USING A CLASSWIDE PEER-ASSISTED SELF-MANAGEMENT PROGRAM TO IMPROVE CLASSROOM BEHAVIOR OF SECONDARY-AGE AT-RISK STUDENTS

by

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A dissertation submitted in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY in

Special Education

Approved:

UTAH STATE UNIVERSITY
Logan, Utah

1999
ABSTRACT

Using a Classwide Peer-Assisted Self-Management Program to Improve Classroom Behavior of Secondary Age At-Risk Students

by

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Utah State University, 1999

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Classroom management is still one of the top-rated concerns of general educators and public school administrators, even though there exist a number of empirically supported interventions that improve classroom behavior. The current research, consisting of two studies, examined the effectiveness, feasibility, and acceptability of one of these interventions, a classwide peer-assisted, self-management program. Using a multiple baseline design across classes, the first study investigated the effects of the Peer-Assisted Learning (PAL) Game on appropriate classroom behavior of three classes of seventh-grade language arts students and of 10 target at-risk students. The PAL Game consisted of teacher instruction in self-management and social skills, a classwide self-monitoring game in which two teams of peer dyads rated themselves and each other, a teacher-rated mystery match, and public posting of team and partnership scores. The second study examined the effects of the systematic withdrawal of the PAL Game on maintenance of appropriate behavior of the class and of target at-risk students. In addition to examining the effects of the PAL Game on classroom behavior, another purpose of these two studies was to document and analyze the feasibility of implementing the PAL Game in a general education classroom and acceptability of the PAL Game to students and the teacher.
The results revealed that simultaneous on-task behavior of the class and on-task and appropriate use of social skills of the 10 target at-risk students improved after the PAL Game was introduced in the general education classroom. Improvements in behavior were maintained for all classes and most at-risk students throughout the systematic withdrawal of the PAL Game. Simultaneous on-task behavior of the class improved from zero to low levels during baseline to almost 80% during the last few days of the intervention. As a group, target students improved from an average 35% on-task during baseline conditions to an average of 80% during treatment conditions. In addition, target students’ appropriate use of the two social skills, following instructions and gaining teacher attention, also increased. Teacher ratings of target students’ social competence and academic-related skills as measured by the School Social Behavior Scales improved in statistical and practical significance. In terms of feasibility and acceptability, the PAL Game compared favorably with other classwide interventions in the time, personnel, training, and material resources required to implement the game.

The results of these studies are discussed in terms of their implications for classroom practitioners and for future research.

(219 pages)
ACKNOWLEDGMENTS

There are so many people to whom I owe my gratitude for their support, encouragement, and most of all, unquestioning belief in my abilities. My husband, children, and father have supported me in all my endeavors—even when they were not sure exactly what I was doing. Only I know better than they how close I was to giving up and how much I owe them for their love and support, which enabled me to continue.

More specifically, my thanks are due to Dr. K. Richard Young, my advisor, who has mentored me, supported and encouraged me, and provided me with countless opportunities for professional growth. Thanks also to Dr. Richard West, who offered insight and wisdom, and to my other committee members, Drs. Susan Friedman, Pamela Hudson, and Glen Jenson, for their support, valuable suggestions, and assistance throughout the whole process. I would also like to thank Dr. Chuck Salzberg for his patience and ability to explain the mysteries of applied behavior analysis to me.

Ogden City School District and particularly Julieann Benyo deserve my gratitude and appreciation for hosting this study. Julieann willingly opened her classroom to me; without her help, support, and expertise, this study would not have been possible.

Finally, I would like to thank my colleagues and fellow students for their moral support and those who helped with data collection and data entry, Allison Parks, Effie Thacker, Sarah Langman, Julie Dixon, Josh Wangsgard, Jeff Hirschi, Wendi Martin, and Jan LaMar.

This study was partially funded by U.S. Department of Education Project 97-T002-2.

