Training parents in consequence delivery and to initiate school communication using an electronic home-based reinforcement program to modify students' classroom behaviors

Kashunda Lynn Williams
Louisiana State University and Agricultural and Mechanical College, kvicks1@lsu.edu

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TRAINING PARENTS IN CONSEQUENCE DELIVERY AND TO INITIATE SCHOOL COMMUNICATION USING AN ELECTRONIC HOME-BASED REINFORCEMENT PROGRAM TO MODIFY STUDENTS’ CLASSROOM BEHAVIORS

A Dissertation

Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy

in

The Department of Psychology

by
Kashunda L. Williams
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ABSTRACT

Existing research has shown that when parents and teachers work together, everyone benefits; students tend to earn higher grades, perform better on tests, attend school more regularly, have better behavior, and show more positive attitudes toward themselves and toward school (Canter, 2004). This study builds upon these findings by examining the effects of parent training and a parent implemented intervention (parent initiated home-school note via email) on students’ maladaptive classroom behavior and teachers’ ratings on Achenbach’s Teacher Report Form and Conner’s Ratings Scales. In addition, the effects of emailing parental performance feedback on parents’ adherence to intervention procedures (parent initiated home-school note via email) and intervention acceptability as rated by parents and teachers were examined. Study participants were 46 parent-child dyads. Findings of the current investigation suggest that both treatment conditions (i.e., Treatment Alone and Treatment plus performance Feedback) were associated with increases in students’ observed on-task classroom behavior. Teacher ratings of the TRF suggest that student internalizing behaviors, externalizing behaviors, and total problems decreased in both treatment conditions and increased in the No Treatment Condition. A significant difference between treatment conditions was found in the number of notes emailed and parents’ treatment integrity. Overall, the findings of the current investigation suggest that students’ classroom behavior can be influenced by a parent initiated intervention that utilizes computer technology, but additional research is clearly needed in this area. This investigation extends the literature by incorporating computer technology in a parent initiated treatment program using home-based reinforcement.
INTRODUCTION

Classroom teachers are faced with a number of obstacles throughout the day. Some of these concerns easily can be addressed through the utility of the skills most teachers poses, while others require external aid. Students’ classroom behavior problems are an example of an area in which teachers frequently require assistance. Children have always had behavioral and emotional problems, and currently their problems are receiving focused attention. Research has shown that well-established disruptive behavioral patterns during early school years dramatically increase the risk for later antisocial behavior (Huesmann, Erron, Lefkowitz, & Walder, 1984; McCord, 1991; Tremblay, Pihl, Vitaro, Dobkin, 1994). Furthermore, disruptive behavior within the classroom setting is predictive of less academic engagement time, lower grades, and poor performance on standardized tests (Shinn, Ramsey, Walker, Stieber & O’Neill, 1987; Wentzel, 1993).

The behavior of children in the classroom setting repeatedly has been altered by a variety of procedures. The results of research have documented the effectiveness of the behavior modification approach in a wide variety of settings (e.g., classrooms) with very diverse child populations (Bellack & Hersen, 1990). Behavior modification is a process in which an observable behavior is changed by systematic application of techniques that are based on learning theory and experimental research (O’Leary & O’Leary, 1976). Behavior modification is generally known for its ability to reduce or eliminate maladaptive behaviors and establish adaptive behavior. Examples of classroom behaviors which have been modified are verbal (e.g., talking out), motor (e.g., out of seat), or a combination of verbal and motor behavior. Techniques of behavior modification are usually most effective when they are employed by the people who initially request that the behavior be changed and who are usually the key people in
the child’s environment (O’Leary & O’Leary, 1976). Most frequently, it is the parent or teacher who executes most of the behavior change procedures. Teachers and parents are the individuals who provide many of the antecedent and consequent events related to the child’s behavior and thus are in the most advantageous position to alter the child’s behavior.

Although there is a large literature on the treatment of behavioral problems in elementary-age children, much of the formal empirical work has been conducted in clinical settings (e.g. Kazdin, 1988; Mash & Barkley, 1989). Students’ behaviors at school are what bring them to the attention of professionals in the first place in many cases (Evans & Nelson, 1977), yet the availability of treatment models that are school-based is still quite limited (Tuma, 1989). Moreover, there is a need for investigations conducted in schools that address students’ classroom behavior problems.

The attempt to treat children within the school environment has been successful with the direct modification of classroom behavior (Baer, Wolf, & Risley, 1968). Generally this has entailed “training” teachers to manage reinforcement of contingencies more effectively (e.g. Webster-Stratton, Reid, & Hammond, 2001). Today, basic principles of classroom management are better known and widely taught in teacher preparation courses. Yet, many children in the early elementary school years still exhibit diverse problem behaviors that challenge teachers’ skills. Perhaps on account of these mounting pressures, teachers are likely to attribute blame for the child’s challenging behavior to parents and may accept little responsibility for changing their own practices (Power & Bartholomew, 1985).

One area that could benefit from more empirical investigation is the treatment of classroom behavior problems that incorporate parents in the management of students’ classroom behavior. There is a shortage of intervention strategies for children with behavior problems
which incorporate both home and school influences. The concept of a home-school partnership to address behavioral concerns is not new. In fact, in educational circles home-school partnerships are identified as successful remedies for a range of educational needs and concerns (e.g., Christenson, 1995; Schorr, 1988; Zigler & Freedman, 1987). Some of the few empirical studies that support these claims involve home-based reinforcement for school performance. A common form of home-based reinforcement is the school-home note (a.k.a., daily report card) program. The use of home-based reinforcement programs to modify children’s classroom behavior problems are becoming increasingly popular (Witt, Elliott, Gresham, & Kramer, 1988). Home-based reinforcement of school behavior is proving to be an efficient method for motivating behavioral change (Evans, Okifuji, Engler, Bromley, & Tishelman, 1993). It has been used successfully with children in group homes, with children in special classes, and with entire regular and special classrooms.

Limitations associated with the use of home-based reinforcement are a lack of or poor school-home communication and/or lack of or poor parental skills (i.e., consequence delivery). Treatment integrity may be an additional limitation to the success of school-home note programs used in vivo, but no empirical evidence has been found that supports this hypothesis. School-home communication can have many forms; nonetheless, poor communication between teachers and parents is common. Poor communication can be attributed to lack of initiation, lack of time, or restricted modes of communication among others. Despite good school-home communication, poor consequence delivery can negatively affect the success of a behavior modification intervention. Appropriate consequence delivery is essential for the success of a behavior modification intervention. Although parents may be willing to participate in intervention strategies, they must have the necessary skills to be effective participants. A home-school
partnership that addresses the above limitations should prove to be successful in the reduction of classroom behavioral concerns.
REVIEW OF LITERATURE

School-Home Communication

The relationship between student success in school and parent involvement has been well documented (e.g., Epstein, 1987; Flaxman & Inger, 1991; Henderson, 1988; Mannon & Blackwell, 1992; U.S. Department of Education, 1991). Based on a review of 66 studies, reviews, reports, and books, Henderson and Berla (1994) conclude that parents can make critical contributions to student achievement, from preschool through high school. They also concluded that efforts to improve children’s outcomes are much more effective if they include a family element. For instance, research data indicate that when parents are involved in schooling, students show improvements in grades, test scores, and behavior (Steinberg, Elem, & Mounts, 1989). However, optimal parental involvement and support require clear and regular communication and interaction between home and school (Epstein, 1987). Thus, it is essential that classroom teachers and parents communicate clearly and effectively about policies, required practices, mutual expectations, student performance, and other related concerns.

Ideally, school-home communication takes place when the school transmits a message to the home and that message is received as intended by the sender (Gotts & Purnell, 1986). Home-school communication, on the other hand, refers to messages sent by the home to the school. Public-Law 94-142 outlined both the right and responsibility of parents to engage in educational decision making with their children’s teachers and related personnel (Federal Register, 1977, 1981). This legislation contributed to a quantifiable increase in school-home communications (Jayanthi & Sawyer, 1995). As a result of the emphasis placed on teacher and parent communication, a growing concern about the quality and quantity of communication developed.
Professionals at all levels of education have begun to recognize the importance of involving parents in the educational process. School psychologists interested in ways to enhance and improve students’ school success often consider parent involvement (Christenson, Rounds, & Gorney, 1992). Models and strategies for parent and teacher involvement in planning, problem solving, treatment, and general communication have become more common in the professional literature (Lillie & Place, 1982). Several strategies for improving home-school communication have been suggested in the literature (e.g., Berger, 1991; Epstein, 1987; Turnbull & Turnbull, 1990; Walker, 1989). For example, various written models of communication that schools could use to convey information to parents have been proposed. These modes of communication include newsletters, handbooks, letters and notes, suggestion boxes, report cards, bulletins, and newspapers. In addition, conferences, workshops, support groups, telephone calls, IEP meetings, home visits, classroom visits, and telephone answering machines have been suggested as means of facilitating dialogue between parents and teachers (Patton, Jayanthi, & Polloway, 2001). Other possible solutions involve having conferences in the evening, or providing release or flex time from work for parents and teachers to communicate with each other.

Most of the time school-home collaboration is necessary to accomplish more general, ongoing tasks, such as completing homework. However, at times it has a very specific focus, such as dealing with a behavior problem that requires the involvement of both school personnel and the parents. Teachers utilize the traditional techniques mentioned above to conduct effective school-home collaborative practices. The most common of these methods include parent-teacher conferences, telephone contacts, and written communication. These methods are usually school-initiated, but it should be noted that many of these techniques could be easily initiated and sustained by parents.
The parent-teacher conference is one of the most common methods of collaboration. Conferences are typically called for one of three primary reasons: administrative purposes (e.g., assessment of eligibility issues); crisis situations (e.g., disciplinary actions); and routine progress reporting, which is typically held at the end of grading periods. The proper implementation of conferencing can contribute significantly to maintaining positive home-school collaboration activities. Unfortunately, the skills of successful conferencing are often overlooked in teaching training programs (Bryan, Sullivan-Burstein, & Mathur, 1998).

Another traditional method of communicating with families is through the telephone. Typically used in times of crisis, the telephone serves the function of communicating important information. Chapman (1982) conducted an experiment to determine if recorded messages could be used to increase parent-teacher communication and improve students’ spelling performance in a special education classroom. The effects of the recorded message on scores made on daily spelling tests were analyzed. Results showed that the availability of recorded messages resulted in improved spelling performance by all participants. A more recent study by Cameron and Lee (1997) utilized the telephone as a means of communication between school and home. They investigated the use of a voice-mail telephone system to enhance home-school communication with families and teachers at both early and later elementary school levels. Participants were one kindergarten teacher, one fifth grade teacher, and 24 families (12 students in each class). Families were randomly assigned to either the voice-mail intervention group or the nonintervention comparison group. Parents in the voice-mail intervention group received a brief demonstration of the operation of the voice-mail telephone system, and were provided with written instructions regarding the technology for reference purposes. Teachers sent group and individual messages to participants relating to a variety of classroom issues. Home-school
communication perceptions were measures before and after the intervention through both parent and teacher questionnaires (which the investigators created) and focus-group discussions. The intervention ran for three weeks. A 2x2x2 (voice-mail vs. comparison, grade levels, & pre- and post-intervention) analysis of variance yielded a significant effect for grade level F(1,56)=41.73 p<.01), but there were no main effects for intervention condition or time of inquiry. The authors concluded that their findings showed an enhancement in both the quality and quantity of teacher-parent communication. In contrast to the above studies, school-home communication is not always successful. In some cases teachers are often inaccessible after normal school hours. Also, the opportunity for teachers to call a large numbers of families on a regular basis is limited.

Another commonly used technique is written communication (Patton et al., 2001). In the past, written communication has meant a note or progress report. The usual purpose of the written message is to convey information, inquire about a problem that has arisen, or inform about ongoing progress. Many schools send regular newsletters to families as a way continually providing information to them. Also, school-home notes, commonly referred to as daily report cards, are used as a form of communication between school and home. These written forms of communication are typically sent via students through their classroom/homeroom teacher. The research associated with the use of school-home notes are discussed later in the paper.

Although school-home collaboration has its benefits, there are problems associated with communication between teachers and parents. Jayanthi et al. (1995) conducted open-ended surveys and in-depth individual interviews with parents of students with disabilities, classroom teachers, and special education teachers about the impact of parent and teacher communication on the homework achievement of students with disabilities. They identified several communication problems among parents and teachers. The following are reported
communication problems that exist between home and school: failure to (a) initiate communication, (b) communicate often enough (c) communicate early enough, (d) communicate consistently enough, (e) follow through with communication, and (f) communicate in a clear and useful manner. In addition, five areas of contributing factors for these communication problems were identified: (a) parents and teachers lack sufficient time and opportunity to communicate; (b) parents and teachers lack knowledge, understanding, and/or awareness necessary for communication, (c) parent, teacher, and student attitudes, abilities, and behaviors hinder communication, (d) parent and teacher perception hamper communication; and (e) other factors restrict communication (e.g., lack of telephones, parental priorities, individualized education program (IEP) meetings).

The existence of these communication problems between home and school finds further support in the data of two survey studies (Epstein, 1986; U.S. Department of Education, 1991) on parent involvement. Epstein (1986) found that a number of parents were excluded from some of the most traditional communications (e.g. conferences) from the school and that most parents were not involved in detailed or frequent communications with teachers about their child’s progress or program. In the national education longitudinal study (NELS) of 1988 (U.S. Department of Education, 1991), the majority of the parents surveyed (65%) noted that they never talked to school officials about their child’s academic or behavior performance. Clearly, strategies that will improve home-school communication are needed.

