three conditions. However, a notable exception was that self contained homerooms with students with moderate disabilities were assigned to the general invitation condition in all three schools. Once the treatment groups were determined, the researcher met with the teachers in the treatment groups to discuss their roles in the study. To avoid crossover between conditions, separate meetings were held for each treatment condition and teachers

were asked to refrain from discussing the procedures with teachers who were not included in their respective treatment groups. Three meetings were held with each treatment group over the course of a month. Teachers were told that the study was aimed at identifying the most effective ways to increase parent involvement at school events. The specific details of the study were not shared with the teachers to avoid participant bias.

General invitation from school. General invitation from school involved an automated message on the parents' telephone sent two days before the event. A flyer with identical content was also sent home to the parent with the student on the same day. All students in the school received a general invitation from the school. Students assigned to the control group (i.e., the group that received no specific invitation) received an early message two weeks before the event that provided a brief description and pertinent information about the event (e.g., date, time, and venue).

Specific invitation from the teacher. A month prior to the event, the researcher met with the group of teachers assigned to the general + teacher invitation condition. The researcher discussed the teachers' role in the study and answered any questions they had. Teachers were given a form for each student that was to be completed with information about the student, including his/her name, name of parents/guardians, and a positive comment about the student. (See Appendix B2) Instructions for completing the form were also provided. (See Appendix B1)

The completed forms were returned at a second meeting with the researcher at the school. The information provided by the teachers on these forms was used by the researcher

to draft the teacher invitations for the teachers. Once the invitations were prepared, copies were made to be used as reminders on a later date. The invitations were then distributed to the teachers at a third meeting in which the teachers were given further instructions on the procedures to be followed. (See Appendix B3)

Teachers were asked to sign the letters and then send them home to parents with the students two weeks prior to the event. The letter from the teacher had to be signed by a parent and returned to the teacher within a week to ensure that the parent had received the invitation. Copies of original letters were sent home with students two days before the event as reminders. Teachers were also asked to give at least one verbal reminder every day after sending the first invitation, asking that students return the letters with a parent's or guardian's signature.

Specific invitation from the child. The researcher met with the teachers assigned to the general + child invitation condition a month prior to the event. The researcher discussed the teachers' role in helping students write letters to parent. Teachers were provided with standardized instructions that were to be read to the class verbatim (See Appendix C1). The student version also had instructions about writing the letter with an example of a completed letter (See Appendix C2). Spanish translations of the student version were also provided in Schools A and C for students whose parents did not read English (See Appendix C2.1). School A set aside one day that week for the writing activity to give the students sufficient time to complete their letters. Schools B and C asked the homeroom teachers to complete the

writing activity on a more convenient day within the week. The letters were completed during the homeroom period by students at all three schools.

The completed letters were returned to the researcher at a second meeting with the researcher at the school. Student letters were checked for compliance against the standard format of the student letter. Deviations from the standard format were noted, and pertinent information about the event that was missing in the letter was added as corrections. However, no feedback was given to the students about the letters. Copies of the student letters were made to be used later as reminders. The student letters were distributed to the respective homeroom teachers at a third meeting in which the teachers were given further instructions on the procedures to be followed. (See Appendix C3)

Teachers were asked to send the letters home to the parents with the students two weeks before the event. The letter from the child had to be signed by a parent or guardian and returned to the teacher within a week to ensure that he/she had received the invitation. Copies of original letters were sent home with students two days before the event as reminders. Teachers were also asked to give at least one verbal reminder every day after sending the first invitation, requesting that each student return the letters with a parent's signature.

The event day. On the day of the event (i.e., three separate evenings across schools), the researcher and a team of research assistants were present at the school to collect data from the parents. They asked every parent attending the event to complete a short questionnaire with the following information: name of child, name of child's homeroom teacher, and how the parent came to know about the event (see Appendix D). The

information on the short form provided data on the dependent variable. To ensure a higher response rate, the research team members were posted at the entrance to the cafeteria to distribute the short forms to and collect the information from the parents. Every short form was checked for missing data when a parent returned it to a team member. If a parent had checked “telephone message from school/flyer from school” as the source of information about the event, the research team member asked him/her if he/she had also received a letter from the teacher or the child. Also, if a parent reported that he/she had more than one child in the school, they were asked to complete the information for all children attending that school.

The day after the event. A debriefing form describing the study, the reasons for not obtaining parental consent in advance for involving the child in the study, the rights of the participants, and the researcher’s contact information was distributed to all students and teachers in the school (see Appendix E). These forms were distributed in all classrooms in the schools by teachers. Teacher surveys also were distributed to the teachers in the two treatment conditions on the day after the event. These surveys were used to determine the consistency with which the treatment was implemented. Appendices F1 and F2 show the surveys that were distributed to the teachers in the teacher and child invitation groups, respectively.

Measurement

Permanent products were used as the means of measurement in this study. Receipt of treatment (i.e., specific invitations from the teacher or the child) was confirmed by the return of the letter to the teacher with a parent's signature on it. Parent response in the RSVP section

was also noted. Information gathered on the day of the event using the short questionnaire provided data for the dependent variable. Treatment integrity surveys found in Appendices F1 and F2 yielded information on the consistency with which the treatments were implemented across schools.

Chapter 4

Results

This chapter describes the results of the data analyses. Descriptive statistics for data collected at the three schools are provided first. Then, a description of the inferential statistics, including the hierarchical linear model analysis, the process of assigning codes to categorical variables in the analyses, and the Models and variables included in the each Model, is presented next. Finally, the results are considered in the context of the research questions to examine the extent to which results supported the study's hypotheses.

Descriptive Statistics

Table 2 provides the descriptive statistics for the students whose parents attended the event at the three schools. Parents of 21(5.44%), 97 (10.54%), and 69 (9.16%) students attended the events at Schools A, B, and C, respectively. Of the parents who received a specific invitation, responses were returned by 108 (43.2%), 151 (24.55%), and 119 (22.16%) parents at Schools A, B, and C, respectively. Of the parents who responded to the specific invitations, 50 (46.30%), 92 (60.9%), and 75 (63.03%) agreed to attend the event at Schools A, B, and C, respectively.

All participants (with the exception of one) who were a part of the study were included in the analyses that follow. Data for one student from School B was removed from analysis upon parent request. There were no missing data. Each class was categorized as general invitation from school only, general + specific invitation from teacher, and general +

specific invitation from child conditions. Parental attendance at the event for each student from each class was entered as the dependent variable.

Table 2

Descriptive Statistics of Students whose Parents Attended the Events

	School A		School B		School C	
	Frequency	Proportion	Frequency	Proportion	Frequency	Proportion
<i>Demographics</i>						
<i>Girls</i>	12	0.06	51	0.11	31	0.09
<i>Boys</i>	9	0.05	46	0.10	38	0.10
<i>Hispanic</i>	8	0.05	7	0.05	11	0.05
<i>Non-Hispanic</i>	13	0.06	90	0.12	58	0.11
<i>Grade 6</i>	9	0.07	41	0.13	32	0.12

Table 2 Continued

<i>Grade7</i>	7	0.05	32	0.11	22	0.09
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<i>Grade 8</i>	5	0.04	24	0.08	15	0.06
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Conditions

<i>General</i>	2	0.01	5	0.02	9	0.04
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*Invitation
only*

<i>General</i>	12	0.09	58	0.19	24	0.10
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and

Teacher

Invitations

<i>General</i>	7	0.06	34	0.11	36	0.12
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and Child

Invitations

Inferential Statistics

Data were analyzed using Logistic Multilevel Models. Logistic regression was used because of the dichotomous nature of the dependent variable and the presumed non-linear relationship between the predictors and the outcome. Logistic regression analysis was used to determine if membership in a particular group predicted the presence of parents at the target event. Because of the nested nature of the data (i.e., students within homerooms), a multilevel modeling approach was used to analyze the data. Assuming a binary distribution and logit link function, SAS PROC GLIMMIX 9.2 (SAS Institute Inc., 2008) was used to fit the multilevel logistic regression models for the dichotomous outcome.

Specification and coding of variables. All variables included in the analysis were categorical variables; therefore, these variables were dummy coded to identify a meaningful zero. Dichotomous variables were coded as 0 and 1, with 1 generally representing the desired condition. A code of 1: (a) for the parent attendance variable, meant that the parent was present at the event; (b) for the RSVP-received variable, implied that the parent returned the invitation with a signature; (c) and for the affirmative response variable, showed that the parent checked the “yes at least one of us will attend” option in the letter. A code of 1 for gender represented females. A code of 1 denoted the general + teacher invitation condition on the teacher invitation variable and the general + child invitation condition on the child invitation variable. A code of 1 was given to seventh graders on the grade 7 variable and to the eighth graders on the grade 8 variable. A code of 1 represented students of Hispanic identity on the ethnicity variable.

Treatment conditions (i.e., types of invitations) and grade level of the students were used as homeroom level (Level 2) predictors. Other predictors, including student gender, student ethnicity, RSVP received (i.e., parents who returned a signed letter), and affirmative response (parents who responded “yes” on the RSVP), were entered as predictors at the student level (Level 1). Although more detailed information on ethnicity was expected to be available when beginning this research, the schools provided data on students with Hispanic identity only. Therefore, the “student ethnicity” variable in the analysis is dichotomous and refers to students in the Hispanic (versus non-Hispanic) category only.

Data were analyzed using four models. The first model, *Model 1*, included only the intercept as the predictor and is, therefore, referred to as the null or empty model (Curran, 2000; Nezleck, 2001). The predictors were entered into analyses in subsequent models. In *Model 2*, the treatment conditions were used to predict parent attendance at the event while controlling for grade level, gender, and ethnicity of the student. Parent commitment to attend the event was used as the independent variable in *Model 3* in addition to grade level, gender, and ethnicity of the student to predict parent attendance. In *Model 4*, a post hoc analysis was conducted in which treatment conditions and student demographic variables (i.e., grade level, gender, and ethnicity) were used to predict parental response to specific invitations. Only students whose parents had an opportunity to respond to the invitation (i.e., parents of students in the specific invitation conditions) were included in Models 3 and 4 of the analysis. Finally, results of a qualitative analysis of the treatment integrity survey data are presented. The Models used in the analyses are discussed in detail next.

Model 1. A preliminary analysis, called a fully unconditional model, was conducted. This analysis is recommended to ensure sufficient variability at Level 1 and Level 2 to warrant continuation with analyses (e.g., Nezleck, 2001; Raudenbush & Bryk, 2002). It must be noted that in linear cases, the proportion of total variance between groups, also known as intraclass correlation coefficient (ICC), is used to understand the amount of variance at each level. However, in non-linear cases, the ICC is less informative due to the heteroscedasticity in the Level 1 variance (Guo & Zhao, 2000). Model 1 in Tables 3, 4, and 5 present the results for the fully unconditional models for Schools A, B, and C, respectively. These tables also display results for Model 2, which will be discussed later.