Katherine J. Mitchem
CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>iii</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>v</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>ix</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xi</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>REVIEW OF THE LITERATURE</td>
<td>6</td>
</tr>
<tr>
<td>Components and Benefits of Self-Management</td>
<td>7</td>
</tr>
<tr>
<td>Increasing Appropriate Behavior Using Self-Management Programs</td>
<td>9</td>
</tr>
<tr>
<td>Acceptability and Feasibility of Classroom Interventions</td>
<td>11</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>11</td>
</tr>
<tr>
<td>Factors Influencing Teachers' Use of Interventions</td>
<td>12</td>
</tr>
<tr>
<td>Bridging the Research-to-Practice Gap</td>
<td>15</td>
</tr>
<tr>
<td>Acceptability and Feasibility of Self-Management Programs</td>
<td>16</td>
</tr>
<tr>
<td>Target Population Characteristics</td>
<td>26</td>
</tr>
<tr>
<td>Target Behavior</td>
<td>27</td>
</tr>
<tr>
<td>Intervention Description</td>
<td>27</td>
</tr>
<tr>
<td>Resources Required</td>
<td>29</td>
</tr>
<tr>
<td>Time Required to Train</td>
<td>29</td>
</tr>
<tr>
<td>Time to Implement</td>
<td>30</td>
</tr>
<tr>
<td>Trainer</td>
<td>31</td>
</tr>
<tr>
<td>Effects on Child/Others</td>
<td>31</td>
</tr>
<tr>
<td>Intrusiveness</td>
<td>31</td>
</tr>
<tr>
<td>Acceptability</td>
<td>32</td>
</tr>
<tr>
<td>Classwide Use of Self-Management Interventions</td>
<td>34</td>
</tr>
<tr>
<td>Using Peer Assisted Learning with Self-Management Programs</td>
<td>37</td>
</tr>
<tr>
<td>Summary</td>
<td>38</td>
</tr>
<tr>
<td>Purpose and Research Questions</td>
<td>39</td>
</tr>
<tr>
<td>Primary Research Questions</td>
<td>39</td>
</tr>
<tr>
<td>Secondary Research Questions</td>
<td>40</td>
</tr>
<tr>
<td>Acceptability and Feasibility Research Questions</td>
<td>40</td>
</tr>
<tr>
<td>METHOD</td>
<td>42</td>
</tr>
<tr>
<td>Participants</td>
<td>42</td>
</tr>
<tr>
<td>Classes</td>
<td>42</td>
</tr>
</tbody>
</table>
Target At-Risk Students ................................................. 43
Setting ................................................................. 48
Trainer and Teacher .................................................... 48
Materials ............................................................... 49
Dependent Variables .................................................... 49
Primary Research Questions ......................................... 51
Secondary Research Questions ....................................... 52
Acceptability and Feasibility Research Questions ............... 56
Data Collection Procedures ........................................... 57
Measurement Systems .................................................. 58
Observers ............................................................... 59
Interobserver Agreement ............................................... 60
Independent Variable .................................................. 61
Self-Monitoring and Self-Evaluation ................................. 63
Matching and Reinforcement Process ............................... 65
Point Reporting ........................................................ 66
Mystery Match .......................................................... 68
Fading Process .......................................................... 68
Training ................................................................. 70
Experimental Design and Experimental Conditions ............ 71
Study 1 ........................................................................ 72
Baseline ....................................................................... 72
Training ..................................................................... 72
PAL Game ................................................................... 73
Study 2: Fading of Matching Procedures ............................ 74
Trimester Change--Return to Baseline (No PAL Condition) .... 74
PAL Game Review ....................................................... 74
PAL 4--Match Four Times ............................................. 74
PAL 2--Match Twice .................................................... 74
PAL 1--Match Once ..................................................... 75
No Matching .............................................................. 75
Treatment Verification .................................................... 75
Social Validity ............................................................. 77
RESULTS ........................................................................ 80
Study 1 ........................................................................ 80
Group On-Task Data ..................................................... 80
Target Students’ On-Task Data ........................................ 82
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acceptability Categories, Terms Used in Coding, and Definitions of Terms</td>
<td>17</td>
</tr>
<tr>
<td>2</td>
<td>Classroom-Based Self-Management Studies</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>Characteristics of Students by Class Period</td>
<td>43</td>
</tr>
<tr>
<td>4</td>
<td>Participant Characteristics</td>
<td>45</td>
</tr>
<tr>
<td>5</td>
<td>Mean (Range) Interobserver Agreement Across Behaviors and Conditions</td>
<td>62</td>
</tr>
<tr>
<td>6</td>
<td>Procedural Fidelity Checklist--Percentage Steps Correct and Complete</td>
<td>77</td>
</tr>
<tr>
<td>7</td>
<td>Mean Student Ratings on Acceptability, Likeability, Effectiveness, and Classroom Climate</td>
<td>78</td>
</tr>
<tr>
<td>8</td>
<td>Teacher Ratings (Percentage and Points) on Acceptability of Goals, Procedures, and Outcomes</td>
<td>79</td>
</tr>
<tr>
<td>9</td>
<td>Mean of Last 3 Days of Baseline and Last 3 Days of Treatment (SD for the Condition) and Difference Between Means in Group On-Task Behavior Across Conditions</td>
<td>82</td>
</tr>
<tr>
<td>10</td>
<td>Mean Percentage (SD) and Increase in On-Task Behavior from Baseline to PAL 4</td>
<td>87</td>
</tr>
<tr>
<td>11</td>
<td>Mean Percent (SD) of Instructions Followed Across Conditions</td>
<td>91</td>
</tr>
<tr>
<td>12</td>
<td>Mean Percent (n) of Teacher Attention Gained Appropriately by Target Students and Difference Between Means from Baseline to Pal 4 Condition</td>
<td>92</td>
</tr>
<tr>
<td>13</td>
<td>Mean Percent (SD) Group On-Task Across Conditions and Classes</td>
<td>99</td>
</tr>
<tr>
<td>14</td>
<td>Mean Percent of Intervals (SD) Engaged in On-Task Behavior Across All Conditions (Studies 1 and 2) for Each Target Student</td>
<td>105</td>
</tr>
<tr>
<td>15</td>
<td>Mean Percent (SD) of Instructions Followed Across All Conditions (Studies 1 and 2) For Each Student</td>
<td>110</td>
</tr>
<tr>
<td>16</td>
<td>Mean Percent (n) of Teacher Attention Gained Appropriately Across All Conditions (Studies 1 and 2) for Each Student</td>
<td>115</td>
</tr>
<tr>
<td>17</td>
<td>Mean and Standard Deviations Based on Standard SSBS Scores for Target Students</td>
<td>116</td>
</tr>
</tbody>
</table>
18 Degrees of Freedom, t-values, One-Tailed Level of Significance, and SMD Effect Size for Treatment Group Calculated Using SSBS Pre/Posttest Raw Scores ........................................ 117

19 Pre- and Posttest Raw Scores on Academic Skills Subtest for Each Student ........................................................................................................... 119

20 Target Students' Mean (Range) Language Arts and Overall Grade Point Average by Trimester ................................................................. 120

21 Target Students' Mean Overall Citizenship Grades Across Trimesters ............................................................................................................. 120

22 Summary of Acceptability and Feasibility Data..................................................... 122
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PAL Game point card</td>
<td>50</td>
</tr>
<tr>
<td>2</td>
<td>PAL Game point card rating system</td>
<td>67</td>
</tr>
<tr>
<td>3</td>
<td>PAL Game 20- and 40-minute ratings</td>
<td>69</td>
</tr>
<tr>
<td>4</td>
<td>Percent of time group simultaneously on-task--Study 1</td>
<td>81</td>
</tr>
<tr>
<td>5</td>
<td>Percent of intervals target students engaged in on-task behavior across conditions and periods--Study 1 (Rich, Howie, and John)</td>
<td>84</td>
</tr>
<tr>
<td>6</td>
<td>Percent of intervals target students engaged in on-task behavior across conditions and periods--Study 1 (Jay, Arvilo, and Ricardo)</td>
<td>85</td>
</tr>
<tr>
<td>7</td>
<td>Percent of intervals target students engaged in on-task behavior across conditions and periods--Study 1 (Cody, Helena, Rebecca, and Patricia)</td>
<td>86</td>
</tr>
<tr>
<td>8</td>
<td>Percent of instructions target students followed appropriately across conditions and periods--Study 1 (Rich, Howie, and John)</td>
<td>88</td>
</tr>
<tr>
<td>9</td>
<td>Percent of instructions target students followed appropriately across conditions and periods--Study 1 (Jay, Arvilo, and Ricardo)</td>
<td>89</td>
</tr>
<tr>
<td>10</td>
<td>Percent of instructions target students followed appropriately across conditions and periods--Study 1 (Cody, Helena, Rebecca, and Patricia)</td>
<td>90</td>
</tr>
<tr>
<td>11</td>
<td>Frequency of times target students gained teacher attention appropriately and inappropriately across conditions--Study 1 (Rich, Howie, and John)</td>
<td>93</td>
</tr>
<tr>
<td>12</td>
<td>Frequency of times target students gained teacher attention appropriately and inappropriately across conditions--Study 1 (Jay, Arvilo, and Ricardo)</td>
<td>94</td>
</tr>
<tr>
<td>13</td>
<td>Frequency of times target students gained teacher attention appropriately and inappropriately across conditions--Study 1 (Cody, Helena, Rebecca, and Patricia)</td>
<td>95</td>
</tr>
<tr>
<td>14</td>
<td>Systematic withdrawal of PAL cards: Percent of time group simultaneously on-task across conditions and classes--Study 2</td>
<td>98</td>
</tr>
<tr>
<td>15</td>
<td>Percent of intervals period 2 target students engaged in on-task behavior across conditions--Study 2 (Rich, John, and Cody)</td>
<td>102</td>
</tr>
<tr>
<td>16</td>
<td>Percent of intervals period 4 target students engaged in on-task behavior across conditions--Study 2 (Howie, Helena, and Arvilo)</td>
<td>103</td>
</tr>
</tbody>
</table>
17 Percent of intervals period 7 target students engaged in on-task behavior across conditions--Study 2 (Jay, Ricardo, Rebecca, and Patricia)........ 104