Since this investigation used a school-home note intervention as a means to improve home-school communication, the literature related to school-home notes is discussed below in further detail.
School-Home Notes

A school-home note intervention (also known as daily report card or home-based reinforcement program) is described by Kelley (1990) as a viable intervention that requires parents and teachers to work together toward alleviating children’s academic or behavioral classroom problems. This intervention minimizes the time required of teachers while providing parents with daily feedback on their child’s performance. In addition, school-home note interventions increase parent opportunities to give effective consequences to their children. This is accomplished by relieving the teacher of many of the aspects of managing a behavioral system, and by placing some of the responsibility for implementation of the intervention on the parents and even on the child (Barkley, 1989). A school-home note intervention is appropriate when parental cooperation is available, that is, caregivers must consistently provide appropriate consequences based the notes. To be effective, school-home notes should provide caregivers with enough information about the child’s classroom performance so that appropriate consequences can be delivered at home (Broughton, Barton, & Owen, 1981).

The general procedure for constructing a school-home note program begins with a parent-teacher conference at which target behaviors are specified and goals are defined. These target behaviors are usually monitored by the teacher and the delivery of consequences are usually based on their occurrence. More often, consultation with the teacher occurs to determine the relevant target behaviors for a particular child. Next, a monitoring interval is selected. The monitoring interval can range from once every few days to as frequently as every 10 minutes. A typical school-home note intervention requires the child to be evaluated by his/her teacher on a daily basis. Once the target behaviors have been identified, responsibilities of the parent, teacher, and child are agreed upon. A reporting sheet listing the behaviors is prepared, and the teacher
monitors and rates the child’s behavior at the prescribed interval on the sheet. The results of the
daily evaluations are sent home with the child. Consequences are provided by the parents at
home, contingent upon the child’s meeting certain prearranged criteria (Ayllon, Garber, & Pisor,
1975). Once the procedure is implemented, frequent verbal feedback and praise should occur,
and if behavior improves, the note should be faded gradually and discontinued. School-home
notes can be used alone, but are typically integrated into a treatment package to serve as
communication devices.

There are several reported advantages of using school-home notes to reduce classroom
behavior problems (Atkeson & Forehand, 1979). Potential benefits include parent and teacher
collaboration, parental feedback on both positive and negative student behaviors, it requires
minimal teacher time, teachers do not have alter their routines, it provides few related problems,
and students have access to a wider variety of reinforcers when compared to school-based
reinforcement. Furthermore, Elliott, Busse, and Shapiro (1999) hypothesized that the small time
commitment required for implementation enhances the probability for treatment acceptability
and integrity. They also stated that because most school-home note procedures emphasize
positive behaviors, their use may increase parental praise and attention, which may enhance
children’s self-esteem and self-efficacy. Finally, increased parental involvement may enhance
treatment maintenance and generalization. School home notes may be appropriate for children
with severe behavior problems and/or academic deficits or for children who live in highly
dysfunctional families (Kelley, 1990).

Positive effects of the school-home note intervention have been demonstrated across a
variety of subject and treatment parameters. The literature suggests that the school-home note
procedures employed across studies have varied substantially. Kelley (1990) reports the
following as areas that include variation: specificity of the note, student age, target behaviors, consequences, parental involvement and training, maintenance of behavior change, and social validity.

**Specificity.** Broughton et al. (1981) hypothesized that it was very likely that some level of detail is necessary for school-home notes to be effective. In addition, he stated that treatment outcome may be differentially affected by the level of detail in the note. Studies employing school-home notes vary in the level of detail of the note. For example, Karraker (1972) provided parents with global descriptions of children’s behavior, whereas Ayllon et al. (1975) provided parents with only nonspecific letters on days when their children exhibited low levels of disruptive behavior. Both studies produced results that supported the use of school-home notes. Further research is needed to determine if the specificity of information contained in the school-home note contributes to its efficacy and if so how.

**Student Age.** School-home notes have been used to address academic and behavior problems of students of various ages. Target populations range from preschoolers and kindergarteners (McCain & Kelley, 1993; Budd, Green, & Baer, 1981; Lahey, Gendrich, Gendrich, Schnelle, Gant, & McNeese, 1977), elementary-aged children (Seay, Fee, Holloway, & Giesen, 2003; Middleton & Cartledge, 1995; Kelley & McCain, 1995; McCain & Kelley, 1994; Imber, Imber, & Rothstein, 1979; Saudargas, Madesen, & Scott, 1977; Todd, Scott, Bostow, & Alexander, 1976), and junior and high school students (Alexander, Corbett, & Smigel, 1976; Heaton, Safer, Allen, Spinnato, & Prumo, 1976; Schumaker, Hovell, & Sherman, 1977). It should be noted that the majority of reported studies have been conducted with elementary aged students. Positive results associated with the implementation school-home notes
have been reported across age groups. Further research is needed with adolescents as participants.

**Target Behaviors.** A wide range of academic and behavior problems have been modified through the use of school-home notes. Many studies using school-home notes have centered on academic behaviors. Some researchers have targeted academic permanent products, such as the amount or quality of completed class work (Blechman, 1981; Dougherty & Dougherty, 1977; Imber et al., 1979; Saudargas et al., 1977). Others have found improvements in staying on task (Coleman, 1973) or studying (Bailey, Wolf, & Phillips, 1970). For example, Drew (1982) examined the effects of a daily report card procedure designed to increase the completion and accuracy of in-class assignments in two male third graders. The participants were described as having a behavioral history of difficulty in completing seatwork. The use of the procedure produced immediate significant changes in rates of both completion and accuracy for both participants. Results suggested that parents in a “normal” environment can consistently and effectively implement a daily report card procedure to increase the completion and accuracy of classwork of their children.

A study by Witt and Elliott (1983) suggested that home-based contingencies for academic performance can indirectly decrease disruptive behavior. Subjects were three fourth-grade boys who displayed high rates of inappropriate behavior and performed poorly on in-class assignments. Teachers rated each child daily on accuracy of class work performance and parents provided praise and privileges to children at home based on good ratings. In a multiple baseline design, the home reinforcement program was shown to decrease inappropriate behavior and improve academic performance for all three children.
A number of studies has evaluated the efficacy of home-school note interventions for school behavior problems (Abramowitz & O’Leary, 1991). Disruptive behaviors such as talking out (Dougherty & Dougherty, 1977), inappropriate behavior during naptime (Lahey et al., 1977), and classroom rule violations have been targeted. Stage and Quiroz (1997) reviewed interventions that decrease disruptive classroom behavior in public education settings. They reported that school-home notes were widely used to manage student behavior, and that this type of intervention is effective in the management of many student behaviors. Middleton and Cartledge (1995) used parent notes to enhance maintenance and generalization of social skills in five boys.

McCain and Kelley (1993) likewise demonstrated the effectiveness of this approach using home-based reinforcement to improve classroom behavior of an ADHD preschooler with moderately severe symptoms. The participant was a 5-year old boy enrolled in a private preschool. Target behaviors were on-task, disruptive, and activity changes. The student’s behavior was recorded using a 15-second time sampling procedure. A reversal (ABAB) design was utilized to evaluate the effectiveness of a school-home note system in improving the participant’s inattentive, hyperactive, and disruptive behavior. Phases were baseline (control) in which the participant’s teacher was instructed to respond as usual to his inappropriate behavior, and school-home note intervention (treatment). The student received a school-home note during each treatment phase of the reversal. The note required the teacher to evaluate behavior and parents to provide consequences at home based on these evaluations. The results showed increased attentiveness, decreased disruptiveness, and decreased activity changes in the participant during treatment conditions.
The Kelley and McCain (1995) study used school home-notes to address both academic and behavior problems. They examined the effects of a school-home note with and without a response cost component in five inattentive children for increasing academic productivity and appropriate classroom behavior. Participants were five elementary school-aged children attending regular education classes. A reversal design with alternative treatments was used to compare the effects of a school-home note with and without response cost for increasing children’s on-task behavior and class work completion. Both notes required teachers to evaluate students and required parents to provide consequences on a daily basis. The notes differed as to whether reprimands and response cost were included. The results indicated that on-task behavior and academic work completion improved in all five elementary school-aged children. The majority of students achieved greater improvements in on-task behavior with the response-cost component added to the school-home note.

**Consequences.** Kelley (1990) states that with the school-home note system, appropriate parental consequences are perhaps the most important aspect of the procedure. Consequences in past research literature have included response costs, praise, tangible rewards, and various combinations of these procedures. Many rewards have been used, including allowances, later bedtime, and activity reinforcers. Consequences have been offered to children regardless of satisfactory or unsatisfactory classroom performance. Investigations have combined praise with tangible rewards for good school behavior (Alexander et al., 1976; Blechman et al., 1981). Although most studies include parental praise as a component, several investigators used praise as the only consequence for appropriate behavior in the classroom (Dougherty & Dougherty, 1977; Lahey et al., 1977). In these studies, parents were instructed to praise their children contingent on satisfactory school reports. Both of these studies were conducted with entire
classrooms of children exhibiting no serious behavior problems. For example, Lahey et al. (1977) showed that praise alone delivered by parents contingent upon receipt of daily report cards was sufficient to improve the behavior of mildly disruptive kindergarten students. The investigators recommended that parents praise their children for satisfactory performance according to the school-home note and that they avoid punishing poor performance. The procedure used in this study was effective in increasing students’ appropriate behavior.

In contrast, Schumaker et al. (1977) also demonstrated the efficacy of a home-based reinforcement intervention involving daily reports, praise, and home privileges in a multiple baseline across subjects design. The participants were male junior high school students identified as having problem behavior. The investigators compared the effects of praise alone with those of praise plus privileges on classroom behavior and academic performance. It was found that praise alone was ineffective. In addition, these investigators showed that although praise alone may result in poor improvements in school behavior, the greatest improvements are achieved when contingent privileges are provided at home. In fact, on most days during the praise-only condition, the subjects did not bring the card home. However, in the introduction of praise and privileges, the students’ classroom work and adherence to classroom rules improved substantially. Barkley (1987) hypothesized that the discrepancy in the results of these studies is probably related to the different ages of the participants (i.e., parental praise is more likely to function as a powerful reinforcer for younger children than for older students) and to behavior problem severity (i.e., more severe behavior problems may require more concrete backup reinforcers).

Rosen, Gabardi, Miller, and Miller (1990) showed that the combination of reinforcement plus response cost may be more effective than reinforcement alone in home-based reinforcement
programs. More recently, McCain & Kelley (1994) compared the effectiveness of a school-home note with and without response cost on the disruptive and on-task behavior of three preadolescents. The participants were three male students attending fourth grade in a public school. In both conditions (i.e., school-home note with and without response cost), the teacher evaluated students daily and the parents provided their sons with rewards based on achieving satisfactory performance. During the school-home note with response cost intervention, the teacher accompanied her reprimands with a point loss and this information was conveyed to the parents via the note home. A multiple baseline design across subjects with alternating treatments was utilized to compare the effectiveness of school-home notes with and without response cost. During treatment, the two interventions were randomized across days with all three subjects receiving the same condition each day. The results clearly documented the superior effectiveness of school-home notes with response cost over an alternative school-home note program. For all participants inclusion of response cost was associated with marked improvements in attentiveness and stabilization of disruptive behavior as compared with a traditional school-home note.

**Parental Role and Training.** Parents’ role in administering the school-home note intervention can be considered minimal when compared to their involvement in purely home-based contingency interventions. School-home notes are designed to modify behaviors that occur in the classroom, thus parents are limited to providing consequences based on teacher evaluations. In past studies, school-home notes have been used successfully after only minimal contact with, or training of, the parents. Several investigators simply provided parents with a letter explaining the purpose of the procedure and specific strategies for providing consequences at home (Dougherty & Dougherty, 1977; Karraker, 1972; Lahey et al., 1977; Saudargas et al.,
1977). For example, Ayllon et al. (1975) had a single 2-hour meeting with parents and in some cases only telephone contact. Parents were informed about the school-home note intervention for their children, and they were told to use their own judgment in selecting consequences that had worked for them in the past.

In some studies, however, researchers have provided parents with relatively extensive training with effective consequences (Bailey et al., 1970; Blechman et al., 1981; Schumaker et al., 1977). Schumaker, Hovell, and Sherman (1977) completed a study involving a relatively complex school-home token economy system. They sent a clinician to students’ homes to draw up lists of privileges and to negotiate systems for exchanging points earned at school for privileges at home. The parents of these adolescent boys were provided weekly home visit training sessions throughout the study, and twice weekly telephone contact was made with each family.

Other studies have assessed the influence of the amount and type of parent training on note effectiveness. Karraker (1972) trained parents of second-graders in the use of school-home notes through either a descriptive letter, a 15-minute conference, or two 1-hour training sessions. Regardless of training conditions, all parents were told to provide positive consequences when their children performed satisfactorily and to avoid commenting when notes were unsatisfactory. The results indicated that all training methods were effective in increasing the children’s mathematics performance. However, because of the small number of children in each condition and the variability of baseline performance, differential treatment effects could not be ascertained.

Blechman, Kotanchik, and Taylor (1981) also assessed the influence of parental involvement on note effectiveness. They examined the effects of school-home notes with second
through sixth grade students in 17 classrooms. Children from each classroom who did inconsistent math work were assigned randomly to one of three conditions: (a) note home (N=27), (b) “family problem solving” (N=20), and (c) control (N=16). An additional 51 students with consistent math performance were selected as a comparison group. The home-school note intervention consisted of a “Good News Note” for which the children received praise or reinforcement when their accuracy on math assignments equaled or surpassed their baseline means. For the note-only condition, parents of children were sent a brief letter explaining the purpose of the note and ways to reward satisfactory performance. Children and parents assigned to the family problem-solving intervention were taught to negotiate contingency contracts in a family problem-solving session. In the one-hour training session, parents were guided through the process of contingency contracting and providing reinforcers for the Good News Notes. Participants in the problem-solving condition also received weekly phone calls to discuss compliance with the procedures. In each of the conditions, no note was sent home if a child did not reach criterion, and a “No Work Assigned” note was sent if class did not have math work on a given day.