Table 3

Effect of Level 1 and Level 2 Predictors on Parent Attendance at School A

Model 1		
-2 Residual Log Pseudo-Likelihood= 2226.47		
Generalized Chi-Square/df= 0.96		
	Estimate	SE
<i>Fixed Effects</i>		
Intercept	-2.86***	0.23
<i>Random Effects</i>		
Variance between homerooms (σ^2)	0.06	0.33

Table 3 Continued

Model 2					
-2 Residual Log Pseudo-Likelihood= 2384.03					
Generalized Chi-Square/df = 1.07					
	Estimate	SE	OR	95% Confidence	
				Limits	
				LCI	UCI
<i>Fixed Effects</i>					
Intercept (γ_{00})	-4.02***	0.81	-	-	-
Teacher invitation (γ_{01})	2.01*	0.78	7.49	1.45	38.65
Child Invitation (γ_{02})	1.44	0.81	4.20	0.75	23.43
Grade 7 (γ_{03})	-0.38	0.53	0.68	0.22	2.08
Grade 8 (γ_{04})	-0.68	0.58	0.51	0.15	1.74
Girls (γ_{10})	0.41	0.46	1.51	0.61	3.74
Hispanic (γ_{20})	-0.29	0.47	0.75	0.30	1.89

Table 3 Continued

Random Effects

Variance between homerooms (σ^2)	0	-
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* $p < .05$; *** $p < .0001$

Table 4

Effect of Level 1 and Level 2 Predictors on Parent Attendance at School B

Model 1		
-2 Residual Log Pseudo-Likelihood= 4802.74		
Generalized Chi-Square/df= 0.75		
	Estimate	SE
<i>Fixed Effects</i>		
Intercept	-2.33***	0.20
<i>Random Effects</i>		
Variance between homerooms (σ^2)	0.92	0.37

Table 4 Continued

Model 2					
-2 Residual Log Pseudo-Likelihood= 5176.62					
Generalized Chi-Square/df= 0.90					
	Estimate	SE	OR	95% Confidence	
				Limits	
				LCI	UCI
<i>Fixed Effects</i>					
Intercept (γ_{00})	-3.79***	0.52	-	-	-
Teacher invitation (γ_{01})	2.72***	0.52	15.21	5.28	43.81
Child Invitation (γ_{02})	2.01**	0.53	7.44	2.52	21.94
Grade 7 (γ_{03})	-0.21	0.34	0.81	0.40	1.63
Grade 8 (γ_{04})	-0.69	0.36	0.50	0.24	1.05
Girls (γ_{10})	0.07	0.23	1.07	0.69	1.67
Hispanic (γ_{20})	-1.08*	0.43	0.34	0.15	0.79

Table 4 Continued

Random Effects

Variance between homerooms (σ^2)	0.22	0.18
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* $p < .05$; ** $p < .01$; *** $p < .0001$

Table 5

Effect of Level 1 and Level 2 Predictors on Parent Attendance at School C

Model 1		
-2 Residual Log Pseudo-Likelihood= 4030.37		
Generalized Chi-Square/df= 0.77		
	Estimate	SE
<hr/>		
<i>Fixed Effects</i>		
Intercept	-2.52***	0.22
<i>Random Effects</i>		
Variance between homerooms (σ^2)	0.90	0.36

Table 5 Continued

Model 2					
-2 Residual Log Pseudo-Likelihood= 4193.47					
Generalized Chi-Square/df= 0.79					
	Estimate	SE	OR	95% Confidence	
				Limits	
				LCI	UCI
<i>Fixed Effects</i>					
Intercept	-2.46***	0.56	-	-	-
(γ_{00})					
Teacher invitation	0.87	0.62	2.38	0.67	8.47
(γ_{01})					
Child Invitation	1.18 ^a	0.60	3.25	0.95	11.08
(γ_{02})					
Grade 7 (γ_{03})	-0.54	0.53	0.58	0.20	1.72
Grade 8 (γ_{04})	-1.01	0.58	0.36	0.11	1.19
Girls (γ_{10})	-0.34	0.27	0.72	0.42	1.22

Table 5 Continued

Hispanic	-1.02**	0.35	0.36	0.18	0.72
(γ_{20})					
<i>Random Effects</i>					
Variance between homerooms (σ^2)	0.94	0.41			

** $p < .01$; *** $p < .0001$

^a $p = .059$

Model 2. The data were then analyzed using a one-way ANCOVA with random effects model, the relevant equations of which are presented below. The slopes were constrained in the analysis to conserve degrees of freedom in the random effects and to aid in convergence of the model. Therefore, the only random effect at Level 2 is for the intercept (u_{0i}).

The equation for the Model 2 analysis is presented next. The Greek letters represent the values of the coefficients related to the independent and dependent variables (e.g., the intercept and slope).

$$\text{Level 1: Parent Presence}_{ij} = \beta_{0ij} + \beta_{1ij} (\text{girls}) + \beta_{2ij} (\text{Hispanic}) + r_{ij}$$

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01} (\text{teacher invitation}) + \gamma_{02} (\text{child invitation}) + \gamma_{03} (\text{grade 7}) + \gamma_{04} (\text{grade 8}) + u_{0i}$$

$$\beta_{1i} = \gamma_{10}$$

$$\beta_{2i} = \gamma_{20}$$

In Level 1, the intercept β_{0ij} is defined as parent attendance for student I who is male and non-Hispanic. The slopes represent the expected change in parent attendance based on being a female student (β_{1ij}), and a student with Hispanic identity (β_{2ij}). The error term r_{ij} refers to the unique effect associated with the classroom or homeroom (i.e., the variance in parental attendance at the event from a given homeroom). The individual intercepts and slopes become the outcome variable in the Level 2 equations, where parental attendance for a male, non-Hispanic, sixth grade student in the general invitation only (control) condition is represented by γ_{00} . The slopes refer to sample average effects for the Level 1 and Level 2 predictors: γ_{01} (teacher invitation), γ_{02} (child invitation), γ_{03} (grade 7), γ_{04} (grade 8), γ_{10} (girls), γ_{20} (Hispanic). The extent to which parent attendance varies across homerooms is represented by u_{0i} . The results of these analyses are described next in the context of the study's research questions and hypotheses.

Results of Model 2 of the analysis were used to answer Research Questions 1, 2, and 4. This model was also used to determine the effect of ethnicity as a covariate on parent attendance at the event. As previously noted, Tables 3, 4, and 5 present the results of Model 2 of the analysis for Schools A, B, and C, respectively.

Research Question 1. Are there significant differences among the effects of a general invitation from school, a specific invitation from a teacher, and a specific invitation from a child on parental involvement in a school event?

The results of the multilevel analysis showed at least one treatment condition to be a significant predictor of parent attendance at the event at two schools. Results are presented by school.

In School A, parents of students who received an additional specific teacher invitation were 7.49 [$F(1, 17) = 6.70; p = .02$] times more likely to attend the event than the parents who received the general invitation only. However, the effect of an additional teacher invitation was not significantly different from the effect of an additional child invitation. An additional child invitation did not have a significant effect on parental attendance at this school.

Similarly, in School B, an additional teacher invitation was a significant predictor of parent attendance at the event. Parents of students who received an additional teacher invitation were 15.21 [$F(1, 30) = 27.59; p < .0001$] times more likely to attend the event than parents who received a general invitation only. At this school, the child invitation was also a significant predictor of parent attendance at the event. Parents of students who received a child invitation along with the general school invitation were 7.44 [$F(1, 30) = 14.37; p = .0007$] times more likely to attend the event than students who received a general invitation only. Moreover, parents who received an additional teacher invitation were 2.04 [$F(1, 30) = 5.40; p = .027$] times more likely to attend the event than parents who received an additional child invitation.

At School C, the additional teacher or child invitation was not found to be a significant predictor of parent attendance; however, the estimate of additional specific child

invitation approached significance. Parents of students who received an additional child invitation were 3.25 [$F(1, 31) = 3.83; p = .059$] times more likely to attend the event than students who received the general invitation only.

Research Question 2: Does parental involvement in a school event decrease significantly in higher grades?

Grade levels were entered as level 2 predictors in the analysis along with the treatment conditions. Results showed that grade levels were not associated with parent attendance at the event.

Research Question 4: Is there a significant effect of gender of the child on parental involvement at a school event.

Gender of the student was not associated with parent attendance at the event at all three schools.

Covariates. Hispanic ethnicity was found to be associated with parent participation in the event at Schools B and C. At School B, parents of non-Hispanic students were 3.04 [$F(1, 883) = 6.79; p = .009$] times more likely to attend the event than parents of Hispanic students. Parents of non-Hispanic students at School C were 2.78 [$F(1, 715) = 8.40; p = .004$] times more likely to attend the event. Ethnic identity was not a significant predictor of parent attendance at School A.

Model 3. Model 3 of the analysis was used to address Research Question 3, which concerned parental commitment to attend as a predictor of actual attendance. This model

included only the students who received a specific invitation (i.e., students whose parents had an option to respond to the invitation). Data were entered such that students who received a general invitation only had missing data for this variable; hence, they were not included in this analysis. In this model, affirmative response to the invitation was entered as a predictor at Level 1. Tables 6, 7, and 8 present the results of Model 3 of the analysis for Schools A, B, and C, respectively. The equation for this analysis is given below.

$$\text{Level 1: Parent Presence}_{ij} = \beta_{0ij} + \beta_{1ij} (\text{affirmative response}) + \beta_{2ij} (\text{girls}) + \beta_{3ij} (\text{Hispanic}) + r_{ij}$$

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01} (\text{grade 7}) + \gamma_{02} (\text{grade 8}) + u_{0i}$$

$$\beta_{1i} = \gamma_{10}$$

$$\beta_{2i} = \gamma_{20}$$

$$\beta_{3i} = \gamma_{30}$$

As in the equation for Model 2 analysis, in Level 1, the intercept β_{0ij} represents parent attendance for student i who is male and non-Hispanic, and who did not respond to the invitation or declined the invitation in the response. The slopes represent the expected change in parent attendance based on an affirmative response to the invitation from the parent (β_{1ij}), being a girl (β_{2ij}), and having a Hispanic identity (β_{3ij}). The error term r_{ij} refers to the unique effect associated with the homeroom (i.e., the variance in parental attendance at the event from a given homeroom). In the Level 2 equations, the individual intercepts and slopes from Level 1 become the outcome. Parent attendance at the event for a male, non-Hispanic, sixth grade student, who declined or did not respond to the invitation is represented by γ_{00} . The

slopes refer to the sample average effects of the Level 1 and Level 2 predictors: γ_{01} (grade 7), γ_{02} (grade 8), γ_{10} (affirmative response from parent), γ_{20} (girls), and γ_{30} (Hispanic). The extent to which parent attendance varies across homerooms is represented by u_{0i} .

Research Question 3: Does explicit commitment by parents predict parental involvement in a school event?