18 Percent of instructions target students followed appropriately across conditions and periods--Study 2 (Rich, John, and Cody) ................. 107

19 Percent of instructions target students followed appropriately across conditions and periods--Study 2 (Howie, Helena, and Arvilo) ............. 108

20 Percent of instructions target students followed appropriately across conditions and periods--Study 2 (Jay, Ricardo, Rebecca, and Patricia).... 109

21 Frequency period 2 target students students gained teacher attention appropriately and inappropriately (Rich, John, and Cody) ................. 111

22 Frequency period 4 target students students gained teacher attention appropriately and inappropriately (Howie, Helena, and Arvilo) ............. 112

23 Frequency period 7 target students students gained teacher attention appropriately and inappropriately (Jay, Ricardo, Rebecca, and Patricia) ....................................... 113
INTRODUCTION

According to the Children's Defense Fund, on the average of every 8 seconds of the school day, an American student drops out of school. Each year, 700,000 young people graduate from the U.S. school system unable to read their diplomas (Morrison, 1990). Many of these students are not formally identified as disabled according to current criteria. However, they are at risk for a variety of problems, including educational failure (Simpson, Whelan, & Zabel, 1993). Large numbers of students come to school each day without the social skills or self-management skills to sit quietly in class, follow instructions, stay on-task, ask for help appropriately as needed, and work cooperatively with peers. Teachers must first teach students how to be successful in school and must exhibit good social skills themselves if they are to be successful at teaching their content area. Even more fundamental to the concerns of teachers is the perceived need of many educators and administrators for effective classroom management practices. Many teachers consider classroom behavior management an area of major concern in public schools today. In a survey of practicing teachers' perceptions of their preservice preparation for mainstreaming, Aksamit (1990) found that one of three major response themes indicated a need for more knowledge about classroom management in general and in particular, methods for working effectively with behaviorally impaired students.

Teaching adolescents can be a difficult and challenging task. Disruptive, noncompliant students can make it nearly impossible to get through the required curriculum. Teachers are required to use extra time and energy just to maintain order, thereby reducing the time spent attending to students' academic needs. Additionally, students must be productively engaged in schoolwork in order to learn. Productive engagement depends on the opportunity to concentrate, which is all but impossible in a classroom where students are off-task, disruptive, and generally not meeting classroom expectations. An effective classroom behavior management program is essential for
teachers and students. The lack of orderly classroom behavior results in physically and emotionally drained teachers, while students' academic performance and social development suffer. A behavior management program that helps keep disruptive students on-task, reduces behavior problems, and shifts the responsibility for managing behavior from the teacher to the student is desirable. The problem lies in finding a program that can be implemented in a classroom of 30 students without taking extensive time from teaching the curriculum. Regular educators legitimately question how they should find the time and the resources to teach students both academically and socially responsible behaviors.

Typically, problem students who are noncompliant and disruptive in class are referred to the office and possibly suspended from school (Nielsen, 1979; Walker, Colvin, & Ramsey, 1995). This removes them from the regular classrooms, where they tend to be distracting to the teacher and other students, but does not help them acquire the skills they lack, which caused them to be removed in the first place (Walker et al., 1995). With increasing numbers of students exhibiting disruptive and distracting behaviors, an alternative skill-building approach is necessary. Too many students need to be taught social skills and self-management skills for this to be accomplished in a pull-out setting; instead, programs that work with all students in regular classes need to be developed and field tested.

Maheady, Harper, Mallette, and Winstanley (1991) reported that “although researchers have demonstrated repeatedly that numerous behavioral interventions do exist for producing significant and generalizable changes in pupils’ behavior, very few of these procedures are ever implemented on a daily basis in classroom settings” (p. 177). Kauffman (1996) noted that research-based procedures are most likely to affect teaching practices if they entail minimal risk of harm, are practical and sustainable, are believable and socially valid, can be implemented with a high degree of fidelity, and are accompanied by systematic training programs. In a paper addressing procedures for bridging the
research-to-practice gap, Carnine (1997) has recommended that researchers increase the relevance, practicality, and transportability of their research. Teachers are likely to implement only those programs which they consider acceptable within the framework of typical classroom expectations and which require minimal effort and time (Tolan, Guerra, & Kendall, 1995). Students, like teachers, are consumers and will embrace only those interventions that they consider fair and enjoyable. Regarding peer-mediated interventions, Hall, Delquadri, Greenwood, and Thurston (1982) have recommended that intervention procedures be simple and easy to implement in order to ensure widespread dissemination of these procedures within educational settings. In summary, procedures that are simple to implement within the context of typical classroom practices and produce significant improvements with only minimal adult time and effort are most likely to be adopted by classroom teachers.

One possible method of addressing the problems of disruptive and off-task behavior in the classroom and in meeting teachers' needs for interventions that is simple to implement and not time consuming, is a classwide self-management program. Although the effectiveness of self-monitoring and self-management programs at decreasing inappropriate and disruptive behaviors and increasing on-task behaviors has been demonstrated in a number of studies and with a variety of populations (see Fantuzzo, Rohrbeck, & Azar, 1987; Nelson, Smith, Young, & Dodd, 1991; O'Leary & Dubey, 1979; Webber, Scheuermann, McCall, & Coleman, 1993, for reviews of self-management interventions as behavior management techniques), the purpose of most studies has been to examine the effects of these procedures with a few students within a self-contained or resource setting in which the teacher-student ratio is low. This makes it difficult to draw conclusions as to the feasibility of teaching these procedures to a larger group of students in a regular education classroom. In those studies examining the effects of these procedures with an entire class, either the researcher or a consultant taught the students the procedures
or the researchers did not collect teacher acceptability and feasibility data (Atkins & Rohrbeck, 1993; Glynn, Thomas, & Shee, 1973; Olympia, Sheridan, Jenson, & Andrews, 1994; Rooney, Hallahan, & Lloyd, 1984).

Using the "experimenting society model" (Campbell, 1988), an approach to solving practical problems involving exploratory experimentation using several alternative interventions, Johnson, Stoner, and Green (1996) evaluated the following classwide behavior management intervention strategies: a weekly class syllabus and individual student assessment intervention, active teaching of the classroom rules, and student self-monitoring. In contrast with many researchers who have concluded that rules alone are not effective in reducing problem behavior (O’Leary, Becker, Evans, & Saudargas, 1969; Rhode, Jenson, & Reavis, 1993), this case study approach indicated that active teaching of the classroom rules was associated with the most improvement in students’ disruptive and on-task behavior although student self-monitoring was associated with similar improvements. Another study that did not examine a self-management program per se examined two alternating peer intervention roles on independent work skills (Kohler, Schwartz, Cross, & Fowler, 1989). In this study, consultants taught students to monitor each others’ on-task behavior and work completion. Only one study was located that examined a classwide self-management program taught to an entire class by the teacher, and that assessed acceptability of the procedure by the teacher (Miller, Strain, Boyd, Jarzynska, & McFetridge, 1993). In this study, the authors examined a do-say-reinforcement model with preschoolers self-assessing their on-task behavior by using a thumbs-up or thumbs-down gesture. No studies were located that involved a general educator teaching a classwide self-management, peer-assisted procedure to secondary students within the framework of content instruction. Regular classroom settings typically have 25-35 students, a broad mix of student abilities, and considerable variability in skills demonstrated by teachers. Using a classwide approach in this type of setting potentially
serves two important purposes: first, it provides opportunities to intervene with children demonstrating problem behaviors; and second, it provides all children with skills that promote independent and responsible behavior (Miller et al., 1993).