The results indicated that both experimental conditions were effective in decreasing the variability of math performance (i.e., task completion) compared to the control and comparison conditions. Math accuracy increased only in the problem-solving conditions and decreased for the other conditions. In addition, only the children who received the family problem-solving treatment demonstrated response maintenance on days in which the treatment was briefly withdrawn. These results indicate that school-home notes were effective in stabilizing math performance but not math accuracy, whereas the problem-solving intervention was effective in stabilizing and enhancing math performance. These results, however, should be interpreted with
caution because of the design of the study. Specifically, it is unknown which component of the
problem-solving intervention affected math performance, and only the problem-solving
condition used treatment integrity and plan implementation checks. Finally, although the results
were statistically significant, the actual mean percentages of change in scatter and accuracy were
small (<10%).

It is unclear whether children of parents who have undergone training benefit more from
a school-home note intervention; thus, more research is needed.

**Maintenance.** Several authors have noted the importance of employing treatment
maintenance techniques in the use of home-based reinforcement (Atkeson & Forehand, 1979;
Broughton et al., 1981). In spite of this emphasis, few investigators have addressed issues of
treatment maintenance and fading. Dougherty and Dougherty (1977) faded daily cards to cards
describing a full week’s performance, and Bailey et al. (1970) faded daily cards to biweekly
ones. Lahey has recommended a specific fading procedure, whereby daily reports are replaced
by weekly cards and then phased out completely. Other studies have used this fading technique,
although data on its effectiveness typically are not provided.

Some authors have briefly discussed informal maintenance procedures. For instance,
Imber et al. (1979) used praise cards “intermittently” after the study was completed. The authors
reported that the procedure effectively maintained student performance, although no data were
reported. Because follow-up data were collected in few studies, it is difficult to assess the long-
term success of school-home notes. It is also difficult to examine the issue of response
maintenance because most studies concluded at the end of the semester or school year, and later
student progress was reported. Little is known about maintenance in studies without fading
techniques. More systematic research is needed to assess the importance of fading or other
maintenance strategies, and to answer questions regarding long-term effects and generalizability of home-based reinforcement procedures.

**Social Validity.** The social validity of school-home notes has been examined with respect to acceptability. Teachers rated home-based reinforcement as more acceptable than token economies, timeout, and ignoring, and less acceptable than praise or response cost (Witt, Martens, & Elliott, 1984). Students (i.e., 5th to 9th graders) preferred home-based praise over home-based reprimands, teacher praise, and teacher reprimands (Turco & Elliott, 1986). One shortcoming of the literature in the area of school-home notes is its lack of evaluation of parents’ treatment integrity. That is, are parents appropriately delivering consequences to their children? Rarely do researchers report data on parents’ commitment to providing consequences. In the study by Budd et al. (1981), parents were asked to record consequences on the back of the report card and return it to school. Budd reported that all but one of the 16 parent participants appropriately provided consequences at least 88% of the time. This study is an exception, and more research is needed to evaluate the treatment integrity of parental implementation.

Another element of school-home note interventions that lacks empirical support is the selection of appropriate rewards for children. Care and ingenuity should be exercised when selecting maximally motivating rewards. Several examples of frequently used rewards are: extra television time, a special meal or dessert, spending play time with a parent, and money. In addition to daily rewards, children are sometimes given weekly rewards when four out of five daily cards indicate improvement. Examples of weekly rewards are family trips, dinner at a restaurant, and a visit to a friend’s home. No single type of reward program can suffice for all children, but more research is needed in this area to answer questions about reward selection.
Computers as a Means of Communication

Today written notes are being partially replaced with e-mail messages, but there are few empirical studies investigating the use of computers as a means of school-home communication. Consulting practitioners rarely, if ever, suggest the use of computers as tools for communication with consultees and clients. Over the years practitioners have incorporated many technological innovations into their practices for example the telephone, one-way mirror, videotape, and pager. Each innovation has presented practitioners with new challenges, and each has enhanced their ability to care for clients.

Computer technology is being integrated into professional practice. However, with some noteworthy exceptions, on-line interventions have been adopted infrequently (Farmer & Muhlenbruck, 2001; Wade, Wolfe, & Pestian, 2004). Wade et al., (2004) developed a web-based intervention for pediatric traumatic brain injury (TBI) and examined its feasibility for participants with limited computer experience. Six families, including parents, siblings, and children with TBI were given computers, web cameras, and high-speed internet access. Weekly videoconferences with the therapist were conducted after participants completed on-line interactive experiences on problem solving, communication, and TBI-specific behavior management. Families were assigned to videoconference with NetMeeting (iBot cameras) or ViaVideo. Measures included a survey assessing satisfaction with the intervention protocol and materials, the Web Site Evaluation Questionnaire, and a seven-item version of the Agnew Relationship Measure. Data were analyzed using frequency analyses and descriptive statistics. Participants ranked the web site and videoconferences as moderately to very easy to use. ViaVideo participants rated videoconferencing significantly more favorably relative to face-to-face meetings than did NetMeeting participants. Both the web site and videoconferencing were
rated as very helpful. All families demonstrated improved outcomes on one or more target behaviors, including increased understanding of the injury and improved parent-child relationships. All parents and siblings and all but one child with TBI said they would recommend the program to others. They concluded that a face-to-face intervention can be successfully adapted to the web for families with varied computer experience.

Comparisons of on-line interventions with traditional face-to-face therapy indicate that on-line treatment results are comparable in outcomes while possessing several advantages over conventional treatment (Greist, 1998; Marks, Shaw, & Parkin, 1998; Sturges, 1998). Accessibility is a key advantage since on-line services that do not involve a consultant can be accessed from home during nonworking hours. Additionally, clients can review on-line materials repeatedly without involving a consultant’s time. Participation in on-line assessment and treatment also report less stigma and greater perceived confidentiality (Gega, Mark, & Mataix-Cols, 2004). In fact, there is some evidence that individuals may prefer the neutrality of computer-provided services to face-to-face interaction with a therapist (Hewson, Laurent, & Vogel, 1996; Johnson, 1998).

On-line or computer-mediated approaches have not been widely used with families, although existing studies indicate considerable potential (Glueckauf et al., 2002; Ritterband et al., 2003). Glueckauf and colleagues reported that home-based family videoconferencing, phone conferencing, and face-to-face meetings were equally effective in reducing the frequency and severity of problem behaviors in teenagers with epilepsy. Similarly, Ritterband et al. found that an intensive on-line family intervention for encopresis was successful in significantly reducing the frequency of soiling. These limited findings suggest that on-line interventions can be effectively used with families as well as individuals.
Although the use of new technologies is attractive in terms of immediacy and efficiency, such use poses a dilemma, as a significant number of families may not have access to the technology. Other potential drawbacks of computer assisted treatment are lack of computer skills, discomfort with technology, and lack of personalization. Most of these limitations can be addressed. According to the 2000 census, 41.4% of households have internet access, and public computers are available in community libraries. Also, by providing face-to-face contact at the beginning of treatment practitioners can establish rapport with clients (Maheu, 2003). In addition, many educational institutions have spent large amounts of money and energy to wire classrooms to the Internet, and are devoted to getting schools "connected" (Wexler, 2000). As a result, computers are common in the classroom and are beginning to emerge as a new form of school-home communication. Thus, computers have the potential to provide some benefit and especially may be helpful with problems where access to care is limited and modes of communication are restricted.

Families of children with classroom behavior problems particularly may be able to benefit from an on-line intervention. Common barriers to treatment such as time, distance, and the unavailability of practitioners, teachers, and parents are eliminated when home-school communication is provided on-line. Moreover, families can communicate at any time during the course of treatment.

Parent Training

In parent training programs parents are taught how to alter reinforcement contingencies that support antisocial behavior. That is, they are taught how to give clear commands, establish rules, reinforce compliance, follow rule infractions with mild punishment, and use specific strategies such as token economies and time-out. Parent training is based on the social learning
theory and based on the well-documented finding that parents of children with behavior
problems are deficient in parenting skills (Mash & Barkley, 1998). These deficiencies include
over reliance on critical and punitive approaches, inconsistency in implementing consequences
for negative behavior, permissiveness, and low rates of praise and positive reinforcement for
prosocial behavior (Hughes & Cavell, 1994). Parent training focusing on instruction-giving
skills, delivery of praise contingent upon compliance, and implementation of a brief chair time-
out contingent upon noncompliance repeatedly has been shown to result in desirable changes in
child behavior (e.g., Forehand & McMahon, 1981; Peed, Roberts, & Forehand, 1977).

One major focus of parent training has been the management of child behavior problems
(Mash & Barkley, 1998). An early parent training program was developed by Hanf (1969, 1970;
Hanf & Kling, 1973), and was specifically designed to treat noncompliance in younger children
(3-8 years of age). Noncompliance is regarded as a keystone behavior in the development and
maintenance of behavior problems. This program has been modified and subsequently evaluated
by several independent groups of clinical researchers, including Forehand and his colleagues
(Forehand & McMahon, 1981), Webster-Stratton (1996), and Eyberg (e.g., Eyberg, Boggs, &
Algina. 1995). Example behaviors such as acting-out, tantrums, hyperactivity, and school
attendance problems have been targeted and reduced via parental applications of learning
principles (Bernal, Linnert, & Schultz, 1980). Data reported indicate that training parents as
behavior therapists is an effective treatment strategy for child deviant behavior (Berkowitz &
Graziano, 1972; O’Dell, 1974).

The efficacy of parent training with parents of children with conduct disorders is
supported by research spanning three decades (Kazdin, 1985). Patterson and his colleagues were
pioneers in developing and evaluating parent training programs (Patterson, Chamberlain, & Reid,
1982). Their approach to parent training was based on social learning principles, especially on altering parent delivered contingencies for antisocial and prosocial behaviors. Other researchers have made modifications to this approach and contributed to the systematic evaluation of parent training approaches with parents of children with behavior problems (Webster-Stratton, 1984). These programs of research have greatly increased the knowledge of who responds to parent training, mechanisms responsible for improved child functioning, and the impact of modifications in treatment procedures on client outcomes.

Parent training interventions have involved several instructional techniques, have been implemented with individual families or with groups of families, and have been successfully utilized in the clinic and home settings (Mash & Barkley, 1998). A variety of instructional techniques have been compared. Empirical support for training methods involving written manuals (O’Dell et al., 1982), modeling (Flanagan, Adams, & Forehand, 1979; O’Dell et al., 1979; O’Dell et al., 1982), role playing (Flanagan et al., 1979), feedback (Budd, Leibowitz, Riner, Mindell, & Goldfaarb, 1976; Doleys, Doster, & Cartelli, 1976), modeling plus manual (O’Dell et al., 1982), and modeling plus discussion (Webster-Stratton, 1981) is readily available. Limitations associated with these techniques are discussed later in the paper. In 1982, O’Dell investigated the acquisition of parenting skills via four training methods. The training models utilized a written manual, an audiotape, videotaped modeling, and live modeling and rehearsal with a child. Outcome was assessed via an in-home observation of parental reinforcement skills. It was found that all training methods were superior to a minimal instruction control group. The audiotaped manual was less effective than the written manual or live modeling with rehearsal. There were no significant differences between the written manual or live modeling with rehearsal. There were no significant differences among the written, videotaped, or live modeling
rehearsal training methods. Parent reading level and demographic characteristics were significantly related to training effectiveness in the control group and in groups receiving written or live modeling plus rehearsal training. These variables did not affect outcome in the group receiving videotaped modeling training.

Both individual and group formats of parent training have been found to be effective (Barkley, 1987). Group parent training curricula often have an educational focus and entail a variety of instructional techniques (e.g., lectures, modeling, and discussion) designed to enhance parents’ knowledge, attitudes, and skills (Dangel & Polster, 1988). Group parent training approaches can be categorized as follows: (a) didactic methods that rely on oral or written input from trainers; (b) didactic methods that employ visual input, primarily modeling; and (c) interactive methods that use direct shaping of parent behavior. Of these three methodologies, interactive modes are most effective even with virtually no accompanying didactic instruction (O’Dell, 1985). The parent training literature indicates that didactic instruction in various combinations with modeling, role playing, and feedback can be used to provide effective training in the management of child behavior (Anderson & Kratochwill, 1988).

A competency-based training paradigm is an alternative to a didactic strategy. Within a competency-based approach, parents must demonstrate skill mastery in order to complete training. A competency-based training model involves the identification of target skills; development of task analyses, operational definitions, and corresponding assessment procedures; specification of learner objectives; evaluation of the trainees’ performance in targeted skill areas prior to, throughout, and following training; and individualized remedial training, if necessary. This approach allows for rigorous evaluation of training procedures. Wolfe, Sandler, and Kaufman (1981) utilized selected aspects of a competency-based approach to promote
acquisition of child management skills among abusive parents. They reported significant differences between pre-test, post-test, and follow-up measures for parenting skills. Detailed information regarding skill acquisition, such as the number of trials necessary for each parent to reach a proficiency criterion, however, was not presented.

Several studies have documented marked improvements for children and parents in parent training programs relative to treatment control conditions. These benefits are evident on measures of parental and child behavior and parents’ perceptions of child adjustment. Although the short-term efficacy of behavioral parent training in producing changes in both parent and child behaviors has been demonstrated repeatedly (e.g., O’Dell, 1974; Serketich & Dumas, 1996), the generalization of those effects has been less consistently documented. Parent training interventions for the treatment of children with behavior problems have demonstrated their generalizability and social validity to varying degrees. Some demonstrations have provided substantial evidence, while others have not provided any evidence. Training results in significant decreases in aggressive and non-compliance behaviors, and those parents who demonstrate the greater understanding of social learning principles show the greatest generalization and maintenance of effects (McMahon & Forehand, 1984).