Parental commitment to attend the event was a significant predictor of actual attendance at all three schools. At School A, parents who agreed to attend in their response to the invitation were 14.33 [$F(1, 235) = 21.43; p < .0001$] times more likely to attend than parents who declined the invitation or did not respond. Similarly, parents who agreed to come to the event were 15.07 [$F(1, 588) = 62.74; p < .0001$] times more likely to attend at School B, and 14.4 times [$F(1, 511) = 41.57; p < .0001$] more likely to attend at School C.

Table 6

Effect of Parent Affirmative Response to Invitation on Attendance at School A

Model 3					
-2 Residual Log Pseudo-Likelihood= 1521.38					
Generalized Chi-Square/df= 0.98					
	Estimate	SE	OR	95% Confidence Limits	
				LCI	UCI
<i>Fixed Effects</i>					
Intercept (γ_{00})	-3.47**	0.67	-	-	-
Grade 7 (γ_{01})	-0.21	0.60	0.81	0.21	3.16
Grade 8 (γ_{02})	-0.34	0.68	0.71	0.15	3.34
Affirmative Response (γ_{10})	2.66***	0.58	14.33	4.61	44.47
Girls (γ_{20})	-0.02	0.54	0.98	0.34	2.84
Hispanic (γ_{30})	0.01	0.53	1.02	0.36	2.88

Table 6 Continued

Random Effects

Variance between homerooms (σ^2)	0	-
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** $p < .01$; *** $p < .0001$

Table 7

Effect of Parent Affirmative Response to Invitation on Attendance at School B

Model 3					
-2 Residual Log Pseudo-Likelihood= 3213.49					
Generalized Chi-Square/df= 0.83					
	Estimate	SE	OR	95% Confidence Limits	
				LCI	UCI
<i>Fixed Effects</i>					
Intercept	-2.52***	0.41	-	-	-
(γ_{00})					

Table 7 Continued

Grade 7	0.40	0.51	1.50	0.52	4.32
(γ_{01})					
Grade 8	-0.16	0.52	0.85	0.30	2.50
(γ_{02})					
Affirmative	2.71***	0.34	15.07	7.69	29.52
Response					
(γ_{10})					
Girls (γ_{20})	0.08	0.25	1.08	0.66	1.79
Hispanic	-0.96*	0.46	0.38	0.15	0.95
(γ_{30})					
<i>Random Effects</i>					
Variance between	0.61	0.34			
homerooms (σ^2)					

* $p < .05$; *** $p < .0001$

Table 8

Effect of Parent Affirmative Response to Invitation on Attendance at School C

Model 3					
-2 Residual Log Pseudo-Likelihood= 2985.48					
Generalized Chi-Square/df= 0.71					
	Estimate	SE	OR	95% Confidence Limits	
				LCI	UCI
<i>Fixed Effects</i>					
Intercept (γ_{00})	-2.21**	0.56	-	-	-
Grade 7 (γ_{01})	-0.67	0.74	0.51	0.11	2.39
Grade 8 (γ_{02})	-0.31	0.80	0.73	0.14	3.91
Affirmative response (γ_{10})	2.67***	0.41	14.40	6.39	32.47
Girls (γ_{20})	-0.63 ^a	0.32	0.53	0.28	1.01
Hispanic (γ_{30})	-0.71	0.40	0.49	0.23	1.08

Table 8 Continued

Random Effects

Variance between homerooms (σ^2)	1.57	0.74
----------------------------------------------	------	------

** $p < .01$; *** $p < .0001$

^a $p = .05$

Model 4. Parent presence at a school event may be influenced by other parent-related factors, including time off from work, availability of child care for siblings, and transportation. Because the scope of this study was not large enough to control for these factors, a post hoc analysis was conducted to predict parental intent to attend by using parent response to the invitation as the outcome. Level 2 variables, including treatment conditions and student grade levels, and Level 1 variables, including student gender and ethnic identity, were entered as predictors in Model 4 to predict if a parent responded to the specific invitation.

As in Model 3, Model 4 included only those students who received a specific invitation (i.e., students whose parents had an option to respond to the invitation) in the analysis. The equation for Model 4 is presented below.

$$\text{Level 1: Parent RSVP}_{ij} = \beta_{0ij} + \beta_{1ij} (\text{girls}) + \beta_{2ij} (\text{Hispanic}) + r_{ij}$$

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01} (\text{teacher invitation}) + \gamma_{02} (\text{grade 7}) + \gamma_{03} (\text{grade 8}) + u_{0i}$$

$$\beta_{1i} = \gamma_{10}$$

$$\beta_{2i} = \gamma_{20}$$

In Level 1, the intercept β_{0ij} is defined as parent attendance for student i who is male and non-Hispanic. The slopes represent the expected change in parent response to specific invitation based on being a female student (β_{1ij}), and a student with Hispanic identity (β_{2ij}). The error term r_{ij} refers to the unique effect associated with the classroom or homeroom (i.e., the variance in parental response to invitation from a given homeroom). The individual intercepts and slopes become the outcome variable in the Level 2 equations, where parent response to specific invitation for a male, non-Hispanic, sixth grade student in the specific child invitation condition is represented by γ_{00} . The slopes refer to sample average effects for the Level 1 and Level 2 predictors: γ_{01} (teacher invitation), γ_{02} (grade 7), γ_{03} (grade 8), γ_{10} (girls), γ_{20} (Hispanic). The extent to which parent response to specific invitation varies across homerooms is represented by u_{0i} .

Tables 9, 10, and 11 present the results of the analysis of Model 4 for Schools A, B, and C, respectively. The results of these analyses show that the type of specific invitation was not a significant predictor of parent response to specific invitation. However, a significant gender effect was noted across all three schools. Parents of female students were more likely to respond to a specific invitation than parents of male students. Parents of girls were 3.34 [$F(1, 236) = 15.12; p = .0001$], 2.01 [$F(1, 589) = 7.71; p = 0.006$], and 1.63 [$F(1, 512) = 3.76; p = .05$] times more likely to respond to the specific invitations than parents of boys at Schools A, B, and C, respectively.

In addition, at School C, membership in grade 8 was found to be a significant predictor of parent response to specific invitation. Parents of eighth grade students were

significantly less likely to respond to the specific invitation than parents of sixth and seventh grade students. Parents of sixth grade students were 12.20 [$F(1, 19) = 4.96; p = .04$] times more likely than those of eighth grade students to respond to the specific invitation. Whereas, parents of seventh grade students were 24.97 [$F(1, 19) = 8.40; p = .01$] times more likely to respond to the invitation than parents of eighth grade students.

Table 9

Effect of Level 1 and Level 2 Predictors on Parent Response (RSVP) to Specific Invitations at School A

Model 4					
-2 Residual Log Pseudo-Likelihood= 1179.29					
Generalized Chi-Square/df= 0.86					
	Estimate	SE	OR	95% Confidence Limits	
				LCI	UCI
<i>Fixed Effects</i>					
Intercept (γ_{00})	-0.19	1.03	-	-	-
Teacher invitation (γ_{01})	0.05	1.02	1.05	0.10	11.17
Grade 7 (γ_{02})	-1.50	1.25	0.22	0.01	3.96
Grade 8 (γ_{03})	-1.49	1.25	0.23	0.01	3.99
Girls (γ_{10})	1.21**	0.31	3.34	1.81	6.15
Hispanic (γ_{20})	0.15	0.33	1.17	0.62	2.22

Table 9 Continued

Random Effects

Variance between homerooms (σ^2)	2.76	1.80
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** $p < .01$

Table 10

Effect of Level 1 and Level 2 Predictors on Parent Response (RSVP) to Specific Invitations in School B

Model 4					
-2 Residual Log Pseudo-Likelihood= 3516.94					
Generalized Chi-Square/df= 0.49					
	Estimate	SE	OR	95% Confidence Limits	
				LCI	UCI
<i>Fixed Effects</i>					
Intercept (γ_{00})	-0.49	1.13	-	-	-

Table 10 Continued

Teacher invitation (γ_{01})	-1.50	1.23	0.22	0.02	2.92
Grade 7 (γ_{03})	-2.97	1.53	0.05	0.00	1.25
Grade 8 (γ_{04})	-2.01	1.43	0.13	0.01	2.66
Girls (γ_{10})	0.70**	0.25	2.01	1.23	3.28
Hispanic (γ_{20})	-0.10	0.35	0.90	0.45	1.79
<i>Random Effects</i>					
Variance between homerooms (σ^2)	6.82	2.73			

** $p < .01$

Table 11

Effect of Level 1 and Level 2 Predictors on Parent Response (RSVP) to Specific Invitations in School C

Model 4					
-2 Residual Log Pseudo-Likelihood= 2865.14					
Generalized Chi-Square/df= 0.68					
	Estimate	SE	OR	95% Confidence Limits	
				LCI	UCI
<i>Fixed Effects</i>					
Intercept	-2.06*	0.78	-	-	-
(γ_{00})					
Teacher invitation	0.61	0.81	1.84	0.34	10.06
(γ_{01})					

Table 11 Continued

Grade 7	0.72	0.90	2.05	0.31	13.59
(γ_{03})					
Grade 8	-2.50*	1.12	0.08	0.01	0.86
(γ_{04})					
Girls (γ_{10})	0.49 ^a	0.25	1.63	0.99	2.68
Hispanic	-0.35	0.28	0.71	0.41	1.22
(γ_{20})					
<i>Random Effects</i>					
Variance between	2.81	1.26			
homerooms (σ^2)					

* $p < .05$

^a $p = .05$

Treatment integrity results. An anonymous survey was conducted to assess the integrity with which the treatments were implemented by the teachers (See Appendices F1 and F2). These surveys were given to teachers in the specific invitation conditions only. Only 62.71% of the teacher surveys were returned. School A did not return any surveys, so results reported below are from Schools B and C only.

At School B, 91.66% of the teachers assigned to the specific invitation conditions returned surveys (11 teachers each from both treatment conditions). In the specific teacher invitation condition, two teachers reported that they had implemented all the steps in the

treatment as instructed, whereas nine teachers reported that they had not completed at least one step in the treatment. Six teachers reported that they missed one meeting with the researcher and three teachers reported having missed two meetings. The highest number of absences was reported for the third meeting. Six teachers reported that they did not remind the students every day to return the signed letters. According to teacher reports, four teachers from this group did not distribute reminder letters to the students and one teacher did not complete the student information form. In the specific child invitation condition, six teachers reported that they had completed all the steps in the treatment as instructed by the researcher, whereas five teachers reported that they did not complete at least one step in the treatment. One teacher reported that she had missed two meetings with the researcher and four teachers reported that they did not give a daily reminder to the students to return the signed letters.