In summary, there is a need for effective programs to teach students self-management and social skills that regular educators are able and willing to implement in a regular classroom. Researchers examining acceptability and feasibility of programs suggest that regular educators are more likely to use programs that are practical, require minimal teacher effort, are acceptable to teachers and students, and fit in with regular classroom practices. In light of teachers’ and administrators’ concerns about student discipline and classroom management, these self-management programs would need to produce marked changes in students’ on-task behavior, use of social skills, and academic-related behaviors. Research is particularly lacking in documenting the feasibility and practicality of classwide self-management procedures. In this study, the effects of the PAL Game on meeting classroom expectations (on-task behavior) of the class and of targeted at-risk students were investigated. The PAL Game consists of teacher instruction in self-management and social skills, a classwide self-monitoring game in which two teams of peer dyads rate themselves and each other, and a teacher-rated mystery match.
Discipline is a major problem in public schools today. Disruptive behavior in school settings ranges from minor classroom infractions, including noncompliance, talking out and talking back, truancy, smoking, and fighting, to major offenses such as assault, drug use, and stealing. Disruptive behavior in the classroom reduces academic learning time or engaged time, not only for the disruptive student, but also for all students within the class. Teachers who must spend time managing disruptive behavior have less time available to teach. Another approach to teacher management of student behavior is training students to manage their own behavior. Not only might this be more feasible for a teacher to implement in a regular education classroom, but it may also allow teachers to intervene with students demonstrating problem behaviors, as well as teaching all children skills that promote responsible behavior. Students who learn to be responsible for managing their own behavior may become more self-reliant and independent, attributes that are valued in life as well as in school.

I conducted a computer search of the ERIC and PsychLit databases to identify research articles on the subject of self-management procedures as classroom behavior management techniques, classwide programs for improving behavior, and peer-assisted interventions. I hand-searched education journals too recent to be included in the databases. In light of the need for programs that teachers are willing and able to implement, I searched the literature on acceptability and feasibility studies of programs to improve behavior. Keywords used in the literature search included “self-management,” “self-monitoring,” “classwide,” “behavior management,” “peer-assisted,” “acceptability,” and “feasibility.” Additional items were taken from reference lists of identified studies.

Given the problem addressed in this research, the review of literature is organized as follows. First, self-management is described, its components and researched benefits. Second, the effectiveness of self-management on improving appropriate classroom
behavior is reviewed. Reviewed third are those studies examining teacher acceptability of interventions to improve behavior. Fourth, the identified studies for their acceptability to teachers and feasibility of implementation based on the categories that influence teacher use of an intervention identified in the acceptability/feasibility literature are analyzed. Finally, the use of peers to mediate or assist in behavior change strategies is examined.

Components and Benefits of Self-Management

Helping at-risk students to become successful in class and in life requires a focus on developing skills in self-monitoring, self-management, and interactions with peers and adults. Students who are responsible can manage their own behavior and enable teachers to shift their time and attention from classroom management to teaching (Kazdin, 1975; Rosenbaum & Drabman, 1979). Young, West, Smith, and Morgan (1991) developed a curriculum for teaching self-management skills in schools which uses three basic strategies: self-monitoring, self-evaluation (including decision-making and goal setting) and positive reinforcement. According to Young, West, Li, and Peterson (1997), self-monitoring consists of teaching students to reflect upon their recent performance and record the number of occurrences of certain behaviors or rate the overall quality of performance. Self-evaluation consists of (a) determining what the expectation or standards for acceptable behavior are for each of the settings in which the behavior is monitored; (b) comparing the counts or ratings of behavior (based on self-monitoring) to the standards; and (c) determining whether or not the behavior is acceptable or should be changed in either quantity or quality. Reinforcement is administered by the teacher for both appropriate classroom behavior and the correct use of self-monitoring and self-evaluation procedures. As students become proficient in the use of the self-management strategies, teacher-delivered reinforcement can be reduced and replaced by student self-reinforcement (e.g., self-praise; Young et al., 1997). The three strategies are interactive and form a cycle, with
self-evaluation and reinforcement often following self-monitoring. A self-management program combines the strategies to teach students responsibility for their own social behavior and academic performance.

Interestingly, self-management includes many of the same components as teacher-delivered instruction. According to Agran (1997), the distinguishing characteristic of self-management is that students are responsible for managing the procedures. Rather than the teacher presenting an antecedent, waiting for a response, consequeating it, and hoping that it has sufficient strength to allow the student to behave as desired, the student is taught to manipulate the antecedents and consequences. Baer (1984) argued that this greatly increases the saliency or power of these events. In Mayer’s (1995) paper on preventing antisocial behavior, he recommended helping youth to become more skilled in self-management and aware of the individual factors that contribute to antisocial behavior. He suggested teaching young people to monitor their behavior, to recognize the communicative purpose of behavior and the antecedents to behavior. Teaching students self-management skills is potentially an effective preventive intervention. In summary, teaching students to direct and manage their own learning and behavior has produced benefits, which include increasing appropriate behavior, saving teachers’ time, promoting generalization, creating self-reliant and independent learners, and potentially serving as a preventive intervention (Young et al., 1991).

Of most interest to this research are the benefits of saving teachers’ time and increasing appropriate behavior. Young et al. (1991) pointed out that self-management skills are valued by our society simply because constant monitoring of a person’s every action is neither feasible nor practical. Teaching students to manage their own behavior reduces the amount of time the teacher must spend managing student behavior and allows the teacher to spend more time teaching. Sainato, Strain, Lefebvre, and Rapp (1990, cited in Agran, 1997) taught five children, four of them preschoolers with autism, to evaluate
their behavior during independent work time. The students were given a recording sheet with pictures of the target behaviors, including listening to teacher's directions, working quietly, and raising their hand to signal completion of work. The students were asked to indicate with a happy or frowning face how they believed they behaved. The students showed dramatic improvements in their behavior, although the teacher required only one third of the behavior-management effort to produce the same outcome.