In a review of behavioral parent-training generalization and maintenance research, Sanders and James (1983) concluded that only limited aspects of these important variables have been addressed. Although the efficiency of parent training has been supported on the basis of generalization over time and maintenance of training effects; generalization across settings, behaviors, and individuals has not been extensively examined. The predominant behavioral training generalization strategy within the field appears to remain “train & hope” (Sanders & James, 1983; Stokes & Baer, 1977).
Despite the overall effectiveness of parent training, there are limitations associated with it. For example, 30% to 40% of treated parents report that children’s problems remain within the clinical range after treatment, and 25% to 50% of teachers report that children’s externalizing problems are within the clinical range (Webster-Stratton, 1990). Parents who are at least likely to respond positively to parent training are those who are experiencing significant stress. Mothers who are socially isolated, with few sources of social support outside the family, children whose problems are more severe, and parents who exhibit psychopathology are less likely to benefit from parent training (Webster-Stratton, 1985). These characteristics also predict attrition (Kazdin, 1990).

Rationale and Purpose of the Current Study

Challenging behavior in the classroom setting is an enduring societal concern. Treatment of classroom behavior problems that incorporate parents in the management of students’ classroom behavior has a moderate empirical research base; however, the concept of a home-school partnership to address behavioral concerns is not new. There is a current increase in the collaboration between teachers and parents, and this increase can possibly be contributed to teachers’ legal and professional obligation to include parents in the educational process (Kelley, 1990). Moreover, there has been an increase in the school’s interest and involvement in helping parents aid their children succeed in school (Kroth, 1975). Parent involvement has been identified as a critical variable in successful treatment programs, and schools throughout the US are currently receiving active encouragement to involve parents in their school programs. Given the importance of parental involvement in a student’s educational program, it is essential to include parents in intervention programs that would promote long-term improvement in their child’s school-related behaviors. To be more effective home-school communicators, parents
must be more literate about school-home communication practices (Purnell & Gotts, 1991). That is, fundamental to the success of all school-home collaboration efforts is an effective communication component.

In addition to competence in school-home communication practices, the correct implementation of treatment procedures is also fundamental to a program’s success. Treatment integrity refers to the extent to which a treatment is implemented as intended. One shortcoming of the literature in the area of school-home notes is its lack of evaluation of parents’ treatment integrity. That is, are parents appropriately delivering consequences to their children? Rarely do researchers report data on parents’ commitment to adhering to home-school communication treatment procedures (Kelley, 1990). In contrast, there is empirical support for techniques that increase teacher treatment integrity of classroom intervention procedures (Mortenson & Witt, 1998; Noell, Duhon, Gatti, & Connell, 2002; Noell et al., 2005). For example, studies that utilize performance feedback show consistent effects on treatment implementation (Harchik, Sherman, Hopkins, Strouse, & Sheldon, 1992). Performance feedback refers to a method of providing information or knowledge of processes and results to promote transfer or maintenance of skills and behaviors (Hawkins et al., 1992).

Mortenson and Witt (1998) investigated the effects of performance feedback on the implementation of a reinforcer-based classroom intervention. They measured the degree to which four classroom teachers implemented a pre-referral intervention as designed. Results implied that performance feedback increased teacher implementation of pre-referral intervention in 3 of the 4 cases. Also, Noell et al. (2002) examined general education teachers’ implementation of behavior management interventions following consultation. Initial implementation varied across the four teacher participants, but became unstable or exhibited a downward trend in the absence
of follow-up (performance feedback). Performance feedback was delivered in the form of brief meetings. During these meetings intervention materials were reviewed. For 3 of 4 teachers the brief meetings were associated with improved implementation. Performance feedback resulted in high stable implementation. As follow-up meetings were provided less often, implementation remained generally high, but was somewhat less stable. Noell et al. (2005) provide another example of the effects of performance feedback on treatment implementation. They examined the implementation of treatment plans following consultation in three conditions; traditional behavioral consultation, consultation with an emphasis on the commitment to implement, and consultation with performance feedback. Interventions were implemented for forty-five elementary school students. Performance feedback was associated with superior treatment implementation and child outcomes when compared to the two other conditions.

This review suggests that there is a need to address student behavioral concerns within the school setting, that parental involvement can be a critical variable in intervention programs, that school-home notes are an effective form of school-home communication, that technological innovations have been successful when integrated in treatment programs, that parent training can result in desirable changes in child behavior, and that the addition of performance feedback can affect treatment integrity. This study builds upon these findings by examining the extent to which a parent initiated intervention involving an electronic home-school note reduces students’ maladaptive behavior; when parents are trained in home-school communication techniques and consequence delivery. This investigation extends the literature by incorporating computer technology in a parent initiated treatment program using home-based reinforcement.

The purpose of this investigation is to extend the literature by empirically examining an intervention for problematic student behavior in the classroom that incorporates parents into the
intervention through electronic communication. This was accomplished by determining what
effect parent training and a parent implemented intervention (parent initiated home-school note
via email) have on students’ maladaptive classroom behavior and teachers’ ratings on
Achenbach’s TRF and Conner’s Ratings Scales. Also, the study examined the effect of emailing
parental performance feedback on parents’ treatment integrity (parent initiated home-school note
via email) & treatment acceptability.
METHOD

Participants and Settings

The participants in the study were 46 volunteer parent-child dyads. Dyads were recruited from two schools located in the Southeastern and Mid-western United States. Both schools served kindergarten through fifth grade students, with one providing public education and the other private. Student participants were enrolled in general education, 1st through 5th grade, and the mean grade level was 2.96 (two in 5th, two in 4th, thirty-eight in 3rd, four in 1st). Information relating to demographic characteristics was collected for parents and students. Students who completed the study included 37 males and 9 females. Of these participants 40 were Caucasian (non-Hispanic) and 6 were African American.

Classroom teachers referred student participants exhibiting behavioral concerns. Teachers referred approximately 130 students of which 104 consented to participate (56% did not qualify for participation). Participating student came from 17 classrooms across both schools (each classroom represented by one teacher). Following referral and after meeting criteria for inclusion (described below), students were randomly assigned to one of three treatment conditions. The chi-square test for independence revealed no significant differences among conditions based on gender, race, and grade level with p at the .05 level. That is, the proportions of the above listed characteristics in each condition were not significantly different. Preliminary ANOVAs found no differences in student outcomes for either teacher rated behavior change or change in directly observed behavior based on gender, grade level, and race with p at the .05 level.

Parents who completed the study included 16 males and 30 females. Of these participants 40 were Caucasian (non-Hispanic) and 6 were African American. Thirty-three parents were currently married and 13 were categorized as other. All parent participants were currently
employed and categorized their highest level of education as at least having some college. The chi-square test for independence revealed no significant differences among conditions based on gender, race, marital status, employment status, and level of education with p at the .05 level. That is, the proportions of the above listed characteristics in each condition were not significantly different. Preliminary ANOVAs found no differences in student outcomes for either teacher rated behavior change or change in directly observed behavior based on parent gender, race, marital status, employment status, and level of education with p at the .05 level.

Parent training occurred in meeting rooms located on school grounds. Intervention procedures were implemented by parents in the participants’ homes, which included consequence delivery. Teachers implemented intervention procedures within their classrooms.

Screening, Target Task, and Materials

Following teacher nomination, all parents were sent a letter explaining the purpose of the study and requesting their participation. The letter explained why their child was nominated for intervention, described parent training opportunities, explained qualifications for participation, and solicited consent. A parent and student demographic form and a screening questionnaire were attached to the letter. If the parents decided to participate in the study, the letter instructed them to complete the demographic form and screening questionnaire. Parents were asked to indicate (1) if they would like to participate in an intervention that would improve communication with their child’s teacher concerning their child’s classroom behavior, (2) if their child takes any medication(s) or is enrolled in any special education programs, and (3) if they have a personal email account and daily access a computer. In addition to this, parents were asked to provide a phone number and email address for future scheduling purposes.
Endorsements on the screening questionnaire determined initial inclusion or exclusion from the experiment. Dyads that endorsed questions 1 and 3 as “yes” and question 2 as “no” moved to the next screening phase. Dyads with any other endorsements were excluded. These criteria aided in selecting parents who were interested in improving home-school communication relating to their child’s classroom behavior. The exclusion of participants who were taking medication or receiving special services allowed for more experimental. In the next phase, three direct observations of students’ classroom behavior were completed. The three observations occurred over at least two days, with at least 15 minutes between each observation. The three fifteen minute classroom observations occurred during varying times of the day, and were conducted using partial interval recording. Data collected from classroom observations served as a pretreatment comparison. After meeting criteria for inclusion, dyads were randomly assigned to one of three conditions: delayed treatment control, treatment, and treatment with email feedback. Parents were notified of their assignments via a letter sent home with their child. This is described in more detail below.

An intervention handbook was given to parents in the treatment and treatment with email feedback conditions. The handbook contained materials summarizing the home-school communication and behavior management training. Also included was education material related to home-school communication and consequence delivery, a list of specific parent responsibilities, a task analysis of the intervention, a bag of tangible and edible rewards, and contact information (e.g., student’s classroom teacher & the investigator).

Measures

Direct Student Observations. The primary measure for this study was observable changes in students’ classroom behavior. The investigator conducted three direct observations of each
student’s classroom behavior prior to and at the conclusion of the three week intervention period. The three in class observations occurred during varying times of the day and were conducted using partial interval recording. A percentage of on-task behavior was obtained by dividing the number of marked intervals by the total number of intervals and dividing by 100. The mean score for each student was recorded.

Child Behavior Checklist: Teacher Report Form 6-18 (CBCL-TRF). The TRF (Achenbach, 1991) is a 118-item rating scale designed to obtain teachers’ reports of children’s academic performance, adaptive functioning, and behavioral/emotional problems. This instrument can either be self-administered or administered through an interview. The CBCL is used to measure a child's behavior, changes in behavior over time, and/or changes in behavior following a treatment. Items are rated as not true, somewhat or sometimes true, or very true or often true and received a corresponding score of 0, 1, or 2 points. Teachers rate the child for how true each item is now or was within the past two months. The TRF is scored on separate profiles for boys and girls. The TRF scoring profile provides raw scores, $T$ scores, and percentiles for Academic Performance, Total Adaptive Functioning, the eight cross-informant syndrome scales and six DSM-oriented scales, Internalizing, Externalizing, and Total Problems. The 1991 profiles of the TRF have been normed from a national sample of 2319 children. The sample was selected to be representative of the 50 states with respect to SES, ethnicity, region, and urban-suburban-rural residence. The TRF has a test-retest range of 0.62 to 0.92, inter-rater reliability of 0.60, and an internal consistency range of 0.72 to 0.95. The TRF was administered to teachers prior to and at the conclusion of the three week intervention period. The TRF was administered to examine teacher perceived changes in student classroom behavior.
**Conners’ Rating Scales- Revised (CRS-R).** The CRS-R uses observer ratings and self-report ratings to help assess attention deficit/hyperactivity disorder (ADHD) and evaluate problem behavior in children and adolescents (Conners, 1997). The test can be used for screening, for treatment monitoring, as a research instrument, and as a clinical diagnostic aid. There are three versions (e.g., parent, teacher and adolescent self-report) that have both short and long forms. In addition, there are three screening tools that offer the option of administering a 12-item ADHD Index or the 18-item DSM-IV Symptom Checklist, or both. Test format is paper and pencil, and administration is 20 minutes or less. Norms were based on a sample of 8000 plus children and adolescents, males and females ages 3 to 17. Minority group samples were represented. Data were from over 200 schools in over 45 states and 10 provinces throughout the US and Canada for parents, teacher and self-reports. Standardized data were based on the means and standard deviations for groups of children with ADHD and children without psychological concerns. There is evidence for the reliability of the CRS-R. For the long form the coefficient alphas for internal reliability range from .728 to .942, and .857 to .938 for the short form. These ranges indicate that the CRS-R subscales are accurate in measuring the constructs they were intended to measure. The CRS-R is also considered valid. It has convergent validity with the CDI. In addition, correlations between the teacher, parent, and adolescent ratings, indicate that the CRS-R can identify childhood and adolescent ADHD behavioral problems and psychopathology. Validity studies are continuing. The CRS-R short form was administered to teachers prior to and at the conclusion of the three week intervention period. The CRS-R was administered to examine teacher perceived changes in student classroom behavior.

**Home-School Notes.** Home-school notes are a commonly used intervention for increasing communication between school and home. This procedure has been shown to be
effective in increasing a variety of appropriate classroom behaviors in elementary and middle school aged participants (McCain & Kelley, 1993). The home-school note utilized in the study was created by the investigator. A completed note included a parent description of the previous consequence provided, parent comments, teacher ratings of student behaviors, and teacher comments. Appendix A contains an example of the home-school note used in this investigation.

All intervention conditions included the completion of parent initiated home-school notes. The purpose of the home-school note was to monitor parent initiated communication about student classroom behavior between home and school. The electronic home-school notes were collected during the time of the intervention. That is, parents were asked to carbon copy, CC, all home-school correspondence to the investigator daily. The number of home-school notes sent was recorded. Notes were scored as present or absent.