At School C, 65.21% of the teachers assigned to the treatment conditions returned the surveys. More specifically, six teachers from the specific teacher invitation condition and nine teachers from the specific child invitation condition returned surveys. In the specific teacher invitation condition, four teachers reported that they completed all steps of the treatment as instructed. One of the two teachers, who reported that he/she had missed the meetings with the researcher, was absent at all three meetings; whereas, the other teacher missed only one meeting. One teacher also reported that she did not remind students everyday to return the signed letters. In the specific child invitation condition, five teachers reported that they completed the treatment with complete integrity. Three teachers failed to provide daily reminders to students to return signed letters. One teacher reported that he/she

did not attend one meeting with the researcher and a second teacher reported that she did not distribute the reminder letters on the date specified.

In addition, observational data were gathered by the researcher to evaluate the consistency with which the treatments were implemented across schools. It was observed that of all the teachers assigned to the specific invitation conditions across the three schools, about 43% missed at least one meeting. At least three teachers did not attend any of the meetings with the researcher. Other inconsistencies were also observed that are discussed in the next chapter.

Chapter 5

Discussion

Interpretation of Results

The purpose of this study was to determine if there were differential effects among a general invitation from school, an additional specific invitation from a teacher, and an additional specific invitation from a child on parental attendance at a school event. It was hypothesized that: (a) a specific invitation from a teacher would be a better predictor of parental attendance than a general invitation from the school, and (b) a specific invitation from a child would be a better predictor of parental attendance than a specific invitation from a teacher. The study also explored the effect of grade level on parental attendance; specifically, parents of students in eighth grade were hypothesized to be less likely to attend the event than parents of students in seventh and sixth grades. Moreover, it was hypothesized that parental commitment to attend the event would be a significant predictor of parent attendance. In addition, the effect of student gender and ethnicity on parental attendance was studied. Furthermore, the results of a treatment integrity survey were explored to study the effect of treatment consistency on results. This chapter discusses the results of the analyses in the context of the research questions and the specific hypotheses. Some limitations of this study are then presented with recommendations for future research, followed by conclusions.

Effect of invitations on parent attendance at school event. Research Question 1 explored the differences among the effects of a general invitation from school, a specific invitation from a teacher, and a specific invitation from a child on parental involvement in a

school event. The results indicated that a specific invitation may be a better predictor of parent attendance than a general invitation. Results from the three schools also showed that the addition of at least one type of specific invitation to be a better predictor than the general invitation only. However, the difference between the effects of general and specific invitations did not meet the significance criterion in one school.

Hypothesis one. A specific invitation from a teacher for attendance at a school event was hypothesized to be a better predictor of parental attendance than a general invitation from the school. Results from two of three schools supported the first hypothesis, in that a teacher invitation in addition to the general invitation was found to be significantly better than general invitation only in bringing parents to the school event.

Teacher invitations in addition to the general invitation were found to be relatively more effective than general invitation only in bringing parents to the event. Teacher invitations may have been more influential in encouraging parents to come to school for various reasons. First, the content of the teacher invitation, and the positive comments about the child in particular, may have been prominent in encouraging parent attendance. Generally, teachers are more likely to communicate with parents when they experience academic or behavioral concerns with the student (Dornbusch & Glasgow, 1996; Epstein, 1996), which results in interactions of a negative nature between parent and teacher (Lightfoot, 1978). Therefore, a parent may perceive positive notes from the teacher as an attempt to show his/her genuine interest in working with the parent as well as an appreciation for the parent's contributions.

Second, the effectiveness of the additional teacher invitation may also be explained in the context of *affiliation goals*. Humans tend to create and maintain meaningful social relationships with others, which is often accomplished by adhering to norms of social exchange (Cialdini & Goldstein, 2004). The norm of reciprocation is an example of social exchange norms. Gouldner (1960) argued in favor of the idea of reciprocity as a moral norm and emphasized its role in the maintenance of stable social systems. In their review of research on social influence, Cialdini and Goldstein defined the norm of reciprocation as “the rule that obliges us to repay what we received from them” (p. 599). A customized letter from a teacher thus may have obligated parents to repay the act by attending the event. Alternately, this effect may be conceptualized in the context of Raven’s power/interactional model of interpersonal influence (Raven, Schwarzwald, & Koslowsky, 1998). According to this model, teachers may be exercising the social power of legitimate equity to influence the parents’ decision to attend the event. In other words, parents may have perceived the underlying message in the teacher letter as, “You owe it to me because I have taken the effort to write a personal letter for you,” which in turn may have induced a sense of obligation in the parent to attend the event.

Third, the teacher invitation may have unintentionally activated an *ingratiation effect*. Ingratiation behaviors are often initiated by individuals to appear more desirable or likeable to a target (Strutton & Pelton, 1998). A metaanalysis by Gordon (1996) revealed that ingratiation has a positive effect on ratings of likeability by the target. Moreover, this impression management tactic was more effective when used in downward or lateral influence attempts. Ingratiation attempts may be as simple as remembering the target’s name,

as demonstrated by Howard and colleagues (1995, 1997) by the term, *remembrance effect*. They found that Person A's ability to remember Person B's name can motivate Person B to comply with a request made by Person A. Thus, the mention of the student's name and strength in a teacher invitation may have served an ingratiation function. This ingratiation effect may have made teachers seem more likeable to parents, who in turn may have felt more compelled to attend the school event.

Hypothesis two. A specific invitation from a child to attend a school event was expected to be a better predictor of parental attendance than a specific invitation from a teacher. In School C, a child invitation in addition to the general invitation was found to be the best predictor of parent attendance at the event when compared to additional teacher invitation and general invitation only. However, this result did not reach the required level of significance. In School B, although the additional child invitation was found to be a significant predictor of parent attendance at the event, the effect of this treatment was lower than that of additional teacher invitation. Therefore, Hypothesis Two was not supported.

Although extant literature has shown invitations extended by a child to be a better predictor of parent involvement in the child's education (Balli, Demo, & Weldman 1998; Deslandes & Bertrand, 2005), the current study failed to confirm this finding. One of the reasons for this finding may be the nature and focus of the events. The STEM events conducted at the three schools focused on hands-on activities in the areas of Science, Math, and Engineering. It is possible that student interest in these subjects may have operated as a confounding variable in this study.

For example, Talton and Simpson (1986) used a set of variables called “family science” to predict sixth through tenth grade students’ attitudes toward science. Family members’ attitudes toward science as reflected in their activities, such as watching science shows on television, and helping with science homework were found to be predictors of students’ attitudes toward science. It may be inferred from this research finding that a student who perceived a lack of interest in science or STEM subjects on the part of his/her family may not have considered it important to invite his/her parents to the STEM event.

Secondly, adolescent dislike for parent attendance at a school event may have also contributed to the failure to find a significant effect of child invitation on parent attendance. Although adolescents report that they want their parents to be involved in their education by helping them manage their course schedules, select classes, work on large projects, attend parent-teacher conferences and school events, they do not want their parents to be a part of activities such as chaperoning for field trips (Hill, Tyson, & Bormell, 2009). Similarly, most eighth grade students in the National Educational Longitudinal Study of 1988 (NELS:88; Ingles et al., 1990) data reported that they did not know if their parents talked to their teachers, visited their classrooms, or attended a school event (Epstein & Lee, 1995). These authors inferred that students paid more attention to family visits to school where they accompanied their parents than to visits that were made in their absence. These qualitative findings imply that middle school students may not encourage parent attendance at events when they are expected to be present. Therefore, students in the current study may have been discouraged from inviting their parents to the event because the invitation requested that the parent attend with the student.

These findings have some important implications for home-school communication. Teacher-initiated communication may be more effective in encouraging parental participation in students' educational activities, particularly if the activity demands parent presence at the school. On the other hand, child invitations may be an adequate form of communication in encouraging parental involvement in school activities; however, they may not be as effective as teacher invitations in ensuring parent attendance at a school event where student attendance is also expected.

Effect of grade level on parent attendance at school event. Research Question 2 examined if parental involvement in a school event decreased significantly in higher grades. Student membership in a lower grade was hypothesized to be a better predictor of parental attendance at the event than student membership in a higher grade. Student grade level, however, was not a significant predictor of parent attendance at all three schools. Although the regression estimates for eighth grade students tended to be lower than those for seventh and sixth graders, these effects were not significant.

Low parent attendance at the school events in general (5.44% at School A, 10.54% at School B, and 9.16% at School C) may have been a reason for the failure to detect a significant grade level effect on parent attendance. Parent attendance may be influenced by many other factors, including child care arrangements for younger children, availability of transportation, and flexibility with work hours, etc. (Espinoza, 1988; Pena, 2000). However, these factors are less likely to affect a parent's willingness to return a written response to the

invitation. Therefore, the effect of grade level on parent response to specific invitations was explored in a post hoc analysis, the results of which are discussed next.

An interesting grade level effect was noted in the post hoc analysis for one school, which did predict parent response to specific invitation. At School C, parents of seventh grade students were most likely to respond to the invitation with a signed letter, followed by parents of sixth graders. This difference may be attributed to the seventh grade parents' familiarity with the middle school system and the teachers that they developed since their child entered middle school, whereas parents of sixth graders may be still overwhelmed and getting acquainted with the system and the teachers. On the other hand, parents of eighth grade students were least likely to respond to the specific invitation, which is consistent with previous research that showed a decline in parental involvement in higher grades (i.e., 8, 9, 10; see e.g., Deslandes, 2003).

Deslandes (2003) attributed the decline in parental involvement in higher grades to increasing adolescent autonomy. In contrast, Adams and Christenson (2000) cited a decrease in parents' trust in teachers in higher grades as a reason for reduced parental involvement. According to Adams and Christenson, the deterioration in trust is caused by reduced interactions between parents and teachers in the higher grade levels. Moreover, in higher grades, students are held increasingly responsible for their own work, which limits communication opportunities between parents and teachers. Therefore, in the absence of any interaction or communication with the teacher, parents may no longer see the need to behave

in ways that would enhance the teacher's trust in them, which may result in low parental involvement in school.

This finding has some implications for parental involvement practices in middle schools. Although there is much controversy about the influence of parents in the adolescent years (e.g., de Castro & Catsambis, 2009), research shows the importance of the parents' role in adolescents' academic success and planning (Harris, 1998), and in providing guidance and support in making postsecondary choices and in transitioning to high school and adult life (Plank & Jordan, 2001). Effective communication with teachers will be helpful for parents in supporting their child's secondary and post secondary education.

Effect of parent commitment to attend the event on parent attendance. The effect of explicit commitment by parents on parental involvement in a school event was investigated by Research Question 3. Parental agreement to attend the event in the RSVP was hypothesized to be a significant predictor of their attendance. Parental agreement to attend the event in the RSVP was in fact found to be a significant predictor of parent attendance at all three schools. Thus, results supported Hypothesis Four. A response of "yes, one of us will attend the event" may have served the function of an explicit commitment to behavioral performance for the parents, as hypothesized, and hence may have increased probability of compliance.