**Increasing Appropriate Behavior Using Self-Management Programs**

Many researchers have demonstrated that students can learn to use self-management components such as self-monitoring, self-instruction, self-evaluation, and self-determination and administration of reinforcement to regulate their own behaviors and decrease reliance on others. Although there are many reviews of self-management research with people with severe disabilities (Browder & Shapiro, 1985; Harchik, Sherman, & Sheldon, 1992; Hughes, Korinek, & Gorman, 1991), much of the research in this area with students with mild or moderate disabilities or without disabilities has focused on one component in particular, self-monitoring. Webber et al. (1993) reviewed 27 studies on the use of self-monitoring as a behavior management technique. They found that self-monitoring can be successfully used with special education students of various ages in various settings to increase attention to task, positive classroom behavior, and some social skills. Webber et al. recommended that researchers compare the effects of self-monitoring to teacher monitoring as a method of controlling student behavior.

Reid (1996) reviewed 23 studies of self-monitoring with students with learning disabilities. He examined the effects of self-monitoring on on-task behavior and academic variables and then compared the effects of self-monitoring of attention and self-monitoring of performance on on-task behavior and academic responding. Although five of the studies reviewed utilized treatments that included self-reinforcement or external contingencies in
combination with self-monitoring, he analyzed only conditions that used self-monitoring alone. The most common dependent variable in self-monitoring research was on-task behavior. In every study but one, self-monitoring increased on-task behavior and improved the rate or number of academic responses. Reid also found evidence suggesting that self-monitoring of performance was superior to self-monitoring of attention in some instances.

Those researchers who have examined the effects of a self-management training package including self-monitoring, self-evaluation, and reinforcement have demonstrated the effects of self-management training on increasing on-task behavior (Blick & Test, 1987; McLaughlin, Krappman, & Welsh, 1985; Prater, Joy, Chilman, Temple, & Miller, 1991); decreasing inappropriate classroom behaviors (Prater, Plank, & Miller, 1991; Sugai & Rowe, 1984); improving creative writing (Glomb & West, 1990); and improving the maintenance and generalization of treatment gains to other settings (Rhode, Morgan, & Young, 1983; West, Young, Mitchem, & Peterson, 1996). Although the wide range of outcomes improved by self-management is encouraging, of interest in this study is the effectiveness of self-management training on increasing appropriate classroom behavior, specifically, meeting classroom expectations including being on-task, following instructions, and appropriately gaining the teacher's attention.

Given the recent focus of many researchers on a comparison of the effects of self-monitoring of attention and self-monitoring of academic performance (Harris, Graham, Reid, McElroy, & Hamby, 1994; Lam, Cole, Shapiro, & Bambara, 1994; Maag, Reid, & DiGangi, 1993), with preliminary findings suggesting the relative superiority of self-monitoring of performance, why continue to examine the effects of self-management of on-task behavior? DiGangi, Maag, and Rutherford (1991) suggested that self-monitoring on-task behavior is a general strategy that can be applied across academic domains and, therefore, may be more time efficient and promote generalization more readily than
developing individual content-specific, self-management procedures. In light of the stated needs for classroom management procedures that are acceptable to teachers and require minimal time, targeting on-task behavior, rather than academic performance, may be a more pertinent and appropriate strategy.

Self-management studies have targeted students with disabilities in settings such as self-contained classes (Kern, Dunlap, Childs, & Clarke, 1994) or resource rooms (Hogan & Prater, 1993). Self-management has produced improved behavioral outcomes for students with learning disabilities (Hogan & Prater, 1993; Prater, Hogan, & Miller, 1992; Rooney, Polloway, & Hallahan, 1985), behavioral disorders (Rhode et al., 1983; Smith, Young, West, Morgan, & Rhode, 1988), and attention-deficit hyperactivity disorder (Christie, Hiss, & Lozanoff, 1985; Edwards, Salent, Howard, Brougher, & McLaughlin, 1995), and for general education students (Fantuzzo et al., 1987).

The potential time-saving aspects of self-management, its documented effectiveness, adaptability, and portability, have encouraged educators to use it to promote inclusion (King-Sears & Cummings, 1996). In addition, researchers use self-management to promote maintenance and generalization of skills from training to general education settings (Peterson et al., 1996; Rhode et al., 1983). In most of these studies, students were typically taught to self-manage their behavior in a resource room or self-contained setting with one-to-one or small group instruction. A question of interest, then, is whether it is acceptable to, or feasible for, a classroom teacher to teach and implement these same procedures in a typical class of 25 or more students.

Acceptability and Feasibility of Classroom Interventions

Definition of Terms

Acceptability refers to the judgments of teachers and students whether the
intervention procedures are appropriate, fair, and reasonable for the students (and teacher) and for the target behavior (Kazdin, 1981). Feasibility refers to the availability of sufficient resources, skills, training, and time to implement an intervention as described.

**Factors Influencing Teachers’ Use of Interventions**

Maheady and colleagues (1991) reported that “although researchers have demonstrated repeatedly that numerous behavioral interventions do exist for producing significant and generalizable changes in pupils’ behavior, very few of these procedures are ever implemented on a daily basis in classroom settings” (p. 177). In a review of literature on the acceptability of behavioral interventions, Reimers, Wacker, and Koeppl (1987) discussed the factors reported to influence ratings of acceptability. These included problem severity, treatment approach, time needed for treatment implementation, treatment integrity, effectiveness of treatment, and treatment understanding. As Witt (1986) pointed out, efficacy is not the only factor in determining a teacher’s use of a program. He noted that a teacher’s decision to use an intervention is based on a wide array of factors. In a series of studies, Elliot, Witt, and colleagues (Elliot, Witt, Galvin, & Peterson, 1984; Von Brock & Elliot, 1987; Witt, Elliot, & Martens, 1983; Witt & Martens, 1983) expanded the groundbreaking work of Kazdin in the area of acceptability of child treatment techniques (Kazdin, 1981; Kazdin, French, & Sherick, 1981) and identified four factors which have been linked to teachers’ decisions to use and continue using an intervention. These include effectiveness, time and resources required, theoretical orientation of the intervention, and ecological intrusiveness.

**Effectiveness.** Baer, Wolf, and Risley (1968), in a seminal paper on applied behavior analysis, stated, “If the application of behavioral techniques does not produce large enough effects for practical value, then application has failed. Its practical value, specifically, its powers in altering behavior enough to be socially important, is the essential
criterion” (p. 96). While this may be true, as Witt noted (1986), it is not the sole criterion used by teachers to identify interventions they will use. Kazdin (1981), for example, found no relationship between effectiveness and consumer satisfaction with interventions. Witt (1986) suggested, however, that data supporting the effectiveness of an intervention is probably not as important as whether a teacher believes the intervention to be effective. This suggestion was supported in a study by Whinnery, Fuchs, and Fuchs (1991) who found a relationship between perceived effectiveness, rather than empirically supported effectiveness, and teacher’s willingness to implement an intervention. Because the research conducted by Kazdin, Witt, and colleagues was analogue in nature, this is not surprising. A study in which teachers are asked to rate the acceptability of interventions based on hypothetical case studies is indeed likely to produce different responses than one in which the teachers are trained to implement the intervention, implement the procedure, and then are asked to rate its acceptability. Indeed, in the only non-analogue study located which examined in vivo ratings of treatment acceptability by children, Shapiro and Goldberg (1990) found that students rated all interventions as more acceptable after experiencing the treatment. This finding may be an example of the factor labeled treatment understanding by Reimers et al. (1987), who noted the difficulty of rating the acceptability of something with which one is not familiar.