**Treatment Integrity.** Completing the intervention procedures resulted in the production of a daily permanent product; an email. Parents participating in treatment conditions were asked to carbon copy, CC, all electronic correspondence/emails with their child’s teacher to the primary investigator. The primary investigator monitored and logged parents’ treatment integrity by reviewing parents’ electronic correspondence with the classroom teacher. Using the investigator’s data, daily treatment integrity was calculated as the number of intervention steps completed divided by the number that the intervention required. For example, for each parent participating in a treatment condition, the investigator would record (1) if a note was sent for the day, (2) if the note contained the previous day’s consequence, and (3) if the consequence matched the teacher rated behavior. The investigator divided the score earned by the maximum probable score; three. The resulting percentage was recorded as the parent’s daily integrity score. The investigator would repeat this process each day for all participants in treatment conditions.
At the conclusion of the intervention, each parent’s mean integrity score was calculated and served as their overall intervention treatment integrity score. The investigator summed each parent’s daily integrity score, and divided the total by 15 (the number of days in the intervention). The resulting percentage was recorded as the parents’ overall integrity score.

**Treatment Acceptability Ratings.** Each teacher and parent participating in a treatment condition was asked to complete the Intervention Rating Profile – 15 (IRP-15; Martens, Witt, Elliott, & Darveaux, 1985) prior to and at the end of the intervention. The IRP-15 asks teachers and parents to rate 15 evaluative statements regarding the extent to which a treatment is acceptable, appropriate, and likely to be efficacious (Noell et. al., 2004). The IRP-15 has been reported to have high internal consistency (Cronbach’s alpha = .98) and to have high validity coefficients with related measures ($r = .86$; Witt & Martens, 1983). The IRP-15 was administered to examine the extent to which teachers and parents perceived that treatment plans as acceptable, to examine the relationship between acceptability and implementation, and to examine how implementation would influence its acceptability (Noell et. al., 2004).

**Procedure**

Following teacher nomination and parental consent, three direct observations of students’ classroom behavior was conducted. Next, qualifying parent-child dyads were randomly assigned to one of three conditions: delayed treatment control, treatment, and treatment with email feedback. Up to ten students from each classroom were allowed to participate. When multiple students from one classroom participated, each student was randomly assigned to a condition independently.

Next, teachers were asked to complete a pre-intervention acceptability rating, Conners’ Rating Scales- Revised, and Achenbach’s Teacher Report Form for each of their student
participants. The pre-intervention TRF scores, CRS-R scores, and pre-intervention observational
data served as each student’s pretest data.

The parents assigned to treatment conditions attended a 45 minute to 1 hour educational and
training workshop prior to the start of the intervention. Following the workshop, parents
were instructed to implement intervention procedures for three weeks. The intervention occurred
five days per week. Parents assigned to the treatment conditions with email feedback received
performance feedback via email from the primary investigator on the first day of the intervention
and once each following week.

Following the intervention, three direct observations of students’ classroom behaviors
were conducted. Parents were asked to complete a post-intervention acceptability rating scale.
Teachers were asked to complete a post-TRF, CRS-R, and a post-acceptability rating scale.
Dyads assigned to the delayed treatment control condition were provided the opportunity to
participate in the educational and training workshop.

Parent Training Procedure. Parents participating in treatment conditions were asked to
attend a 45 minute to 1 hour educational and training workshop prior to the start of the
intervention. Workshops were facilitated by the investigator, with groups of approximately 5-10
parents. A handbook (i.e., topic summaries and procedures essential to implementation of the
intervention) was given to each parent and was reviewed during the workshop.

The workshop was divided into two areas (1) home-school communication and (2)
behavior management. Topics discussed in the area of home-school communication included
explaining the meaning, purpose, and importance of home-school communication, explaining the
types of home-school communication (e.g., conferences, written, telephone, etc.), and explaining
the challenges associated with implementation. Parents were taught to initiate and maintain
communication about their child’s classroom behavior via an electronic school-home note modeled after the samples provided in the Kelley (1990) book. Parents were given a printed sample of an electronic school-home note and were sent an electronic sample. Copies of the sample home-school note are provided in Appendix A. Parents were asked to CC the investigator all home-school correspondence that occurs during the intervention period.

Topics discussed in the area of behavior management included explaining the meaning and importance of positive and negative consequences. Parents were taught elements of praise, proper reward giving, and how to implement punishment. Areas of training also included direct instruction on specific parent responsibilities and task requirements for implementation of the intervention. Modeling and role-plays were also utilized.

A competency based instructional paradigm was used at the end of the workshop. Parents were divided into pairs and asked to rehearse the intervention’s procedures. Performance feedback was provided by the investigator. Competency on intervention procedures was assessed by direct observations of parent role-plays and an integrity checklist (see Appendix B). Positive feedback was given contingent upon skillful performance during and at the end of a role play. In order to begin the intervention, parents had to receive at least a 90% or higher accuracy rating on the integrity checklist. If the criterion was not met, parents repeated the role-play. Once the criterion was achieved, the investigator explained the performance feedback schedule when it applied. The workshop ended with parents completing an intervention acceptability rating.

**Intervention Procedures.** Following the workshop, parents were instructed to begin the intervention with their child. Each evening, parents were instructed to initiate communication about their child’s classroom behavior by emailing their child’s teacher (5 days per week for three weeks). The email included a blank school-home note and parents were be encouraged to
communicate with their child’s teacher by including brief comments (i.e., positive or negative) related to the intervention. Parents then periodically checked their email throughout the next day. When their child’s teacher responded with a completed note, parents provided a consequence to the child that matched the child’s behavior. Parents were instructed to record if they sent a school-home note, received a completed note from the child’s teacher, and what consequence they provided each day.

Consequences were provided at home by parents contingent upon the child meeting individualized predetermined criteria. Criteria for reward delivery were based on the level of occurrence of target behaviors prior to intervention. On each note teachers were asked to globally evaluate the occurrence of student’s target behaviors. Teachers indicated the level of occurrence on the note by endorsing a category. Parents delivered rewards if teacher endorsements fell within predetermined categories. If a teacher reported poor behavior, parents withheld the reward for that day and supplied an appropriate consequence.

Notes were collected during the time of the intervention. That is, parents CCed all home-school correspondence to the investigator. The investigator than logged all activity between the parent and the classroom teacher.

**Data Collection Procedures.** Following the retrieval of parental consent and prior to the implementation of the intervention, the investigator conducted three direct observations of the each student’s classroom behavior. The three fifteen minute in class observations occurred during varying times of the day and were conducted using partial interval recording. The recording sheet was divided into 90 squares, with each square representing a 10 second interval of time. If a student engaged in inappropriate behavior during a ten-second interval it was recorded. Inappropriate behaviors were talking out and making noise (i.e., any audible
vocalization, includes making noises with objects), out of seat (i.e., students’ body brakes contact with their seat for more than three sec.), and touching others (i.e., the student touches other students when it is not apart of instructional activity). The investigator chose the behaviors listed above, because they contribute to classroom disruption. The observation process continued until the 15 minute session was complete. The observations were separated by 15 minute time periods. A percentage of on-task behavior was obtained by dividing the number of marked intervals by the total number of intervals and dividing by 100. The median score for each student was recorded. Also, teacher endorsements on the TRF and CRS-R were collected prior to the start of the intervention. The pre-intervention TRF scores, CRS-R scores, and direct observation scores served as each student’s pre-treatment data or baseline.

Following the completion of the intervention, the investigator conducted three direct observations of the each student’s classroom behavior as described above. The median score was recorded. Also, teacher endorsements on the TRF and CRS-R were collected following the last day of the intervention. The post-intervention TRF scores, CRS-R scores, and direct observation data served as each student’s post-treatment data. In addition, pre- and post-treatment acceptability ratings were completed by both parents and teachers. All pre- and post-treatment data were compared.

Experimental Design and Conditions

The experimental design utilized was a 3 by 2 split-plot factorial design. The within participants factor had two levels consisting of pretreatment and post-treatment assessment. The between participants factor had three levels consisting of the three treatment conditions. Participants were randomly assigned to one of the three conditions.

**Wait-list control.** A waitlist control group served as the comparison group. In this
condition data were collected through direct observations of classroom behavior and teachers’ TRF and CRS-R scores. Data collection occurred after consent was received and again three weeks later. Data from this condition served as a basis of comparing no treatment to the two treatment conditions. Following post-data collection, parents in this condition were given the option to participate in the educational and training workshop.

**Treatment.** Participants in this group were required to attend the parent educational and training workshop. Procedures followed those listed in the parent training and intervention sections above. In this condition data were collected on direct observations of student’s classroom behavior and teachers’ TRF and CRS-R scores. In addition, parent treatment integrity, number of home-school notes sent, and parents’ & teachers’ acceptability ratings were recorded. Data collected from observations, TRF, CRS-R ratings, and treatment acceptability ratings occurred pre- and post-treatment. Parents’ treatment integrity (i.e., CC’ed correspondence with teachers) data were collected during the intervention, and the number of home-school notes sent was collected post-intervention. This condition aided in determining to what extent the intervention was effective, acceptable, and adhered to without feedback.

**Treatment with Email Feedback.** This group was identical to the treatment group with the addition of parents receiving one email per week from the investigator to encourage correspondence with the classroom teacher, to ask or answer questions related to the intervention, and to encourage parents to adhere to the intervention. Also, the emails sent to parents included performance feedback on previously forwarded home-school notes. This condition aided in determining to what extent the intervention was effective, acceptable, and adhered to with email feedback.
Inter-observer Agreement

Inter-observer agreement (IOA) data were collected by two independent observers simultaneously observing and recording each student’s target response/behavior. IOA was calculated for each session by dividing the number of agreements by the number of agreements plus disagreements for each session, and multiplying by 100%. IOA was collected on 36.59% of the total number of pre- and post-intervention direct observations. Mean IOA was 89.63% (range, 66.67% to 100%).

A second experimenter was trained in the scoring procedures for the observations, TRF ratings, CRS-R ratings, and acceptability ratings. At least one fifth of all TRF ratings, CRS-R ratings, and pre- and post-acceptability ratings were scored by an independent rater. IOA was collected on 21.74% of the total number of pre and post TRF ratings. Mean IOA was 83% (range, 40% to 100%). IOA was collected on 21.74% of the total number of pre and post CRS-R ratings. Mean IOA was 98.75% (range, 75% to 100%). IOA was collected on 21.74% of the total number of pre and post acceptability ratings, and was 100%. IOA was collected on 21.74% of the total number of parent pre and post acceptability ratings. Mean IOA was 90% (range, 0% to 100%).
RESULTS

The primary outcome measure targeted in this study was the extent to which students’ classroom behavior improved as assessed by both observations and rating scales. An analysis of variance (ANOVA) was conducted to examine the effects of time, treatment conditions, and the interaction of time and condition. For this analysis, time consisted of two levels; pre- and post treatment. Condition contained three levels consisting of the three differing treatment conditions.

Student Observations

The goal of the intervention was to increase students’ on-task classroom behavior. Investigators observed and recorded students’ classroom behaviors, regardless of their condition assignment, prior to and at the conclusion of the intervention. A split-plot ANOVA, often referred to as a mixed between-within subjects ANOVA, was conducted to explore the impact of time, the interaction of time and condition, and treatment condition on observed classroom behavior. Participants were randomly assigned to conditions (i.e., control, treatment, and treatment plus performance feedback). There was not a statistically significant effect for time. There was a statistically significant interaction effect, at the $p \leq .05$ level, for time and condition, Wilks’ Lambda = .54, $F(2, 43)=18.12$, $p=.0005$, multivariate eta squared = .46. Based on the decomposed cell means, the interaction of time*condition revealed that students’ observed on-task behavior in the No Treatment Condition deteriorated, while students’ on-task behavior in the Treatment Alone and Treatment plus Performance Feedback Conditions improved over the intervention. There was a statistically significant difference at the $p \leq .05$ level in observed classroom behavior for the three conditions [$F(2, 43)=15.32$, $p=.0005$]. The difference in mean scores between the groups was large. The effect size calculated using eta squared was .42, a large effect size as classified by Cohen (1988). Post-hoc comparisons using Tukey HSD test indicated
that the mean score for the No Treatment Condition (M=40.84, SD=19.53) was significantly different from the Treatment Alone Condition (M=77.07, SD=19.30) and the Treatment plus Performance Feedback Condition (M=78.26, SD=16.07). Treatment Alone Condition did not differ significantly from Treatment plus Performance Feedback Condition.

Child Behavior Checklist: Teacher Report Form 6-18 (CBCL-TRF)

The TRF was administered to teachers prior to and at the conclusion of the three week intervention period, regardless of students’ condition assignments. The TRF was administered to examine teacher perceived changes in student classroom behavior. T-scores from the following TRF scales were analyzed; Internalizing, Externalizing, and Total Problems.

**Internalizing.** A split-plot ANOVA was conducted to explore the impact of time, the interaction of time and condition, and treatment condition on teachers’ ratings of internalizing problems on the TRF. There was not a statistically significant effect for time. There was a statistically significant interaction effect, at the $p \leq .05$ level, for time and condition, Wilks’ Lambda = .76, $F(2, 43)=6.56$, $p=.002$, multivariate eta squared = .25. Based on the decomposed cell means, the interaction of time*condition revealed that teachers’ ratings of students’ internalizing behaviors in the No Treatment Condition increased over the intervention, while teachers’ ratings of students’ internalizing behaviors in the Treatment Alone and Treatment plus Performance Feedback Conditions decreased (the desired direction of change). There was not a statistically significant difference at the $p \leq .05$ level in teachers’ ratings of students’ internalizing behaviors for the three experimental conditions.