This finding is consistent with Ajzen and colleagues' (2009) finding that commitment to the intended behavior increases compliance. Research shows that when individuals are asked to formulate an implementation intention (i.e., a specific plan indicating when, where,

and how they will carry out the intended action), there is a dramatic increase in the correlation between intended and actual behavior (Gollwitzer, 1999; Gollwitzer & Sheeran, 2006). However, the Gollwitzer studies did not account for the role of commitment. Ajzen, Czasch, and Flood (2009) tried to further explore the operation of implementation intention in their study where they also examined the role of sense of commitment in increasing the effectiveness of implementation intentions.

Ajzen and colleagues (2009) studied participants' compliance with the instruction to complete ratings for TV newscasts for a month. The study involved six experimental conditions: three levels of implementation intention (general, specific, and no implementation intention) crossed with two levels of commitment (present and absent). The results of the Ajzen et al. study reaffirmed the power of implementation intentions in inducing performance of an intended behavior (i.e., completion of ratings). It was also found that an explicit commitment to behavioral performance (i.e., "I hereby make a commitment to complete this study...") was sufficient to produce high level of compliance, in the absence of a specific implementation intention. The level of compliance produced by an explicit commitment was found to be similar to that produced by an implementation intention. Thus, applying these findings to the current study, it may be inferred that an explicit commitment by the parents, in the form of an affirmative response and signature on the invitation, may have encouraged them to attend the event.

Moreover, following through with the commitment made on the RSVP may have presented as an opportunity for parents to strengthen the trust in their relationship with the

teacher. Adams and Christenson (2000) demonstrated the importance of trust in parent-teacher relationships, differentiated between each party's level of trust in the relationship, and described ways in which trust is developed in this relationship. Rotter (1980, as cited in Adams & Christenson, 2000) defined trust as "a generalized expectancy held by an individual that the word, promise, or statement of another individual can be relied upon" (p. 479). Therefore, in a family-school relationship, trust may be defined as the confidence that other person will act in a way to sustain the relationship and to achieve positive outcomes for students (Adams & Christenson, 1998). Trust progresses through three hierarchical levels: (a) predictability (focus on reliability of other's behavior); (b) dependability (focus on other's personal qualities); and (c) faith (reflects emotional security with the other party) (Rempel, Holmes, & Zanna, 1985, as cited in Adams & Christenson, 2000). However, in a parent-teacher relationship, there are limited opportunities for these three levels of trust to evolve because most interactions occur during crisis situations when students have violated school regulations. Thus, the parent may not have an opportunity for positive interactions with the teacher, which is a prerequisite for developing trust (Adams & Christenson, 2000).

In addition, Adams and Christenson (1998, 2000) found that parental trust of teachers was higher than teacher trust of parents. One explanation the researchers gave for lower teacher trust of parents is that parents generally have no professional credentials to instill an initial level of trust in teachers. In the absence of adequate opportunities for interaction, teachers remain at the predictability level of trust and have to base their trust on parent behaviors. Given these findings, it may be inferred that parents will tend to behave in ways that would facilitate and enhance teachers' trust in them at least at the predictability level.

Therefore, a parent who commits to attending a school event may be more likely to attend to ensure a teacher's trust in them.

Furthermore, research within social psychology has found a relationship between relational cohesion and commitment behavior. Lawler and Yoon (1996) argued that when two people come together to accomplish a joint task, they are likely to experience mild feelings of satisfaction and excitement as a result of both the individual rewards produced by the partnership and the successful accomplishment of a task together. These emotions make the dyadic relation and its impact more salient and real to the individuals involved, which Lawler and Yoon conceptualized as "relational cohesion." The authors proposed that relational cohesion can lead to commitment behaviors of various forms. Their study found that when people have a common focus and involve in repeated interactions, they think of themselves as being a part of something larger, which in turn fosters commitment behavior. Thus, repeated communication between parents and teachers, and increased opportunities for working together to improve child outcomes can be extremely important in ensuring parental commitment to participation in school activities.

These findings have important implications for parent involvement practices in middle schools. It suggests that if teachers can ensure parental commitment to parent involvement practices at school, there is a higher chance that a parent will be involved in school activities. A trusting relationship between parent and teacher, developed through communication, and repeated interactions between them, may be a prerequisite for parental commitment.

Effect of gender on parent attendance at school event. Research Question 4 explored the effect of gender of the child on parental involvement at a school event. Results, however, showed that gender was not a significant predictor of parental attendance. However, in a post hoc analysis, gender was found to be a significant predictor of parental response to specific invitation: parents of girls were more likely to respond to the specific invitation than parents of boys. Because parental response to invitation is contingent upon parental receipt of the invitation, this finding may imply that parents of girls were more likely to have received the specific invitations than parents of boys.

Female students are usually perceived as the “ideal student” due to their level of compliance and willingness to please (Myhill, 2000). Boys, on the other hand, are more likely to avoid (or appear to avoid) academic work and less likely to comply with teacher requests to prevent being labeled as ‘feminine’ and to preserve their self-worth by avoiding failure (Jackson, 2003). Girls hold more positive attitudes toward homework and are less likely to associate self worth with efforts on homework and other academic tasks (Xu & Corno, 2006). For these reasons, female students in this study may have been more responsible about delivering the letters to their parents and returning signed letters to the teachers in order to ensure compliance with teacher directions. This finding points to a need for identifying more effective strategies (e.g., direct communication between teachers and parents) for reaching out to parents of male students at the middle school level.

Effect of ethnicity on parent attendance at school event. The effect of ethnicity, more specifically the effect of being the parent of a Hispanic student, was examined.

Membership in the Hispanic community was found to be a significant predictor of parent attendance at the event in two of the three schools. Specifically, Hispanic parents were less likely to attend the event than non-Hispanic parents at two of the three schools. This finding is consistent with previous research studies that have documented a general lack of Latino² parental involvement in schools. Previous studies have identified several factors that may be holding back Latino parents from being fully involved in the American schools, including dissonance in the beliefs and expectations of Latino parents and American schools, difficulties with communication, and teachers' and administrators' lack of understanding of the Latino culture (Osterling & Garza, 2004).

It has been found that Latino parental involvement in schools can be improved when the schools have an understanding of the cultural needs of this population and make an active effort to encourage their involvement in school (Lucas, Henze, & Donato, 1990). The differences in attitude toward Latino parental involvement across schools was noticed in the current study. Teachers and administrators at two of the three schools advocated for the

² "Hispanic" is a category that was created for government use in 1970 by the federal Office of Management and Budget (OMB) to refer to persons of Mexican, Puerto Rican, Cuban, Central or South American origin, irrespective of race. Therefore, data provided from participating schools used this term. However, research literature uses the term "Latino", as it is culturally and racially neutral and the preferred term of reference by the people of Latin American origin. (See Hayes-Bautista & Chapa, 1987 for more details on the use of terminology).

needs of the Latino parents by requesting that the invitations be translated into Spanish to communicate with parents who did not read English. On the other hand, the third school declined the researcher's offer to use Spanish invitations to reach out to the parents of this community. The administrator considered the Spanish-speaking students in the school capable of translating the English letters into Spanish for their parents. Not surprisingly, Latino parent attendance at the event at this school was significantly lower than the attendance by non-Latino parents.

Parental support has been found to have an indirect effect on school outcomes (e.g., time spent on homework, grades, behavior at school) for Latino students (Woolley, Kol, & Bowen, 2009). These researchers also discovered that the effect of parent support of Latino students' school outcomes is mediated by teacher support. For example, Latino parents tend to teach their children to respect the adults in the family and at school, which in turn helps the students build meaningful relationships with their teachers, which eventually affects their academic performance and behavior in school. These findings imply that a quality relationship between parents and teachers would be particularly beneficial for Latino students. However, differences in beliefs about parental involvement may serve to interfere with the development of a relationship between teachers and Latino parents. For example, whereas American school teachers often think about education in terms of academic outcomes, Latino families' concept of "*educación*" places equal emphasis on behavior, respect for adults, as well as schooling. Such differences in beliefs have led to parents' avoidance of contacts with school and teachers' reluctance to initiate communication with these families (Valdes, 1996).

Nevertheless, teachers' cultural/community awareness and school initiated efforts to involve parents have been found to be significant predictors of parental involvement even in schools that had an above average percentage of Latino student population (Marschall, 2006). Moreover, Latino families with high initial goal intentions initiated more communication with their children's teachers when they were prompted to use implementation intentions to do so (Arriaga & Longoria, 2011). In summary, although differences between mainstream U.S. culture and Latino culture poses some challenges to building relationships with these families, examples from extant literature show that Latino families have a significant influence on their children's education and are open to communication with the schools.

These findings, in addition to the findings of the current study, reiterate the importance of using more effective strategies to reach out to Hispanic/Latino parents. Communication with parents in this community must reflect an understanding of their culture. Moreover, expectations of parental involvement in the American culture, and ideas for working together as a team to help their children be successful in the school system must be explicitly stated to these parents.

Integrity of treatment. Teacher surveys were conducted to determine whether the procedures of the treatment were implemented consistently across schools. About 62% of surveys distributed across three schools were returned (recall that one school did not return any surveys). Despite the low response rate, results of the teacher survey showed that the components of the two treatment conditions were not implemented consistently across classrooms in the two schools. According to teacher self reports, providing daily reminders to

students to return the signed letters and their attendance at the meetings were found to be the most frequently violated components. Observational data gathered by the researcher also found inconsistencies with teacher attendance at the meetings.

Teacher absences at the meetings in particular may have had a significant adverse effect on the study. Teachers who attended meetings in each group volunteered to help the absent teachers with the tasks assigned to them, but because the absent teachers received instructions indirectly through their colleagues, the integrity of the information shared and the teachers' understanding of the procedures may have been compromised. In the specific child invitation condition, for example, some teachers sent letters home with children as soon as they completed drafting them. Therefore, the researcher could not make copies, as a result of which some students in the child invitation condition did not receive reminders. Also, a second teacher in the child invitation condition did not have her students write the letters in the homeroom period on the assigned day. Therefore, this teacher was given additional time to complete the task.

Administrative interference was an additional issue in the implementation of the study. For example, one of the measures taken to avoid crossover between conditions was to keep the teachers in one treatment condition blind to the interventions provided in the other treatment condition. This measure was implemented in two of the three schools. However, in the third school, the administrator gave away the details of the study to all the teachers involved in the treatment conditions. Also, upon the researcher's request, one of the three schools assigned one day of the week when all students in the child invitation group were to

draft their letters during the homeroom period. However, the administrators at the two other schools asked the teachers in the child invitation group to complete the task at their convenience. Finally, one school made an administrative decision to combine the school PTA meeting and open house with the Family Science and Math Night and did not inform the researcher until the night of the event. The administrator reported that she informed the parents about the additional events via the automated telephone message only. Thus, inconsistencies in the implementation of the treatments may have been a confounding factor in fully understanding the effect of the invitations on parental attendance.

Limitations

Treatment inconsistency. Despite efforts to keep the treatment as consistent across schools as possible, compromises were made in multiple situations. As previously noted, teacher absences at meetings held by the researcher, differences in teacher understanding of the procedures, and administrative interference with the procedures of the study were some of the major issues that may have had a significant negative impact on the study.