**Time and material resources.** Not surprisingly, the available research supports the notion that teachers prefer interventions that require less time (Martens, Witt, Elliot, & Darveaux, 1985; Witt et al., 1983; Witt, Martens, & Elliot, 1984). When these authors examined teacher satisfaction with classroom interventions as a function of the amount of time to implement them, there was an inverse linear relationship between the amount of teacher time required and the degree to which teachers found an intervention suitable for use in the typical classroom environment. Exceptions to this were found only with regard to the severity of the presenting behavior problem. When interventions were being applied
to more severe behavior problems, they were generally rated as more acceptable than for mild behavior problems. The advantages to keeping resources required to a minimum are fairly obvious. Most teachers are resistant to interventions requiring numerous or costly materials, additional personnel, or complicated organization and book-keeping skills.

**Theoretical orientation.** The research findings as to the effects of theoretical orientation are mixed. Kazdin and Cole’s (1981) findings that humanistic descriptions were evaluated more favorably than behavioral descriptions, and that highly technical jargon was preferred over simple language, may well be due to the population surveyed—undergraduate college students rather than practicing teachers. In contrast, Witt, Moe, Gutkin, and Andrews (1984) surveyed practicing teachers and found that the same intervention, staying in at recess, was considered significantly more positive when described using pragmatic language. Hall and Didier (1987) found that student teachers regarded the humanistic approach as most acceptable, followed by the behavioral approach, with the pragmatic approach rated as least acceptable. Incidentally, these authors did note the need to examine the relationship between practicing teachers’ actual use of an intervention and its acceptability.

**Ecological intrusiveness.** Intrusiveness refers to the extent to which interventions interfere with the behavioral regularities in the classroom. Tolan et al. (1995) referred to the need for interventions to fit into daily classroom practices and routines. To this end, researchers must ask what effects an intervention might have (other than the desired effect on improving behavior) on the ecology of the classroom when introduced into a classroom setting. For example, intervention side effects on the behavior of children other than the target children may dissuade a teacher from implementing an otherwise effective procedure. Another potential concern is the extent to which an intervention singles out students who do not perform academically or behaviorally as well as their peers. Regarding this issue, Witt (1986) stated, “We sometimes ask teachers to alter the existing regularities in the classroom
without first knowing what those regularities are, without knowing the effects and side
effects of changing the existing regularities, and without any knowledge that what is being
replaced is inferior to what is being suggested” (p. 42).

Bridging the Research-To-Practice Gap

Researchers interested in bridging the research-to-practice gap have noted that the
issues they address are inextricably linked to those indicated by researchers into
acceptability and feasibility of treatments. Kauffman (1996) noted that research-based
procedures are most likely to affect teaching practices if they entail minimal risk of harm;
are practical and sustainable; believable and socially valid; can be implemented with a high
degree of fidelity; and are accompanied by systematic training programs. Teachers must not
only be willing to implement a program, they must also have the skills and resources to
implement it effectively (Kauffman, 1996). Effective programs provide training and
support for intervenors and carefully monitor program implementation to ensure that the
program is implemented as intended. In a paper presenting a rationale and suggestions for
improving the quality of and market demand for research findings, Carnine (1997)
suggested evaluating the quality of research in terms of trustworthiness, usability, and
accessibility which he defined as follows. Trustworthiness refers to the confidence
practitioners can have in research findings. Usability speaks to the practicality of the
research-based practices for those who attempt to put them into practice. Accessibility is a
measure of the extent to which findings are available to those wanting to use them. As
Witt and Elliot (1985) stated, “The notion that teachers will choose the most acceptable
intervention is predicated on the assumption that teachers are aware of an array of different
interventions” (p. 266). To improve the trustworthiness, usability and accessibility of
research findings, Carnine has recommended that researchers increase the relevance,
practicality, and transportability of their research.
In summary, if a program is to be of value to students, we must ensure that it is practical, feasible, and acceptable to consumers. Teachers are likely to implement only those programs which they consider acceptable within the framework of typical classroom expectations and which require minimal effort and time (Tolan et al., 1995). The question remains, however, how does one quantify these concepts? Table 1 shows how the categories that Witt and colleagues found to influence teachers’ decisions to use and continue using an intervention were operationalized. The table shows categories identified in the research, terms developed to illustrate the categories, and finally, definitions of terms used to code the articles.

Acceptability and Feasibility of Self-Management Programs

Self-management procedures have been used infrequently on a classwide basis to improve behavior despite the potentially beneficial and preventive effects. In an attempt to identify potential reasons for these procedures not being used in classrooms on a regular basis, studies of self-management interventions for information on their apparent effectiveness, acceptability to teachers, and feasibility of implementation based on categories drawn from the literature base regarding teachers’ acceptability and use of interventions were examined. To be included in this examination, the article had to meet the following criteria: (a) be classroom or school-based; (b) target regular education students or those with mild/moderate disabilities (learning disabilities, emotional and behavioral disorders and not those with severe disabilities); (c) examine social and academically related behaviors and rather than academic performance; and (d) use a package of at least two of the following components of self-management: goal-setting, self-monitoring, self-instruction, self-recording, self-evaluation or self-assessment, self-determination of reinforcement, and self-administration of reinforcement. Two classwide self-management studies that addressed academic performance (Atkins & Rohrbeck,
<table>
<thead>
<tr>
<th>Category</th>
<th>Coding Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Acceptability</td>
<td>Acceptability</td>
<td>was defined as the judgments of teachers and students of whether treatment procedures are appropriate, fair, and reasonable for the students (and teacher) and for the target behavior (Kazdin, 1981). These data typically took the form of surveys of participants in the study. Occasionally, the researchers reported comments made by the teachers or students about the intervention.</td>
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<tr>
<td>Effective-ness</td>
<td>Effects on</td>
<td>referred to the reported effectiveness of the intervention on the behavior(s) of target students and other students.</td>
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<tr>
<td></td>
<td>child/others</td>
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<tr>
<td>Time and material resources</td>
<td>Resources required</td>
<td>referred to the materials, equipment, additional personnel, or preparation required for training in the procedure or implementation of the procedure.</td>
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<td></td>
<td>Time needed to train</td>
<td>referred to the amount of time reported in the study to train the teacher in the intervention (if the teacher trained the students) and/or the amount of time required to train the students in the intervention.</td>
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<td></td>
<td>Time to implement</td>
<td>addressed the time needed to implement the intervention which exceeded the time that the teacher typically required to teach the class.</td>
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<td></td>
<td>Trainer (skill required)</td>
<td>referred to the intervener. In an attempt to assess the skill required to implement the procedure, data were collected on who carried out the training of the students and any additional procedures required to implement the intervention.</td>
</tr>
</tbody>
</table>

(table continues)
Theoretical orientation

Ecological intrusive ness

Intrusiveness

This was not evaluated because findings on the influence of this issue are inconclusive.