**Externalizing.** A split-plot ANOVA was conducted to explore the impact of time, the interaction of time and condition, and treatment condition on teachers’ ratings of externalizing problems on the TRF. There was a statistically significant effect, at the $p \leq .05$ level, for time,
Wilks’ Lambda = .79, F(1, 43)=11.87, p=.001, multivariate eta squared = .22. There was a statistically significant interaction effect, at the p≤ .05 level, for time and condition, Wilks’ Lambda = .82, F(2, 43)=4.75, p=.014, multivariate eta squared = .18. Based on the decomposed cell means, the interaction of time*condition reveals that teachers’ ratings of students’ externalizing behaviors in the No Treatment Condition increased over the intervention, while teachers’ ratings of students’ externalizing behaviors in the Treatment Alone and Treatment plus Performance Feedback Conditions decreased. There was not a statistically significant difference at the p≤ .05 level in teachers’ ratings of students’ externalizing behaviors for the three experimental conditions.

Total Problems. A split-plot ANOVA was conducted to explore the impact of time, the interaction of time and condition, and treatment condition on teachers’ ratings of total problems on the TRF. There was a statistically significant effect, at the p≤ .05 level, for time, Wilks’ Lambda = .57, F(1, 43)=32.77, p=.0005, multivariate eta squared = .43. There was a statistically significant interaction effect, at the p≤ .05 level, for time and condition, Wilks’ Lambda = .87, F(2, 43)=3.31, p=.046, multivariate eta squared = .13. Based on the decomposed cell means, the interaction of time*condition reveals that teachers’ ratings of students’ total problems in the No Treatment Condition increased over the intervention, while teachers’ ratings of students’ total problems in the Treatment Alone and Treatment plus Performance Feedback Conditions decreased. There was not a statistically significant difference at the p≤ .05 level in teachers’ ratings of students’ total problems for the three experimental conditions.

Conners’ Rating Scales- Revised (CRS-R)

The CRS-R short form was administered to teachers prior to and at the conclusion of the three week intervention period, regardless of students’ condition assignments. The CRS-R was
administered to examine teacher perceived changes in student classroom behavior. T-scores from the following CRS-R scales were analyzed; Oppositional, Cognitive Problems/Inattention, Hyperactivity, Conners’ ADHD Index.

Table 1
Split –plot Analysis of Variance for Student Observation and CBCL-TRF Ratings

<table>
<thead>
<tr>
<th>Measures</th>
<th>df</th>
<th>F</th>
<th>$\eta^2$</th>
<th>p</th>
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<tbody>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>.02</td>
<td>.420</td>
</tr>
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<td>Time x Condition</td>
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<td>.46</td>
<td>.000</td>
</tr>
<tr>
<td>Condition</td>
<td>(2,43)</td>
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<td>.000</td>
</tr>
<tr>
<td>CBCL-TRF</td>
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<td></td>
</tr>
<tr>
<td>Internalizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>(1,43)</td>
<td>.28</td>
<td>&lt;.01</td>
<td>.597</td>
</tr>
<tr>
<td>Time x Condition</td>
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<td>6.96**</td>
<td>.25</td>
<td>.002</td>
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<tr>
<td>Condition</td>
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<td>.04</td>
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</tr>
<tr>
<td>Externalizing</td>
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<td>(1,43)</td>
<td>11.87***</td>
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<td>.001</td>
</tr>
<tr>
<td>Time x Condition</td>
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<td>.18</td>
<td>.014</td>
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<tr>
<td>Condition</td>
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<td>Total Problems</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
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<td>32.77***</td>
<td>.43</td>
<td>.000</td>
</tr>
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<td>1.23</td>
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<td>.302</td>
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</table>

Note. CBCL-TRF= Child Behavior Checklist: Teacher Report Form 6-18; Time = pre- and post treatment; Condition = the three differing treatment conditions (i.e., No Treatment, Treatment, and Treatment plus Performance Feedback).

Oppositional. A split-plot ANOVA was conducted to explore the impact of time, the interaction of time and condition, and treatment condition on teachers’ ratings of oppositional
behavior on the CRS-R. There was not a statistically significant effect for time. There was not a statistically significant interaction effect. There was not a statistically significant difference at the $p \leq .05$ level in teachers’ ratings of students’ oppositional behavior for the three experimental conditions.

**Cognitive Problems/Inattention.** A split-plot ANOVA was conducted to explore the impact of time, the interaction of time and condition, and treatment condition on teachers’ ratings of cognitive problems/inattention on the CRS-R. There was a statistically significant effect for time, at the $p \leq .05$ level, for time, Wilks’ Lambda $= .68$, $F(1, 43)=20$, $p=.0005$, multivariate eta squared $= .07$. There was not a statistically significant interaction effect. There was a statistically significant difference at the $p \leq .05$ level in teachers’ ratings of cognitive problems/inattention for the three conditions $[F(2,43)=6.604$, $p=.003]$. The difference in mean scores between the groups was large. The effect size calculated using eta squared was $.24$, a large effect size as classified by Cohen (1988). Post-hoc comparisons using Tukey HSD test indicated that the mean score for the No Treatment Condition ($M=46.60$, $SD=2.67$) was significantly different from the Treatment Alone Condition ($M=56.07$, $SD=8.46$). The Treatment plus Performance Feedback Condition ($M=48.88$, $SD=5.55$) did not differ significantly from the No Treatment or Treatment Alone Conditions.

**Hyperactivity.** A split-plot ANOVA was conducted to explore the impact of time, the interaction of time and condition, and treatment condition on teachers’ ratings of hyperactivity on the CRS-R. There was a statistically significant effect for time, at the $p \leq .05$ level, for time, Wilks’ Lambda $= .66$, $F(1, 43)=22.17$, $p=.0005$, multivariate eta squared $= .34$. There was not a statistically significant interaction effect. There was not a statistically significant difference at the $p \leq .05$ level in teachers’ ratings of students’ hyperactivity for the three experimental conditions.
Conners’ ADHD Index. A split-plot ANOVA was conducted to explore the impact of time, the interaction of time and condition, and treatment condition on teachers’ ratings of ADHD symptomatology on the CRS-R. There was a statistically significant effect, at the $p \leq .05$ level for time, Wilks’ Lambda = .73, $F(1, 43)=15.69$, $p=.0005$, multivariate eta squared = .27. There was a statistically significant interaction effect, at the $p \leq .05$ level, for time and condition, Wilks’ Lambda = .83, $F(2, 43)=4.40$, $p=.018$, multivariate eta squared = .17. Based on the decomposed cell means, the interaction of time*condition reveals that teachers’ ratings of students’ ADHD Index in the No Treatment and Treatment Alone conditions increased slightly (opposite of desired direction) and those in the Treatment plus Performance Feedback Conditions decreased (desired direction of change). There was not a statistically significant difference at the $p \leq .05$ level in teachers’ ratings of students’ ADHD Index for the three experimental conditions.

The electronic home-school notes were collected during the time of the intervention. That is, parents were asked to copy carbon, CC, all home-school correspondence with the classroom teacher to the investigator. The number of notes each parent emailed to the classroom teacher was recorded. Notes were scored as present or absent. The total number of notes mailed was divided by 15 (i.e., the number of opportunities to send notes) and then multiplied by 100 to obtain a percentage score. An independent-samples $t$-test was conducted to compare the number of home-school notes emailed for treatment conditions, 2 and 3. There was a statistically significant difference in scores for Condition 2 ($M=7.40$, $SD=4.73$), and Condition 3 [(M=12, SD=1.86); $t(18)=-3.52$, $p=.002$]. The magnitude of the differences in the means was large (eta squared =.30).
Home-School Notes

The electronic home-school notes were collected during the time of the intervention. That is, parents were asked to copy carbon, CC, all home-school correspondence with the classroom teacher to the investigator. The number of notes each parent emailed to the classroom teacher was recorded. Notes were scored as present or absent. The total number of notes mailed was divided by 15 (i.e., the number of opportunities to send notes) and then multiplied by 100 to obtain a percentage score. An independent-samples t-test was conducted to compare the number of home-school notes emailed for treatment conditions, 2 and 3. There was a statistically significant difference in scores for Condition 2 (M=7.40, SD=4.73), and Condition 3 [(M=12, SD=1.86); t(18)=−3.52, p=.002]. The magnitude of the differences in the means was large (eta squared =.30).

Treatment Integrity

The primary investigator monitored and logged parents’ treatment integrity by reviewing parents’ electronic correspondence with the classroom teacher. Daily treatment integrity was calculated as the number of intervention steps completed divided by the number that the intervention required. On days when parents did not implement the intervention their score was zero. Each parents’ daily intervention scores were added and then divided by 15 (i.e., the number of opportunities to send notes) to obtain a mean score. The mean score served as parents’ overall intervention treatment integrity score. An independent-samples t-test was conducted to compare the parents’ adherence to intervention procedures for treatment conditions, 2 and 3. There was a statistically significant difference in scores for condition 2 (M=33.86, SD=26.38), and condition 3 [(M=61.56, SD=23.80); t(29)=−3.07, p=.005]. The magnitude of the differences in the means was moderate (eta squared =.25).
Table 2
Split –plot Analysis of Variance for CSR-R Ratings

<table>
<thead>
<tr>
<th>Measures</th>
<th>df</th>
<th>F</th>
<th>η²</th>
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</tr>
</thead>
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<td>CRS-R</td>
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<tr>
<td>Oppositional</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Time</td>
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<td>.541</td>
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<td>Condition</td>
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<td>(1,43)</td>
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<tr>
<td>Time</td>
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<td>.000</td>
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<td>Time x Condition</td>
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<td>Condition</td>
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<td>ADHD Index</td>
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<td>Time</td>
<td>(1,43)</td>
<td>15.70***</td>
<td>.27</td>
<td>.000</td>
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<tr>
<td>Time x Condition</td>
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<tr>
<td>Condition</td>
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<td>.67</td>
<td>.03</td>
<td>.519</td>
</tr>
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</table>

Note. CBCL-TRF= Child Behavior Checklist: Teacher Report Form 6-18; CRS-R= Conners’ Rating Scales- Revised teacher version short form; Condition = the three differing treatment conditions (i.e., No Treatment, Treatment, and Treatment plus Performance Feedback).
Table 3
Pre and Post-Intervention Descriptive Statistics by Measure and Treatment Condition: No Treatment

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<tr>
<th>Measure</th>
<th>Pre No Treatment</th>
<th>Post No Treatment</th>
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<tr>
<td></td>
<td>Mean</td>
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<td>Externalizing</td>
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<td>Total Problems</td>
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<td>CRS-R</td>
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<td>Oppositional</td>
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<td>Cognitive Problems/Inattention</td>
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<td>5.53</td>
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<tr>
<td>Teacher Ratings</td>
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</table>

Note. CBCL-TRF = Child Behavior Checklist: Teacher Report Form 6-18; CRS-R = Conners’ Rating Scales- Revised teacher version short form; IRP-15 = Intervention Rating Profile – 15. IRP-15 judgments were made on a 6-point Likert rating scale.
Table 4
Pre and Post-Intervention Descriptive Statistics by Measure and Treatment Condition: Treatment

<table>
<thead>
<tr>
<th>Condition</th>
<th>Measure</th>
<th>Pre Treatment</th>
<th>Post Treatment</th>
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<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
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<tr>
<td>On-task Behavior</td>
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<td>77.07</td>
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<td>CBCL-TRF</td>
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<tr>
<td>Internalizing</td>
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<td>5.16</td>
<td>43.07</td>
</tr>
<tr>
<td>Externalizing</td>
<td>56.20</td>
<td>7.84</td>
<td>52.00</td>
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<tr>
<td>Total Problems</td>
<td>59.07</td>
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<td>55.33</td>
</tr>
<tr>
<td>CRS-R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oppositional</td>
<td>53.27</td>
<td>10.69</td>
<td>52.33</td>
</tr>
<tr>
<td>Cognitive Problems/ Inattention</td>
<td>58.27</td>
<td>10.05</td>
<td>56.07</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>59.93</td>
<td>11.40</td>
<td>57.73</td>
</tr>
<tr>
<td>ADHD Index</td>
<td>64.07</td>
<td>7.67</td>
<td>62.47</td>
</tr>
<tr>
<td>IRP-15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Ratings</td>
<td>5</td>
<td>.45</td>
<td>5.24</td>
</tr>
<tr>
<td>Teacher Ratings</td>
<td>4.64</td>
<td>.38</td>
<td>4.91</td>
</tr>
</tbody>
</table>

Note. CBCL-TRF= Child Behavior Checklist: Teacher Report Form 6-18; CRS-R= Conners’ Rating Scales- Revised teacher version short form; IRP-15 = Intervention Rating Profile – 15. IRP-15 judgments were made on a 6-point Likert rating scale.
Table 5
Pre and Post-Intervention Descriptive Statistics by Measure and Treatment Condition: Treatment plus Performance Feedback

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre Treatment plus Performance Feedback</th>
<th>Post Treatment plus Performance Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean  SD</td>
<td>Mean  SD</td>
</tr>
<tr>
<td>On-task Behavior</td>
<td>60.45 9.50</td>
<td>78.26 16.07</td>
</tr>
<tr>
<td>CBCL-TRF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing</td>
<td>48.75 7.33</td>
<td>47.75 9.07</td>
</tr>
<tr>
<td>Externalizing</td>
<td>57.75 8.99</td>
<td>54.38 6.69</td>
</tr>
<tr>
<td>Total Problems</td>
<td>58.50 10.35</td>
<td>52.50 11.34</td>
</tr>
<tr>
<td>CRS-R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oppositional</td>
<td>58.13 13.51</td>
<td>53.25 7.76</td>
</tr>
<tr>
<td>Cognitive Problems/Inattention</td>
<td>54.00 9.69</td>
<td>48.88 5.55</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>61.12 9.13</td>
<td>54.00 9.99</td>
</tr>
<tr>
<td>ADHD Index</td>
<td>63.63 11.49</td>
<td>55.50 11.45</td>
</tr>
<tr>
<td>IRP-15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Ratings</td>
<td>5.10 .37</td>
<td>5.19 .81</td>
</tr>
<tr>
<td>Teacher Ratings</td>
<td>4.66 .62</td>
<td>4.77 .80</td>
</tr>
</tbody>
</table>

Note. CBCL-TRF= Child Behavior Checklist: Teacher Report Form 6-18; CRS-R= Conners’ Rating Scales- Revised teacher version short form; IRP-15 = Intervention Rating Profile – 15. IRP-15 judgments were made on a 6-point Likert rating scale.
Treatment Acceptability Ratings

Each teacher and parent participating in a treatment condition was asked to complete the Intervention Rating Profile – 15 (IRP-15; Martens, Witt, Elliott, & Darveaux, 1985) prior to and at the end of the intervention. An analysis of variance (ANOVA) was conducted to examine the effects of time, treatment conditions, and the interaction of time and condition. For this analysis, time consisted of two levels; pre- and post treatment. Condition contained two levels consisting of the two differing treatment conditions.