Variability in child invitations. Child invitations that were returned to the researcher were checked for compliance with the standard format of the letter. Because most middle school students tend to discourage family-school contact (Bouffard, 2009), the letters were also screened for incorrect information or for messages that dissuaded parents from attending the event. Examination of student letters revealed qualitative information on the variability of the written products. For instance, some students were unable to complete the letters despite the additional time provided for that purpose. Other students refused to write letters or

expressed their complaints about the school to convince parents not to attend the event. Still other students did not include important details such as the date and time of the event, which were completed by the research assistants during proofing. However, variability in the child invitations was not controlled for in this study.

Students as carriers of the letters. Specific invitations in all conditions were sent to parents with the students, which clearly is not the most effective way to communicate with parents. Epstein (1986) reported that parents receive few communications from teachers despite the large number of notices that are sent home. Thus, it remains difficult to confirm the delivery of communication when letters or notices are sent home with students. Therefore, in this study, assignment of a parent to a treatment group was not sufficient to ensure his/her attendance at the event. It was, of course, assumed that the children delivered the invitations to their parents.

External validity of the results. The schools included in this study constituted a convenience sample. A rural school system that approved the research proposal was chosen for the study, of which only three middle schools that volunteered to participate in the study were included in the sample. The three middle schools in the sample differed from each other on various characteristics, including the total number of students in the school, the population they served, and the percentage of economically disadvantaged students. For example, in one school, about 94% of the student population received free and subsidized lunch, whereas in another school only 33% of the students were economically disadvantaged. Given the rural culture of the region and the diversity in the socioeconomic status of the students and parents

in these schools, the results for each school are likely to be applicable to the given school only or to middle schools that share similar characteristics. For example, the findings of this study may not have significant implications for parental involvement in urban or economically advantaged middle schools.

Directions for Future Research

Larger sample size. The scope of the current study was limited in that the sample involved students and parents of three rather diverse middle schools only. This limitation yielded two consequences that are described in detail next.

First, a three-level hierarchical linear model was not possible with the small number of schools involved in the sample. Bryk and Raudenbush (1992) recommended at least 10 schools for every school level predictor used in the analysis. Adequate sample size at the school level will facilitate an analysis using a three-level hierarchical linear model and school level predictors. Such an analysis can yield information on the effects of school level variables (e.g., size of the school, number of students receiving free and subsidized lunch at the school) on parent attendance at school events. Secondly, the variability in the characteristics of the schools, as discussed in the Limitations section, further limits the generalization of the results of this study to other middle schools.

Furthermore, the use of an event that focused on Science, Math, and Engineering activities may have attracted parents of students with interests in these subject areas only. Thus, student interests may have served as an extraneous variable in this study. Therefore,

using events of different nature to replicate this study may be helpful in controlling for the effect of student interest in the event.

In summary, conducting a future study using schools that have similar characteristics would be helpful in understanding the school level effects on parent involvement. Moreover, varying the nature of the events will be instrumental in removing the effect of student interests in the event. Furthermore, conducting the study in a larger number of schools would provide the necessary statistical power to detect a school level effect, especially when using a multilevel approach to data analysis.

Baseline data. This study did not gather information on parent attendance at previous events at the participating schools, thus making it difficult to discern whether the treatment conditions made an improvement over prior practices. The schools simply were unable to provide valid data on parent attendance at prior school events. According to principal reports, Schools A and C historically have had extremely low parent attendance at school events, whereas School B claimed high parental involvement in school activities. Parental attendance at the Family Science and Math Night at the three schools was consistent with these reports. However, anecdotal information provided by principals, teachers, and parents at Schools A and C suggested that parent attendance at the given event was substantially higher than what these schools had seen in prior years. Therefore gathering data on parent attendance at similar events will be helpful in comparing the effect of the intervention to standard parental involvement practices at the schools involved.

A different approach to analysis. The current study used the three different conditions: general, teacher, and child invitations as predictors of parent attendance at a school event. However, it is important to understand the differential effect of the additional features of the specific invitations that were not present in the general invitation in bringing parents to the event. The personalized nature of the specific invitations, the source of the invitation, and the opportunity for parents to respond to the invitation all may have influenced the parents' decision to attend the event.

Separate analysis of the various components of the treatments would be helpful in providing empirical evidence for the effectiveness of a given type of specific invitation in influencing parent attendance. The effect of parent commitment to attend the event on parent attendance at the event was explored in this study. However, it would be helpful to understand the differential effect of each component of the treatment, such as mention of student strengths in the teacher invitation and opportunity for the parent to respond to the invitation.

Feedback for teachers and students. Including an opportunity to provide teachers with constructive feedback on the treatment implementation would likely be beneficial in increasing integrity in treatment conditions. In the current study, the researcher communicated with the administrator who in turn conveyed the messages to the teachers. Direct communication with the teachers may facilitate frequent checks on treatment fidelity and prompt feedback. For example, an email to the teachers the day before the due date of a

task such as teacher meetings, sending the letter home, and collecting signed letters may be helpful in improving teacher compliance with the instructions.

Similarly, providing feedback and opportunities to improve student letters would be helpful in keeping the letters closer to the standard format and in reducing variability in child invitations. For example, deviations from the standard letter, such as changes in the wording of the letter and not including important information such as date and venue in the letter, may be corrected through feedback. Moreover, more effective ways of delivering the invitations to parents should be explored to ensure delivery of treatment to a larger proportion of the treatment group.

Conclusion

Parental involvement in children's education plays an important role in children's academic and social success. The benefits of parental involvement have been documented, even in the adolescent years. However, parental involvement tends to decrease as children move on to higher grades in order to grant more autonomy to the rising adult even though students can benefit from parental guidance in academics and major life transitions even at that stage. This situation dictates the need for more effective strategies to promote parental involvement in adolescents' educational experiences.

This study aimed to understand the effect of different types of communication in predicting parental involvement in school. Although the obtained results will need to be validated through additional study, the findings have some implications for the nature of

school-to-home communication and may be used to modify and enhance commonly seen methods of home-school communication to increase parent participation in middle schools.

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APPENDICES

APPENDIX A1

Dear _____ Middle School Parents,

We're hosting _____ Middle School's **2011 Family Science and Math Night!** North Carolina State University has worked hard to put together an evening where you will get an idea of the ways your students are learning science and math at _____ Middle School. On behalf of the faculty, staff and students from the Colleges of Engineering and Education that have made this event possible, I say thank you for taking the time to have some science and math fun with your child.

The event begins at **6:00pm on Thursday, November 3rd** and will conclude by 7:30pm. It's in the _____ Middle School Cafeteria. At the event both parents and students will complete fun hands-on activities together. Many of the activities will blend the two together, in typical engineering fashion.

As a parent, just by being there you're doing a great thing for your child. Here are a few key points to remember:

- If you don't know, say so. Not knowing is okay—it provides an opportunity for you to model how to ask for help, research and/or get the information. It is a powerful thing for an adult to say to a child, "I don't know but let's find out." This lets them know it's okay to not know everything—we parents sometimes have a hard time with that one☺.
- Share your own learning difficulties with your child. When I was young, I was very slow at learning math and thought I was stupid. I now know I need to DO math to understand it—not dumb just different. Children's learning styles vary; if your child is struggling ask for help from the school about ways to help them learn the material a different way.
- Finally, at the end of the day when homework is running late it is very tempting to just provide the answer. It works for that day, but doesn't help your child in the long run. Take a few minutes to remind your child of some ways to try to solve the problem, such as working backwards, drawing a picture, guessing and checking possible answers, making a table, or looking for patterns. This is a long term way to help.

Again, we can't wait to see you. If you have any questions about The Family Science and Math Night, please do not hesitate to contact me at the email address below. Have fun tonight!

With the warmest regards,

Name

Coordinator of The Engineering Place at ____ University

email

APPENDIX A2

Mark your calendars!!

It's the **2011 Family Science and Math Night** at _____ Middle School.

When: Thursday, November 3, 2011 at 6pm

Where: _____ Middle School Cafeteria

What: Hands-on Science and Math Activities for Families

_____ University has worked hard to put together an evening where you will get an idea of the ways your students are learning science and math at _____ Middle School. At the event both parents and students will complete fun hands-on activities together. Many of the activities will blend the two together, in typical engineering fashion.

Hope you can make it!

APPENDIX B1

TEACHER INVITATION FOR FAMILY SCIENCE AND MATH NIGHT

Dear Teachers,

I am Bindiya Shajith, a graduate student in the School Psychology program at NC State. For my doctoral dissertation project, I am studying parent involvement in middle schools. To help me with my study, I would like for you to assist me in writing a customized invitation to the parents of all the students in your homeroom inviting them to the Family Science and Math Night in November. I thank you for your cooperation with this study. If you have any questions or concerns, please let me know.

Mobile number: _____; **Email:** _____

Format & Content of the Letter:

- Addressed to one/both parents using “Mr./Mrs./Mr. & Mrs. (Last Name)”
- Positive comments on child; emphasis on family’s role in child’s success (A list of positive comments will be given to the teachers. The teacher can then choose an appropriate comment for each child.)
- Information on event; personal invitation to event; statement of a general purpose for their participation in the event
- RSVP options
- Signature

Given below is an example of a teacher invitation:

Dear Mr. and Mrs. Doe,

This quarter is going well and we are glad to inform you that Joe has been working extremely hard and has shown significant progress in his academic performance. We have also noticed considerable improvement in his attitude toward school. His success in school work has also helped to boost Joe’s self esteem. Encouragement from both school and home will be helpful in maintaining his success in school.

As you may already know, our school’s Family Science and Math Night has been scheduled for the 3rd of November. At this event you will have a chance to do some fun, hands-on science and math projects with your kids. Faculty and students from the NC State Engineering department will be at our school that night to lead these activities. I would like to invite you to this event. I would encourage you to use this opportunity to help your child better understand middle school science and math concepts. The event will be held from 6:00 pm - 7:30 pm on the school premises. Please mark your calendars and we hope to see you on November 3rd.

Please let us know if you will be attending by choosing one of the following options.
_____ At least one of us will be attending the event with our child.
_____ I/we will not be able to make it this time.

Parent Signature _____

I hope to hear from you before October 25th. Thanks for working with us.

Sincerely,

Stacy Dolittle

(Joe's Homeroom Teacher)

Given below is the template of the letters that I will be drafting for you:

Dear (Mr./Mrs./ Mr. and Mrs. Parent Last Name),

This quarter is going well and we are glad to inform you that (*child's first name*) (*child's strength as listed in the student information form*). Encouragement from both school and home will be helpful in maintaining (*child's strength*).

As you may already know, our school's Family Science and Math Night has been scheduled for the 3rd of November. At this event you will have a chance to do some fun, hands-on science and math projects with your kids. Faculty and students from the NC State Engineering department will be at our school that night to lead these activities. I would like to invite you to this event. I would encourage you to use this opportunity to help your child better understand middle school science and math concepts. The event will be held from 6:00 pm - 7:30 pm on the school premises. Please mark your calendars and we hope to see you on November 3rd.