This refers to the extent to which procedures single out target students, interfere with normal classroom routines, or adversely impact non-target students. This was not applicable if the entire class was involved or participated in the self-management intervention.

Resources, time to train and implement

Also provide some indication of the intrusiveness of an intervention. For example, if an intervention requires the teacher to keep track of points, or provide 10-15 minutes a day for students to track, report, or provide feedback, this intervention may be considered intrusive by teachers.

18 articles were indicators of a program’s effectiveness, acceptability, and feasibility for use in regular classroom. Table 2 shows the results of this analysis of self-management studies. To facilitate comparison across types of self-management programs, the studies are further categorized depending on the setting in which training and implementation in the self-management intervention took place. The first category, in which training and implementation took place in a resource room or self-contained setting,
<table>
<thead>
<tr>
<th>Reference</th>
<th>N gender</th>
<th>Age or grade/disability</th>
<th>Target behavior</th>
<th>Intervention description</th>
<th>Resources required</th>
<th>Time to train/implment</th>
<th>Trainer (skill required)</th>
<th>Effect on child/others intrusiveness</th>
<th>Accept' ty-teacher/student</th>
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</thead>
<tbody>
<tr>
<td>Hughes &amp; Boyle, 1991</td>
<td>2 M 1 F</td>
<td>10 yrs 9 yrs Mod MR</td>
<td>On-task, rate of task completion</td>
<td>Self-monitor w/ and w/o tokens</td>
<td>Recording sheet, tape recorder</td>
<td>2 x 10 mins NR (minimal teacher time)</td>
<td>Teacher trained students</td>
<td>Improved on-task and rate of completion Unintrusive</td>
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<tr>
<td>Kern, Dunlap, Childs, &amp; Clarke, 1994</td>
<td>6 M 1 F</td>
<td>11-13 yrs EBD</td>
<td>On-task and disruptive behavior</td>
<td>Self-monitor, record, reinforcement</td>
<td>Tape recorder with signal, recording sheet</td>
<td>10 minute lesson &amp; 2 days practice for each dyad/NR (minimal teacher time)</td>
<td>Consultants trained students</td>
<td>Improved behavior; no info on academic performance /whole class involved</td>
<td>No/No</td>
</tr>
<tr>
<td>McLaughlin, 1984</td>
<td>9 M 3 F</td>
<td>10-12 yrs BD</td>
<td>Assignment completion, on-task accuracy of self-recording</td>
<td>1. Self-recording; 2. Self-recording plus contingent R+ 3. Control</td>
<td>Recording sheet</td>
<td>NR/minimal-random spot checks of accuracy by teacher</td>
<td>Teacher and experimenter trained students</td>
<td>1 &amp; 2 improved on-task and output; Unintrusive</td>
<td>NR/Students liked and found it did not interrupt school work</td>
</tr>
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Table 2

Classroom-Based Self-Management Studies

<table>
<thead>
<tr>
<th>Training and Implementation In Self-Contained/Resource</th>
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<tbody>
<tr>
<td>Hughes &amp; Boyle, 1991</td>
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<tr>
<td>Kern, Dunlap, Childs, &amp; Clarke, 1994</td>
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<tr>
<td>McLaughlin, 1984</td>
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<tr>
<td>Reference</td>
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<tr>
<td>Prater, Joy, Chilman, Temple, &amp; Miller, 1991</td>
</tr>
<tr>
<td>DiGangi, Maag, &amp; Rutherford, 1991</td>
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<tr>
<td>Edwards, Salant, Howard, Broughter, &amp; McLaughlin, 1995</td>
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</tbody>
</table>

Training in Resource/Use in Regular Classroom
<table>
<thead>
<tr>
<th>Reference</th>
<th>Gender</th>
<th>Age or grade</th>
<th>Target behavior</th>
<th>Intervention description</th>
<th>Resources required</th>
<th>Time to train /implement</th>
<th>Trainer (skill required)</th>
<th>Effect on child/others intrusive</th>
<th>Accept’ty-teacher/student</th>
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<tbody>
<tr>
<td>Hogan &amp; Prater, 1993</td>
<td>M</td>
<td>15 yr/BD</td>
<td>Tutoring</td>
<td>Vocab lists, prompt card, head phones</td>
<td>PT-3 days/15 mins. Per day; SI/SM-3 days trng. /minimal T time</td>
<td>Trainer (not teacher) trained separately</td>
<td>SI/SM improved tutor behavior. PT improved academic/on-task of tutee. SI/SM less intrusive than PT</td>
<td>No/No</td>
<td></td>
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<tr>
<td>Kohler, Schwartz, Cross, &amp; Fowler, 1989</td>
<td>M</td>
<td>5th grade/3-Low achiever</td>
<td>Peer tutoring, Self-instruction &amp; monitoring</td>
<td>Good Beh. List, Good Work List</td>
<td>2 x 15 min. Individual lessons/10 mins. P/d to check &amp; give feedback to each other</td>
<td>Consultants trained students separately</td>
<td>Improved appropriate behavior and math completion but not accuracy</td>
<td>T-very acceptable &amp; would continue/ S-very satisfied except having points withheld</td>
<td>Fairly intrusive</td>
</tr>
<tr>
<td>Maag, Rutherford, &amp; DiGangi, 1992</td>
<td>M</td>
<td>7-11 yrs/LD</td>
<td>On-task &amp; academic productivity (# math problems)</td>
<td>Aide to cue students, recording sheet</td>
<td>NR/NR (minimal except for cueing procedure)</td>
<td>NR</td>
<td>Marked improvement in on-task &amp; productivity / Aide cue = less intrusive than beep tape</td>
<td>No/No</td>
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<td>Reference</td>
<td>N</td>
<td>Age or grade/di-disability</td>
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<td>Resources required</td>
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<td>Accept' ty-teacher/student</td>
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<tr>
<td>Rhode, Morgan, &amp; Young, 1983</td>
<td>6</td>
<td>6-10 yrs. BD</td>
<td>Generalization of appropriate classroom behavior to a regular class</td>
<td>Recording sheet</td>
<td>NR/NR</td>
<td>??</td>
<td>Improved appropriate behavior generalized and maintained when matching faded. Unintrusive in regular class</td>
<td>T. Very satisfied &amp; would support use again; relatively easy to implement. Students liked program &amp; points exchange; thought it improved work &amp; beh.</td>
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<tr>
<td>Atkins &amp; Rohrbeck, 1993</td>
<td>19 M</td>
<td>14 F</td>
<td>5th grade/ NR</td>
<td>Improve math performance</td>
<td>Group / indiv. Goal-setting, self-</td>
<td>15 x 40 min. lessons</td>
<td>Ph.D. Psychologist &amp; grad students</td>
<td>Math performance improved in cooperative gp./Whole class involved</td>
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<td></td>
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<td></td>
<td>NR</td>
<td></td>
<td>observation, evaluation, &amp; reinforcement</td>
<td>to train/ (same as training)</td>
<td></td>
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<tr>
<td>Ballard &amp; Glynn, 1975</td>
<td>37</td>
<td>3rd grade/ NR</td>
<td>Quantity self-assess &amp; recording; R+ contingent on # sentences / action word / describing words</td>
<td>Chart, timer, clock, monitor, recording sheet</td>
<td>NR/8 more min. to record</td>
<td>Teacher &amp; children carried out all tasks</td>
<td>Increased writing length &amp; quality, &amp; on-task/ Whole class involved</td>
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<td></td>
<td></td>
<td>NR</td>
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<td>No/ Indirect assessment in that students asked to do this when teacher absent</td>
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<td></td>
<td></td>
<td></td>
<td>NR</td>
<td></td>
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<td></td>
<td></td>
<td>No/No</td>
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</tbody>
</table>