Teachers. A split-plot ANOVA was conducted to explore the impact of time, the interaction of time and condition, and treatment condition on teachers’ ratings of the intervention as acceptable on the IRP-15. There were no statistically significant effects for time, treatment conditions, and the interaction of time and condition. Teachers perceived the intervention moderately acceptable as indicated by a pre-intervention total mean rating of 4.65 and post-intervention total rating of 4.84 on a six point scale.

Parents. A split-plot ANOVA was conducted to explore the impact of time, the interaction of time and condition, and treatment condition on parents’ ratings of the intervention as acceptable on the IRP-15. There were no statistically significant effects for time, treatment conditions, and the interaction of time and condition. Parents perceived the intervention moderately acceptable as indicated by a pre-intervention total mean rating of 5.06 and post intervention total rating of 5.21 on a six point scale. It should be noted that approximately 25% of parent participants did not complete the post IRP ratings.
Table 6
Descriptive Statistics by Measure and Treatment Condition

<table>
<thead>
<tr>
<th>Measure</th>
<th>Treatment Mean</th>
<th>Treatment Mean</th>
<th>Treatment SD</th>
<th>Treatment SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Note</td>
<td>7.40</td>
<td>12.00</td>
<td>4.73</td>
<td>1.86</td>
</tr>
<tr>
<td>Tx Integrity</td>
<td>33.86</td>
<td>61.56</td>
<td>26.38</td>
<td>23.80</td>
</tr>
</tbody>
</table>

Note. Home Note = Home-school Notes via email; Tx Integrity = Treatment Integrity (i.e., parents’ adherence to intervention procedures).

Table 7
Independent T-Test for Home Notes and Treatment Integrity

<table>
<thead>
<tr>
<th>Measures</th>
<th>t</th>
<th>df</th>
<th>$\eta^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Note</td>
<td>-3.52**</td>
<td>18.00</td>
<td>.30</td>
<td>.002</td>
</tr>
<tr>
<td>Tx Integrity</td>
<td>-3.07**</td>
<td>29.00</td>
<td>.25</td>
<td>.005</td>
</tr>
</tbody>
</table>

Note. Home Note = Home-school Notes via email; Tx Integrity = Treatment Integrity (i.e., parents’ adherence to intervention procedures).
Table 8
Split –plot Analysis of Variance for IRP-15 Ratings

<table>
<thead>
<tr>
<th>Measures</th>
<th>df</th>
<th>F</th>
<th>η²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IRP-15</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Ratings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>(1,21)</td>
<td>1.22</td>
<td>.06</td>
<td>.283</td>
</tr>
<tr>
<td>Time x Condition</td>
<td>(1,21)</td>
<td>.29</td>
<td>.01</td>
<td>.599</td>
</tr>
<tr>
<td>Condition</td>
<td>(1,21)</td>
<td>.02*</td>
<td>.00</td>
<td>.898</td>
</tr>
<tr>
<td>Teacher Ratings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>(1,43)</td>
<td>10.74**</td>
<td>.20</td>
<td>.002</td>
</tr>
<tr>
<td>Time x Condition</td>
<td>(2,43)</td>
<td>.95</td>
<td>.04</td>
<td>.042</td>
</tr>
<tr>
<td>Condition</td>
<td>(2,43)</td>
<td>1.45</td>
<td>.06</td>
<td>.246</td>
</tr>
</tbody>
</table>

Note. IRP-15 = Intervention Rating Profile – 15; Time = pre- and post treatment; Condition = the three differing treatment conditions (i.e., No Treatment, Treatment, and Treatment plus Performance Feedback).
DISCUSSION

Parental involvement in schools has become a "hot topic" in the past decade. There seems to be a desire, by school officials and parents, to increase parent involvement. Local schools are concerned about continuing to provide high-quality teaching and other services with dwindling resources, and parents want assurance that their children will receive adequate preparation to lead rewarding adult lives (Cotton & Wikelund, 1989). Existing research has proven that when parents and teachers work together, everyone benefits; students tend to earn higher grades, perform better on tests, attend school more regularly, have better behavior, and show more positive attitudes toward themselves and toward school (Canter, 2004). To date, there is moderate empirical research supporting practical interventions in which parents can be involved in the management of their child’s classroom behavior (Kelley, 1990). This study examined the management of student’s classroom behavior problems by incorporating parents in the implementation of intervention procedures and as initiators of home-school communication. More specifically, the investigators studied the effects of parent training and a parent implemented intervention (parent initiated home-school note via email) on student’s maladaptive classroom behavior and teachers’ ratings on Achenbach’s TRF and Conner’s Ratings Scales. In addition, investigators examined the effects of emailing parental performance feedback on parents’ adherence to intervention procedures (parent initiated home-school note via email) and intervention acceptability as rated by parents and teachers.

The findings of the current investigation suggest that both treatment conditions were associated with increases in students’ observed on-task classroom behavior; with the Treatment Alone and the Treatment plus Performance Feedback Conditions significantly differing from the No Treatment Condition, but not differing from each other. Teacher ratings of the CBCL suggest
that student internalizing behaviors, externalizing behaviors, and total problems decreased in both treatment conditions and increased in the No Treatment Condition. In addition, CBCL ratings for externalizing behaviors and total problems suggest that these changes in student behavior across time were significant. A significant difference between treatment conditions was found in the number of notes emailed and parents’ treatment integrity. Parents in the Treatment plus Performance Feedback Condition emailed more notes and maintained higher adherence to intervention procedures as compared to parents in the Treatment Alone Condition. Lastly, both teachers and parents perceived the intervention moderately acceptable. Overall, the findings of the current investigation suggest that students’ classroom behavior can be influenced by a parent initiated intervention that utilizes computer technology.

Results of this investigation provide additional empirical support for the use of home-school notes as an effective intervention. The present study further demonstrates positive outcomes of the note intervention with school-aged children (Seay et al., 2003; Middleton & Cartledge, 1995; Kelley & McCain, 1995; McCain & Kelley, 1994; Imber et al., 1979; Saudargas et al., 1977; Todd et al., 1976), the modification of school behavior problems (Abramowitz & O’Leary, 1991; Dougherty & Dougherty, 1977; Lahey et al., 1977; McCain & Kelley, 1993), and intervention acceptability by parents and teachers (Witt, Martens, & Elliott, 1984; Turco & Elliott, 1986). In addition, results of this investigation provide further empirical support for the inclusion of parent training in intervention procedures (Bailey et al., 1970; Blechman et al., 1981; Schumaker et al., 1977).

The procedures of the present study differ from previous investigations in its emphasis on the role of parents in the initiation and implementation of intervention procedures, the examination of parental treatment integrity, and use of computer technology. Previous studies
view the parent role as minimal and limited to providing consequences based on teacher evaluations (Dougherty & Dougherty, 1977; Karraker, 1972; Lahey et al., 1977; Saudargas et al., 1977). Although researchers have examined the effects of the amount and type of parent training on note effectiveness (Bailey et al., 1970; Blechman et al., 1981; Schumaker et al., 1977), few if any have examined the effects of training parents as primary implementers on student outcomes. The procedures of this investigation differ in that parents were involved in a formal training that taught them to initiate and implement the intervention’s procedures as well as provided them with training on appropriate consequence delivery.

The procedures of the present study also attempt to examine the effects of performance feedback on parents’ adherence to intervention procedures. Rarely do researchers report data on parents’ commitment to adhering to home-school communication treatment procedures (Kelley, 1990). One short coming of the literature in the area of home-school notes is its lack of evaluation of parents’ treatment integrity. That is, are parents appropriately implementing intervention procedures as intended (e.g., consequence delivery and maintaining communication with the school)? The present investigation both contributes to and extends the literature in the area of home-school notes by empirically examining the effects of performance feedback on parents’ adherence to intervention procedures.

Lastly, the procedures of the present study differ from previous investigations in its integration of computer technology into intervention procedures. Today, computers are commonly found in homes and schools. As a result, it is not uncommon for parents and teachers to communicate via email. There is a lack of empirical studies investigating the use of computers as an effective means of communication between parents and teachers. Along the same lines, there is a lack of empirical support for a set of systematic procedures to guide communication
between home and school. This study involves the adaptation of school-home note procedures to support an email format. This adaptation both contributes to and extends the literature.

Limitations of this research are the absence of control for observer and rater bias, lack of follow-up data, and the homogeneity of study participants. The design of the study did not systematically control for bias from the research team or teachers. Although students were not aware of their condition assignments; for approximately 1/5 of the pre- and post-direct observations the research team was aware of students’ condition assignments. Knowing the goals of the study may have influenced observation data; thus, creating observer bias. Establishing a methodology in which neither the observers nor the participants know the goals of the study and students’ condition assignments would eliminate observer bias. As for teachers, they began the investigation with impressions of the student participants. Because students were nominated for participation by teachers, it can be hypothesized that these impressions were poor as they relate to students’ appropriate classroom behavior. If the hypothesis is correct, it is probable that teachers’ ratings were impacted by the halo effect (Thorndike, 1920). That is, teachers’ total judgements of students (i.e., positive or negative) may have influenced their ratings on measures utilized in the study.

The omission of follow-up procedures could be considered another limitation of the investigation. A follow-up evaluation would have provided maintance and generalization (i.e., generalization across time) data on classroom behaviors and parents’ integrity after the termination of the study. Maintance and generalization data would have supplied further evidence for the effectiveness of the treatment.

The participants in the study were 46 volunteer parent-child dyads. Information relating to demographic characteristics revealed that approximately 87% of dyads were Caucasian (non-
Hispanic), 72% of parents were married, 100% of parents were employed, and 100% of parents categorized their highest level of education as at least having some college. Although the proportions of the above listed characteristics were not significantly different in each condition in the study, the proportions are significantly different from the general population. This difference creates a threat to external validity, which is a limitation of the study.

The results of the current investigation suggest that students’ classroom behavior can be influenced by a parent initiated intervention that utilizes e-mail. Future research should examine the effects of the treatment conditions on participants that are similar to the general population. Future researchers could manipulate integrity strength to determine at which levels adherence to intervention procedures a desirable effect. An investigation of the adaptation of the study’s procedures (i.e., parent training and parent involvement via email) should be studied with school behaviors that occur outside of the classroom. Possible targets for investigation include but are not limited to bus behavior, recess behavior, lunch-time behavior, adult and peer relations, etc. Also, an investigation of the effectiveness of using email as a means to increase parental involvement and communication with schools should be studied. Future studies could explore home-school and school-home communication via email for the notification of school programs and conferences (Will parent involvement increase?) and student health concerns (e.g., school accidents and medication distribution concerns; Is email a more effective means of contacting parent during the school day?).

In summary, the present investigation demonstrates that a parent initiated intervention that utilizes emailed home-school notes can be successful in reducing students’ maladaptive classroom behaviors, with the addition of performance feedback yielding increased treatment integrity. Findings of this study are consistent with previous research (Kelley, 1990; Christenson, 1995; Noell, 2005). This study extends the literature by examining intervention effects in natural
environments, increasing home-school communication by integrating computer technology into intervention procedures, increasing parental skills through parent training, and examining the effects of performance feedback on parents’ adherence to intervention procedures.

The study’s procedures have potential application for both the families and schools. For families, with training on appropriate consequence delivery and intervention procedures, parents could potentially help manage their child’s classroom behaviors. Parents could receive training from a variety of sources (i.e., clinicians, community agencies, consultants, etc.). Intervention procedures could be disseminated to professionals via journals, websites, books, workshops, and magazines. Parents would receive training from professionals in their community and initiate implementation of the intervention in their child’s school. For schools, intervention procedures could be adopted and provide schools with an intervention option that addresses classroom behavior problems that incorporates parental involvement. Schools could provide group training workshops for parents when student behavioral concerns manifest. The investigators conclude that emailed home-school notes are effective at reducing students’ classroom behavior problems, and the procedures described in this study are useful methods that parents, practitioners, and school agencies can use to facilitate parental involvement in managing students’ classroom behavior.
REFERENCES


APPENDIX A

HOME-SCHOOL COMMUNICATION PROGRAM PARENT HANDBOOK

School Psychology Program - Louisiana State University
Contact Information

Kashunda L Williams, M.A., BCBA
Louisiana State University
Consultant
(XXX) XXX-XXXX
Email address

Principal
(XXX) XXX-XXXX
Email address

Supervisor
(XXX) XXX-XXXX

Teacher Name
Email address
Home-School Communication

**Defined** Ideally, school-home communication takes place when the school transmits a message to the home and that message is received as intended by the sender. Home-school communication, on the other hand, refers to messages sent by the home to the school.