Please let us know if you will be attending by choosing one of the following options.
_____ At least one of us will be attending the event with our child.
_____ I/we will not be able to make it this time.

Parent Signature _____

I hope to hear from you before October 25th. Thanks for working with us.

Sincerely,

(*Teacher's name*)

(*Child name's*) Homeroom Teacher

APPENDIX B1.1

SPANISH TRANSLATION OF TEACHER INVITATION

Estimados «Parent_Last_name»,

Este semestre va bien. «child_first_name» «*child_strength*». Para mantener su éxito en sus estudios, es importante que «child_first_name» sea estimulado en la escuela y en el hogar. Como ya sabrán, nuestra escuela ha programado una noche de Ciencia y Matemáticas para las familias el 3 de Noviembre. Durante este evento, ustedes tendrán la oportunidad de divertirse participando en actividades de Ciencia y Matemáticas. Facultad y estudiantes de la Universidad de Carolina del Norte, Departamento de Ingeniería, estarán en la escuela esa noche para dirigir las actividades. Me gustaría invitarlos a este evento. Les animo a aprovechar esta oportunidad para ayudar a su niño a entender mejor la ciencia de escuela intermedia y los conceptos matemáticos. El evento se llevará a cabo de 6:00 PM - 7:30 PM en la escuela. Marque su calendario y esperamos verlo el 3 de Noviembre.

Por favor haganos saber si usted va a asistir eligiendo una de las siguientes opciones:

_____ Al menos uno de nosotros estará presente en el evento con nuestro hijo/hija

_____ Yo/Nosotros no podemos asistir este evento

Firma de padre _____

Espero su respuesta antes del 25 de Octubre. Gracias por colaborar con nosotros.

Sinceramente,

«teachers_name»
(maestro/maestra de «child_first_name»)

APPENDIX B2

Student Information Form

Please complete the following for each student in your homeroom.

(The information provided in this form will be used by the researcher to draft a customized letter for the parent of each student in your homeroom.)

Your Name:

Name of the Student:

Parent/Guardian: _____ (Mother)

_____ (Father)

_____ (Other)

Identify at least one characteristic that you think is a strength for this child. You may use the options provided as a guide. Use of the categories provided below is optional. Please provide a positive statement that best describes the given child.

___ Academic (e.g. "Name" made A's in all subjects this quarter; "Name" has shown significant progress in his academic performance)

___ Behavioral (e.g. "Name" is a pleasure to work with; "Name" is very respectful and always has a smile.)

___ Social ("Name" is a very sociable and helps friends with academic difficulties)

___ Work Ethic ("Name" has been working extremely hard)

___ Strength in a specific area ("Name's" talent in music is admirable and his interest in music should be encouraged.)

___ Other recent accomplishments (We are very excited that "name" made it on to the school soccer team.)

Provide your statement of the student's strength(s) here:

APPENDIX B3

INSTRUCTIONS FOR TEACHER INVITATION GROUP

You have been provided with two sets of letters. One is the first letter that goes home for signature (goes home on **Oct 18**) and the second set is for reminders (goes home on **Nov 1**). (It does not matter which set you use for first letter and reminder. They are both the same.)

Instructions:

First Letters

1. Sign the letters.
2. Distribute the letters to students on **Oct 18** for them to take home.
3. Collect letters with parent signature and save them for me. (Once you have all the letters, please turn them in to your principal and I shall collect them from her on November 3. If you have not received signed letters from all students, please turn in the ones you have latest by the afternoon of November 2.)

Reminders

1. Sign the second set of letters.
2. Distribute these letters to **all** students on **November 1** for students to take home.

Starting OCTOBER 19th, give the students at least one reminder a day about getting the letters back before OCTOBER 25.

APPENDIX C1

STUDENT INVITATION FOR FAMILY SCIENCE AND MATH NIGHT (Standardized Instructions)

Dear Teachers,

I am Bindiya Shajith, a graduate student in the School Psychology program at NC State. For my doctoral dissertation project, I am studying parent involvement in middle schools. To help me with my study, I would like for you to encourage every student in your homeroom to write a letter to their parent(s) or guardian(s) inviting them to the Family Science and Math Night in November. I thank you for your cooperation with this study. If you have any questions or concerns, please let me know.

Mobile number: _____; **Email:** _____

Instructions for Student Invitation

(Please read the instructions verbatim to the students in your homeroom.)

This year our school is conducting a Family Science and Math Night. This event will provide an opportunity for both students and parents to engage in some fun hands on activities together. The Family Science and Math Night will help parents and students better understand middle school math and science concepts. Today you will write a letter to your parents inviting them to attend the Family Science and Math Night in November.

(Distribute the student handouts)

First, we will go over the instructions in your handout. The first page in your handout gives you an example of a student invitation to the parent for the Family Science and Math Night.

(Read the sample letter given below)

Dear Mom & Dad,

Our school is holding Family Science and Math Night on Thursday, November 3, 2011, from 6:00 pm to 7:30 pm. At this event we will have a chance to do some fun hands on science and math activities together. Some professors and students from NC State University will be at our school that night to lead these activities.

I would like for you to come to this event because it will be fun and we will work on some cool science and math projects. The information at this event will be useful in helping me with my science homework and helping me prepare for the eighth grade EOGs. I hope we can make it to this event.

Please let my teacher know if we will be attending the Family Science and Math Night before October 25th, by choosing one of the following options:

_____ At least one of us will be attending the event with our child.

_____ I/we will not be able to make it this time.

Parent/Guardian Signature _____

Love,

Joe

Now you have to write a similar letter to invite your parents to the Family Science and Math Night. Page 2 provides specific instructions on how to draft this letter.

Here is a list of the important things to remember while writing your letter.

- 1. Address the letter to parent/parents/guardian using “Dear.” (For example: Dear Mom; Dear Dad; Dear Mom & Dad; Dear Grandma)*
- 2. Include the information on the event in the letter (Details of the event are given below)*
- 3. Invite your parent/parents/guardian to attend the event and explain why you think they should come.*
- 4. Sign your name at the end of the letter.*

Do you have any questions?

(Answer students’ questions if any)

You have to plan your letter before you start writing it. A short questionnaire has been provided to help you with the planning. First, the questionnaire gives information about the event:

Event: Family Science and Math Night

Date and time: Thursday, November 3; 6:00 pm to 7:30 pm

Location: _____ Middle School Cafeteria

Next, you have to decide who from your family you want to join you at the event. It may be your mom or dad or both mom and dad. Check one of the options given to you. If you choose the option “other,” please say whom you would like to invite in the space provided.

Do you have any questions?

(Answer students’ questions, if any).

Next, you have to think about reasons for your parents/guardians to attend this event. Why do you think they should attend? Some reasons have been given to you. You may choose these reasons or write your own reasons. Write as many reasons as you can think of.

Please use the space provided on page 3 to write your reasons. Do you have any questions?

(Answer students’ questions, if any).

On page 3 you have also been given a model for the letter. You may copy this model on to the attached blank sheet of paper. When you see parentheses in the model, remember to

insert your responses from the short questionnaire you used for planning your letter. Do you have any questions?

(Answer students' questions, if any).

Please write your full name and your homeroom teacher's name in the space provided on page 4. You may start working on your letter now. Remember to complete the short questionnaire for planning your letter before you start writing the letter. Write your letter on page 4. You may use both sides of the sheet if necessary. Please let me know if you have any questions.

APPENDIX C2

Student Invitation for Family Science and Math Night (Student Handout)

Our school will be holding a Family Science and Math Night on Thursday, November 3. Information about the event is provided below. You are to write a letter to your parents to ask them to attend this event.

Here is an example:

Dear Mom & Dad,

Our school is holding a Family Science and Math Night on Thursday, November 3, 2011, from 6:00 pm to 7:30 pm. At this event we will have a chance to do some fun, hands-on science and math activities together. Some professors and students from NC State University will be at our school that night to lead these activities.

I would like for you to come to this event because it will be fun and we will work on some cool science and math projects. The information at this event will be useful in helping me with my science homework and helping me prepare for the eighth grade EOGs. I hope we can make it to this event.

Please let my teacher know if we will be attending the Family Science and Math Night before October 25th, by choosing one of the following options:

_____ At least one of us will be attending the event with our child.

_____ I/we will not be able to make it this time.

Parent/Guardian Signature _____

Love,

Joe

Things to remember while writing the letter:

- 1. Address the letter to parent/parents/guardian using “Dear.” (For example: Dear Mom; Dear Dad; Dear Mom & Dad; Dear Grandma)**
 - 2. Include the information on the event in the letter (Details of the event are given below)**
 - 3. Invite your parent/parents/guardian to attend the event with you and explain why you think they should come to the event.**
 - 4. Sign your name at the end of the letter.**
-

Here is a short questionnaire to help you plan your letter before you start writing. Please complete this questionnaire before you start writing your letter.

Information on the event:

Event: Family Science and Math Night

Date and time: Thursday, November 3rd; 6:00 pm to 7:30 pm

Location: _____ Middle School Cafeteria

Who from your family do you want to join you at this event?

___ Mother

___ Father

___ Both mother and father

___ Other: _____

Why do you want them to attend this event? (Provide as many reasons as you can think of. The reasons stated below will help guide you.)

___ It will be a fun activity night

___ We will do cool science and math projects together

___ Science is included in the eighth grade EOGs. If you attend the Family Science and Math Night and learn more about middle school math and science concepts, you will be able to help me better with my homework in science and help me prepare for the EOGs in eighth grade.

___ You will get to meet NC State professors and students

Write your reasons here:

Letter Model

Now, write a letter to your parents about the event. A model for the letter is given below. Complete it by replacing the areas in parentheses with your information.

Dear (*the parent or guardian you want to invite*)

Our school is holding a Family Science and Math Night on Thursday, November 3, 2011 from 6:00 pm to 7:30 pm. At this event we will have a chance to do some fun hands on science and math activities together. Some professors and students from NC State University will be at our school that night to lead these activities.

I would like for you to come to this event because (*your reason given above*). I hope we can make it to this event.

Please let my teacher know if we will be attending the Family Science and Math Night before October 25th, by choosing one of the following options:

_____ At least one of us will be attending the event with our child.

_____ I/we will not be able to make it this time.

Parent/Guardian Signature _____

Love,

(*Your Name*)

Now write your letter on the blank sheet provided using the information stated in the planner. You may use both sides of the blank sheet if needed.

Your name: _____

Your homeroom teacher's name: _____

APPENDIC C2.1

Student Invitation in Spanish

Invitación de los estudiantes para la noche de Matemáticas y Ciencia con la Familia

(versión para los estudiantes)

Nuestra escuela estará llevando a cabo una noche de Ciencia y Matemáticas con la familia el jueves 3 de Noviembre. La información del evento está a continuación. Tu le escribirás una carta a tus padres o familiares para pedirles que vengan al evento contigo.