**Purpose** Most of the time school-home collaboration is necessary to accomplish more general, ongoing tasks, such as completing homework. However, at times it has a very specific focus, such as praising student achievement or dealing with a behavior problem that requires the involvement of both school personnel and the parents.

**Types** Communication between the home and school include newsletters, handbooks, letters and notes, suggestion boxes, report cards, bulletins, and newspapers. In addition, conferences, workshops, support groups, telephone calls, IEP meetings, home visits, classroom visits, and telephone answering machines have been suggested as means of facilitating dialogue between parents and teachers.

**Challenges** Several communication problems among parents and teachers have been identified. Examples include: failure to (a) initiate communication, (b) communicate often enough (c) communicate early enough, (d) communicate consistently enough, (e) follow through with communication, and (f) communicate in a clear and useful manner.

In addition, (a) parents and teachers lack sufficient time and opportunity to communicate; (b) parents and teachers lack knowledge, understanding, and/or awareness necessary for communication, and (e) other factors restrict communication (e.g., lack of telephones, parental priorities).

**Advantages:**
- Parent and teacher collaboration
- Parental feedback on both positive and negative student behaviors
- It requires minimal teacher time
- Teachers do not have alter their routines
- It provides few related problems
- Students have access to a wider variety of reinforcers when compared to school-based reinforcement

Also, in addition to increased communication between the home and school, frequent verbal feedback and praise should occur.
Behavior Management

**Consequences** are the events that are the result of behavior. They can be both liked (positive) or disliked (negative).

**Positive Consequences:** Events that follow behavior that are liked. Positive consequences will cause behavior to occur more often in the future. Examples include praise (hugs, kisses, saying good job, etc.) and rewards (candy, toys, trinkets, gifts, money, TV time, etc.).

*****Fill out cards*****

**Negative Consequences:** Events that follow behavior that are disliked. Negative consequences will cause the behavior to occur less often in the future. Examples include time out, removing a toy, no TV, etc.

Consequences should:
- Occur immediately
- Be powerful
- Be easily understood
Sample Email

Date: XX-XX-XXXX

Hello Teacher,

Based on your last report I provided the following consequence:

Parent Comments (if any):

Please indicate if the following behaviors occurred at Above, Average, or Below satisfactory levels today. For example, if you were very pleased with my child’s level of behavior today type “Above” next to it, if not type “Below.” Feel free to provide comments.

1. Stayed Seated
2. Completed Work
3. Talked Appropriately
4. Followed Directions
5. Completed Assignments

Thank You,

Teacher Comments (if any):

My Child:

1. _______________________________________________
2. _______________________________________________
3. _______________________________________________
4. _______________________________________________
5. _______________________________________________
Parent Responsibilities & Procedures

The intervention will occur 5 days per week for three weeks. Your responsibilities include the following:

- Send an email to your child’s teacher
- Await a Teacher Response
- Provide Consequence
- Log Activity
- Repeat Procedure

STEP ONE: Send an email to your child’s teacher

Each day send a copy of the sample email to “email address” & your child’s teacher. You can find teacher email addresses on page 2.

The subject line should include the date the note will represent.
Example: School Note for Mon 01/01/2005

In the email, please tell the teacher the consequence you provided based on her last report and include any comments you may have.

STEP TWO: Await a teacher Response

Each day please check your email periodically for a teacher response.

When you receive a teacher report, forward it to “email address”

STEP THREE: Provide Consequence

Each day, based on the teacher’s report, provide a consequence.

If the teacher reports that 3 or more classroom behaviors are “Above” or “Average” provide your child with a reward.

If less than 3 classroom behaviors are “Above” or “Average” provide a negative consequence.

Examples of positive and negative consequences are on page 4.

STEP FOUR: Repeat

Repeat steps 1-3 each day.
Parent Role Play

EXAMPLE I

Date: XX-XX-XXXX

Hello Teacher,

Based on your last report I provided the following consequence: **Provided a small toy form the reward bag.**

**Parent Comments (if any):** Thank You for working with me.

Please indicate if the following behaviors occurred at Above, Average, or Below satisfactory levels today. For example, if you were very pleased with my child’s level of behavior today type “Above” next to it, if not type “Below.” Feel free to provide comments.

1. Stayed Seated Average

2. Respectful of Others Below

3. Talked Appropriately Above

4. Followed Directions Below

5. Completed Assignments Below

Thank You,

**Teacher Comments (if any):** Today your child could have done better. I know he/she has the potential. Hope tomorrow is better!!
Parent Role Play

EXAMPLE II

Date: XX-XX-XXXX

Hello Teacher,

Based on your last report I provided the following consequence: My child was not allowed to play video games yesterday.

Parent Comments (if any): N/A

Please indicate if the following behaviors occurred at Above, Average, or Below satisfactory levels today. For example, if you were very pleased with my child’s level of behavior today type “Above” next to it, if not type “Below.” Feel free to provide comments.

1. Stayed Seated Average

2. Respectful of Others Above

3. Talked Appropriately Above

4. Followed Directions Above

5. Completed Assignments Average

Thank You,

Teacher Comments (if any): Your child had a GREAT day!!
APPENDIX B

ROLE PLAY INTEGRITY CHECKLIST

Parent Name:          Date:
Observer:

Place an “X” next to each step completed correctly. Tell parents they are encouraged to use the handbook for help. Read what is italicized.

1. Please list the four steps of the intervention procedure.
   _____ Send an email to you child’s teacher
   _____ Await a Teacher Response
   _____ Provide Consequence
   _____ Repeat Procedure

2. Based on the “TOP” parent role play note what type of consequence would be delivered?
   _____ Negative

3. Provide an example of a negative consequence. _______

4. Based on the “Bottom” parent role play note what type of consequence would be delivered?
   _____ Positive

5. Provide an example of a positive consequence. _______

6. How often should an email be sent?
   _____ Daily

   Total Number Correct: ____________

   *****If less than 6, review procedure with parent and re-administer. ***************
APPENDIX C

PARENT AND STUDENT CONSENT FORM

Date: ____________________

Dear Parent(s),

We are writing to request your permission to work with you and your child. Our goal is to help increase your child’s appropriate classroom behavior so that he/she can achieve their full potential in class, and to help increase good home school communication. You have been offered this opportunity, because you have been identified as having a personal email account and daily access to a computer.

If you agree, classroom observations of your child will occur. This will consist of a member of our team sitting in your child’s classroom and measuring his/her behavior. The observation time will not disrupt any important school activities. Each observation will take 15 minutes to conduct. Your child’s teacher will be asked to complete ratings of your child’s classroom behavior. In addition to this, you will be asked to attend a brief 30 to 45 minute workshop that will focus on home-school communication and intervention procedures. During the workshop, you will be taught how to communicate with your child’s teacher using email that could potentially increase your child’s appropriate classroom behavior.

The intervention involves daily communication between you and your child’s teacher using email. You will be asked to email your child’s teacher, the teacher will respond by reporting your child’s behavior, and then you will provide consequences to your child at home based on the teacher’s report. Our team will provide you with small rewards to give to your child when he/she has good reports.

After the intervention is complete, you will receive a note summarizing your son or daughter’s performance. Also, the results will be shared with your child’s teacher and will be included in a study report. Your child will never be individually identified in any study report. There are no known possible physical, legal, psychological, or other risks. You may withdraw yourself or your child from this program at any time with no penalty to yourself or your child, or you may choose not to participate in the project if you prefer.

Only a select number of students and their parents will be allowed to participate in this project. If you agree to participate, a team member will contact you to inform you of your status. If you have any questions about this project, please feel free to contact us at your earliest convenience.

Sincerely,

Kashunda Williams, M.A., BCBA
Consultant
“Email Address”
(XXX) XXX-XXXX

George Noell, Ph.D.
Associate Professor
Supervisor
(XXX) XXX-XXXX
Please Keep Top Portion For Your Records
Please Check One and Return to School

_________ Yes, my child and I agree to participate in this project.

**Please Complete Attached Form**

_________ No, my child and I DO NOT agree to participate in this project.

Print Student’s Name: ___________________________________________________________

Print Parent’s Name: ___________________________________________________________

Parent’s Signature: _____________________________________________________________

If you have additional questions about participants’ rights or other concerns regarding the research component of this activity you can contact: Robert C. Mathews, Institutional Review Board, Louisiana State University, (225) 578-8692.
Please answer the following questions:

Do you have a personal email account and daily access to a computer?

YES          NO

Please provide the following information:

Day Phone Number: (____)_____-________

Evening Phone Number: (____)_____-________

Email Address: _____________________________

Thank You
APPENDIX D

TEACHER CONSENT FORM

Date: ____________________

Dear Teacher,

We are writing to request your permission to work with you and your student(s). Our goal is to help increase your child's appropriate classroom behavior so that he/she can achieve their full potential in class, and to help increase good home school communication. A doctoral candidate is offering these services. We are examining the effects of an email intervention on students’ classroom behavior.

We are asking that you nominate students in your classroom whose parents have a personal email account and daily access to a computer. You will be asked to suggest target behaviors that will be addressed by the intervention. In addition, you will be asked to complete pre-intervention and post-intervention ratings of student’s classroom behavior. Each survey should take only a few minutes to complete. Appropriate times for assessment will be determined according to your schedule. After all assessments have been completed, reports of each student’s performance will be provided to you and the child’s parents. This information will let you know the extent to which the intervention was successful.

Your principal has approved your participation with your consent. There are no known risks associated with this study. Any data collected will remain confidential and your name will not be included in any research reports. You may choose not to participate in the study if you prefer. You may withdraw from this activity at any time with no penalty to yourself or your students. The Omaha Public School District is not conducting or sponsoring this project.

If you have any questions about this assessment, please feel free to contact us at your earliest convenience.

Sincerely,

Kashunda Williams, M.A., BCBA       George Noell, Ph.D.
Consultant                     Associate Professor
“Email Address”                   Supervisor
(XXX) XXX-XXXX                     (XXX) XXX-XXXX

Please Keep Top Portion For Your Records

Please Check One

________ Yes, I give my permission to participate in this project.

________ No, I do not have my permission to participate in this project.
Print Name: _____________________________________________________________
Signature: _______________________________________________________________
Email Address: __________________________________________________________

**Referred Students:**
- ______________________________________________
- ______________________________________________
- ______________________________________________

If you have additional questions about participants’ rights or other concerns regarding the research component of this activity you can contact: Robert C. Mathews, Institutional Review Board, Louisiana State University, (225) 578-8692.
APPENDIX E

CHILD ASSENT FORM

I, _______________________________________, agree to be in a study that can possible improve my classroom behavior. I will have to follow classroom rules, and accept the consequences my parent provides to me at home. I can decide to stop being in the study at any time without getting in trouble.

Child's Signature ______________________________________________________

Age ______________________           Date ____________________

Witness _________________________________    Date ____________________
APPENDIX F

PRE/ POST INTERVENTION OBSERVATION WORKSHEET

For behavioral concerns: 3 x 15 minute observations: over at least 2 days with at least 15 minutes between observations.

Observation type: ten second interval based procedure. Whole interval for on task behavior and partial interval for disruptive behavior.
Place an O in the box if the student was on task for the entire ten second interval.
On task is defined as the student being oriented towards academic work or the teacher for the entire interval.
Place an X in the box if the student engaged in any of the disruptive behaviors listed below.
Talking out & making noise recorded when any audible vocalization was observed. This also includes making noises. This definition does not apply in small group where talking was part of the academic assignment as instructed by the teacher.
Out of seat coded when the student’s body broke contact with his/her assigned seat for 3 seconds or more.
Touching others. The student is touching other students when it is not clearly a part of the instructional activity.
Place an I if the student engaged in an idiosyncratically defined target behavior.

Define I:  
____________________________________________________________________________________

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Student Name: ___________________________   Observation Number:   1  2  3  
Date: ___________________________________   Number of I = _____________  
Time: ___________________________________   Number of X = ____________  
Observer 1 Name: ________________________   Number of O = ____________  
Observer 2 Name: ________________________
APPENDIX G

TEACHER/ PARENT INTERVENTION RATING PROFILE (IRP-15)

Please rate the intervention along the following dimensions. Please circle the number which best describes your agreement or disagreement with each statement.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Disagree Slightly</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. This would be an acceptable intervention for a child’s problem behavior.</td>
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<td>2</td>
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<td>2. Most teachers would find this intervention appropriate for behavior problems in addition to the one described.</td>
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<td>3. This intervention should prove effective in changing a child’s problem behavior.</td>
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<td>4. I would suggest this intervention to other teachers.</td>
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<td>5. The child’s behavior is severe enough to warrant use of this intervention.</td>
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<td>6. Most teachers would find this intervention suitable for behavior problem described.</td>
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<td>7. I would be willing to use this intervention in the classroom setting.</td>
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<td>8. This intervention would not result in negative side-effects for the child.</td>
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<td>9. This intervention would be appropriate for a variety of children.</td>
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<td>10. This intervention is consistent with those I have used in classroom settings.</td>
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<td>11. The intervention was a fair way to handle the child’s problem behavior.</td>
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<td>12. This intervention is reasonable for the problem behavior described.</td>
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<td>13. I liked the procedures used in this intervention.</td>
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<td>14. This intervention is a good way to handle this child’s behavior.</td>
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<td>15. Overall, this intervention would be beneficial for a child.</td>
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VITA

Kashunda Lynn Williams is currently a graduate student in the School Psychology Program at Louisiana State University under the direction of Dr. George Noell. She received both her Bachelor of Science degree (2001) and her Master of Arts degree (2003) from Louisiana State University in the major area of psychology. Kashunda L. Williams is a candidate for the degree of Doctor of Philosophy to be awarded in December of 2006.