Aquí está un ejemplo:

Queridos Mamá y Papá:

Nuestra escuela estará llevando a cabo una Noche de Ciencia y Matemáticas con la familia el jueves 3 de Noviembre del 2011, de las 6:00 a las 7:30 pm. En este evento tendremos la oportunidad de hacer algunas actividades de ciencia y matemáticas juntos. Algunos profesores y estudiantes de la Universidad del Estado de NC vendrán a nuestra escuela esa noche para guiarnos en estas actividades.

Quisiera que tu vinieras a este evento porque será divertido y trabajaremos en actividades de ciencia y matemáticas muy interesantes. La información de este evento será muy útil para mi y me ayudará a preparar mis EOGs de octavo grado. Espero que puedas venir a este evento.

Por favor confirma a mi maestra/maestro que puedes asistir a la noche de Ciencia y Matemáticas con la familia antes del 25 de octubre, al seleccionar una de las opciones a continuación:

_____ Al menos uno de nosotros vendrá al evento con nuestro hijo

_____ Yo/Nosotros no podemos asistir este día.

Firma del padre o responsable _____

Con amor,

Joe

Cosas que debes recordar al escribir la carta:

1. **Dedícale la carta a tu(s) padre/padres y comienza con “Querido.” (Por ejemplo: “Querida Mamá”; “Queridos Mamá y Papá”; “Querida Abuela”.**
 2. **Incluye los detalles del evento en la carta (los detalles están a continuación).**
 3. **Invita a tu(s) padre/padres o familiar a asistir al evento contigo y explica por qué piensas que debe(n) venir al evento.**
 4. **Firma con tu nombre al final de la carta.**
-

Aquí tienes un cuestionario corto para ayudarte a planear tu carta antes de empezar a escribirla. Por favor completa este cuestionario antes de escribir tu carta.

Detalles del evento:

Evento: Noche de Ciencia y Matemáticas con la Familia.

Día y Hora: Jueves, 3 de Noviembre: 6:00pm a 7:30pm

Lugar: Cafetería de la escuela Secundaria _____

Quién de tu familia quieres que te acompañe al evento?

___ Mamá

___ Papá

___ Ambos, Mamá y Papá

___ Alguien más:

Por qué quieres que asistan al evento? (danos todas las razones que se te ocurran. Las que ponemos a continuación son una guía).

___ Será una actividad divertida

___ Haremos proyectos de ciencia y matemáticas muy interesantes

___ Ciencia es parte de los EOGs de 8vo grado. Si vienes a la noche de Ciencia y Matemáticas con la familia y aprendes más sobre los conceptos de matemáticas y ciencias de la escuela secundaria, me podrás ayudar mejor con mis tareas de ciencias y ayudarme a preparar mis EOGs en el octavo grado.

___ Conocerás a algunos de los estudiantes y profesores de la Universidad de NC.

Escribe tus razones aquí:

Queridos (*tu familia que quieres te acompañe al evento*):

Nuestra escuela estará llevando a cabo una Noche de Ciencia y Matemáticas con la familia el jueves 3 de Noviembre del 2011, de las 6:00 a las 7:30 pm. En este evento tendremos la oportunidad de hacer algunas actividades de ciencia y matemáticas juntos. Algunos profesores y estudiantes de la Universidad del Estado de NC vendrán a nuestra escuela esa noche para guiarnos en estas actividades.

Quisiera que tu vinieras a este evento porque (*Por que quieres que asistan al evento*). Espero que puedas venir a este evento.

Por favor confirma a mi (*maestra/maestro*) que puedes asistir a la noche de Ciencia y Matemáticas con la familia antes del 25 de octubre, al seleccionar una de las opciones a continuación:

_____ Al menos uno de nosotros vendrá al evento con nuestro(a) hijo(a)

_____ Yo/Nosotros no podemos asistir este día.

Firma del padre o responsable _____

Con amor,

(*tu nombre*)

Ahora escriba tu carta en la próxima página. Incluye la información planeado en la hoja de blanco. Si es necesario, puedas usar ambos lados de la hoja.

Your Name: _____

Your Homeroom Teacher's Name: _____

APPENDIX C3

CHILD INVITATION GROUP INSTRUCTIONS

You have been provided with two sets of letters. One is the original letter written by the student and the second set is photocopies of the student letters. The original letter goes home for signature (on **Oct 18**) and the photocopies are for reminders (goes home on **Nov 1**).

Instructions:

Original Letters

1. Distribute the letters to the students on **Oct 18** for them to take home.
2. Collect letters with parent signature and save them for me. (Once you have all the letters, please turn them in to your principal and I shall collect them from her on November 3. If you have not received signed letters from all students, please turn in the ones you have latest by the afternoon of November 2.)

Reminders

1. Distribute the second set of letters (photocopies) to **all** students on **November 1** for them to take home.

Starting OCTOBER 19, give the students at least one reminder a day about getting the letters back before OCTOBER 25.

APPENDIX D

PARENT SURVEY

Please tell us how you came to know about this event. This survey is conducted for research purposes.

Child's Name: _____

Child's Homeroom Teacher: _____

How did you know about this event? (Please check ONLY ONE option)

____ Telephone message from school/ flyer from school

____ Letter from your child's homeroom teacher

____ Letter from your child

APPENDIX E

North Carolina State University DEBRIEFING FORM

This form is valid from June 14, 2011 to June 14, 2012.

Title of Study: Bringing Parents to School: The Effect of Invitations from School, Teacher, and Child on Parental Involvement in Schools.

Principal Investigator: Bindiya Shajith

Faculty Sponsor: Dr. William Erchul

Dear Parents and Teachers of _____ Middle,

I am a doctoral student at North Carolina State University in the Department of Psychology. I would like to inform you that I have been conducting a study for my dissertation research at the _____ Middle School. The study included the teachers, students, and parents of _____ Middle as participants. I would like to thank all of you for your time.

What is the purpose of this study?

This is an exploratory study aimed at comparing the effectiveness of different types of invitations on parental involvement in school activities. The three types of invitations that were compared were general invitation from school (information in a monthly newsletter from the school), specific invitations from teachers (such as a personalized letter from the teacher), and specific invitations from child (an informal letter from the child). It is hypothesized that child invitation will be the best predictor of parental involvement in schools followed by teacher invitation. General school invitation is hypothesized to be the least effective of the three types of communication in influencing parents' decision to become involved in school activities.

What happened in the study?

The homerooms in the school were assigned to three different conditions:

- I- General school invitation only
- II- General school invitation with specific teacher invitation
- III- General school invitation with specific child invitation

All parents of students in _____ Middle School were sent the flyer that contained information on the Parent Involvement Night- Science in November. Automated voice messages about the event were also left on the students' home phones. This was considered Condition I.

One third of the homerooms in the school were assigned to condition II- General school invitation with specific teacher invitation. Teachers of these homerooms sent a personalized invitation to the parents informing them about the Parent Involvement Night- Science in November and requesting their participation, in addition to the flyer and the automated phone message.

One third of the homerooms in the school were assigned to condition III- General school invitation with specific child invitation. Teachers in these homerooms helped the students write an informal letter to their parents or guardian informing them about the Parent Involvement Night- Science in November and requesting their participation. This invitation was in addition to the flyer and the automated phone message.

On the day of the Parent Involvement Night- Science on November 3, 2011, all parents were asked to complete a short survey that required the parents to identify their child, the child's homeroom teacher, and how they knew about the event. A child's name was required for the researcher to identify the group to which the child was assigned.

Risks

There should be no risks to you or your child from this research. If you don't wish to participate in the research, you may request that your and your child's data be withdrawn from the study and destroyed.

Benefits

This study will help determine effective measures to promote parental involvement in schools. The finding will be beneficial to the participating teachers, students, and parents. Moreover, the findings of this study may be used to increase parental involvement at other schools.

Confidentiality

The information collected in the study records will be kept strictly confidential. Data will be stored securely in password protected files on the researcher's computer. No reference will be made in oral or written reports that could link you to the study. Parents have been asked to write their child's name on the survey form to match the child to the assigned experimental or control group. However, the identifying information will not be entered into the database and will be destroyed soon after data entry.

Why was an informed consent not obtained prior to the study

- Informed consent from parents prior to the study would have resulted in parental awareness about the details of the study. I feared that awareness about the study in itself could have increased parental involvement in the school and thus interfered with the study.

Right to Withdraw

You may request to withdraw and remove from the record any information pertaining to you or your child. Requests will be received for a month after which the identifying information will be destroyed.

What if you have questions about this study?

If you have questions at any time about the study or the procedures, you may contact me, principal investigator Bindiya Shajith.

What if you have questions about your rights as a research participant?

This study has received clearance from the research ethics committee known as the Institutional Review Board (IRB) at NC State. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514).

APPENDIX F1

TEACHER SURVEY

(Teacher Invitation)

Please complete this short questionnaire and return to your principal. Do not include any identifying information. The response to this survey will remain anonymous and will not be used in any way for evaluation purposes.

Questions	Yes	No
1. Did you attend these meetings with the researcher?		
a. Meeting 1- Introduction and instructions		
b. Meeting 2- Researcher collected materials form teachers		
c. Meeting 3- Researcher distributed letters and reminders to teachers		
2. Did you complete the teacher forms and provide identifying information and strengths for each child?		
3. Did you distribute the letters to the students on November 5?		
4. Did you remind the students at least once every day about returning the signed letters starting November 6?		
5. Did you distribute reminder letters (copies of the original letter) to the students on November 16?		
6. Did you collect signed letters from the students for the researcher?		

Thank You!

For questions or concerns, please contact:

Bindiya Shajith
School Psychology Program
Department of Psychology
North Carolina State University
Ph: _____

APPENDIX F2

TEACHER QUESTIONNAIRE

(Child Invitation)

Please complete this short questionnaire and return to your principal. Do not include any identifying information. The response to this survey will remain anonymous and will not be used in any way for evaluation purposes.

Questions	Yes	No
1. Did you attend the meetings with the researcher?		
a. Meeting 1- Introduction and instructions		
b. Meeting 2- Researcher collected materials from teachers		
c. Meeting 3- Researcher distributed letters and reminders to teachers		
2. Did you follow the standardized instructions provided by the researcher to administer the intervention (i.e., read the instructions verbatim to the students when instructing them to write the letter)?		
3. Did you collect the letters from the students once they completed writing the letter?		
4. Did you distribute the letters to the students on October 18?		
5. Did you send home ONLY the page from the student handout where the students had handwritten their letters (page 4 of the student handout)?		
6. Did you remind the students at least once every day about returning the signed letters starting October 19?		
7. Did you distribute reminder letters (copies of the original letter) to the students on November 1?		
8. Did you collect signed letters from the students for the researcher?		

Thank You!

For questions or concerns, please contact:

Bindiya Shajith

School Psychology Program

Department of Psychology

North Carolina State University

Ph: _____