(Classwide Training and Implementation)
<table>
<thead>
<tr>
<th>Reference</th>
<th>N gender</th>
<th>Age or grade/ disability</th>
<th>Target behavior</th>
<th>Intervention description</th>
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<th>Effect on child/others intrusiveness</th>
<th>Accept’ty-teacher/student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnson, Stoner, &amp; Green, 1996</td>
<td>25</td>
<td>7th grade NR</td>
<td>Appropriate engaged, disruptive behavior</td>
<td>1. Weekly class syllabus/indiv. assessment; 2. Active teaching rules; 3. self-monitor</td>
<td>Syllabus; poster; recording sheet</td>
<td>Minimal</td>
<td>Each teacher trained own class; consultant advised</td>
<td>Minimal</td>
<td>Surveyed teachers: 2 and 3 most acceptable and easy/No</td>
</tr>
<tr>
<td>Miller, Strain, Boyd, Jarzynka, &amp; McFetridge, 1993</td>
<td>14-17</td>
<td>Preschool 4 M target students</td>
<td>On-task, off-task and competing behavior</td>
<td>Do-say-R+ model Self-assess (thumbs-up/down), with R+ contingent on match with T’s. rating</td>
<td>Poster with picture prompts</td>
<td>2.5 hour training with each T and aide/weekly mtgs. For support &amp; feedback</td>
<td>Experimenter trained T and aide in procedure; T taught students</td>
<td>Clear improvements for 3 of 4 students; 4th student showed improvement after procedure modification. Whole class involved.</td>
<td>T-very satisfied with ease of implementation and benefits to target students, classmates and themselves</td>
</tr>
<tr>
<td>Reference</td>
<td>Gender</td>
<td>Age or Grade/Disability</td>
<td>Target Behavior</td>
<td>Intervention Description</td>
<td>Resources Required</td>
<td>Time to Train/Implement</td>
<td>Trainer (Skill Required)</td>
<td>Effect on Child/Others Intrusiveness</td>
<td>Accept'ty-Teacher/Student</td>
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<tr>
<td>Olympia, Sheridan, Jenson, &amp; Andrews, 1994</td>
<td>6 M</td>
<td>6th grade</td>
<td>Completion and accuracy rates of math homework assignments</td>
<td>Self-monitoring, instruction, evaluation, and reinforcement in a peer-mediated cooperative learning structure Student-vs T. Selected goals</td>
<td>Recording sheet, 7 page procedures handbook, folder with team member roles</td>
<td>2 days (lessons)/10-15 min. Daily team meetings</td>
<td>Investigator trained all students in groups of 8</td>
<td>Increase in completion rate greater with student selected goals; data on accuracy-mixed. Involved whole class</td>
<td>T. found acceptable and effective/Students found acceptable and fair and moderately effective</td>
</tr>
<tr>
<td>Rooney, Hallahan, &amp; Lloyd, 1984</td>
<td>2 M, 2 F</td>
<td>2nd grade, 2 LD</td>
<td>On-task</td>
<td>1. Self-monitor, and-record 2. Self-monitor, record, and teacher R+ contingent on correct use of procedures</td>
<td>Recording sheet Two brief training sessions/NR</td>
<td>Teacher trained students as a class</td>
<td>1. Improved on-task behavior 2. R+ improved on-task behavior beyond self-monitor and record.</td>
<td>No/No</td>
<td></td>
</tr>
</tbody>
</table>
consists of four studies. The second category, in which training occurred in a resource or separate location and implementation in a regular classroom, comprises seven studies. One study (McDougall & Brady, 1997) was included in this category although it is unclear where and how target students were trained. The third category, in which training and implementation took place on a classwide basis in a regular education classroom, consists of seven studies. In each of these three categories, the table is organized alphabetically by reference. The first three items address characteristics of the target population and behavior. The next item provides a list of the components the authors described as comprising the self-management intervention(s). The last five columns present the information on the seven items defined in Table 1 which were identified as indicators of effectiveness, acceptability, and feasibility. Within each section below, the results of the analysis of the studies are summarized first by category (i.e., training and implementation setting) and then across the categories.

**Target Population Characteristics**

Not surprisingly, the populations examined in the first two categories (training and implementation in self-contained setting, training in separate setting, implementation in the regular classroom) were mainly students with disabilities including learning disabilities, mental retardation, attention deficit disorder and behavior disorders. Of these 11 studies, only one study examined students without disabilities; however, these students were described as low achievers in math (Kohler et al., 1989). The students ranged in age from 7 to 15. The number of students trained in self-management procedures ranged from 2 to 6 in these first two categories of studies. In the seven studies with a classwide focus, target populations included preschoolers, second, third, fifth, sixth, and seventh graders without reported disabilities for the most part, although one study collected data on two students with learning disabilities (Rooney et al., 1984). The diversity of the populations examined is perhaps an indicator of the flexibility and widespread applicability of self-management
interventions. In the category of classwide studies, the number of students was not surprisingly higher than for the studies in the first two categories and ranged from 14 to 37.

**Target Behavior**

In the first category of studies, all four studies addressed on-task behavior. Two of the four studies also collected data on rate of task completion (Hughes & Boyle, 1991; McLaughlin, 1984). In the second category, all seven studies addressed a measure of on-task or appropriate behavior. With the exception of the Rhode et al. (1983) article, each study also examined some measure of academic performance ranging from math productivity and accuracy to reading performance. Six of seven classwide studies included a measure of on-task or appropriate classroom behavior. Two focused solely on an academic behavior; one was math performance (Atkins & Rohrbeck, 1993) and the other was math homework completion and accuracy rates (Olympia et al., 1994).

**Intervention Description**

Common elements across all 18 studies included the act of self-monitoring and self-recording in some fashion. For example, all studies that reported the use of materials, except one (Miller et al., 1993), used a recording sheet of some kind for students to record their behavior or academic performance. The Miller study targeted preschoolers who reported whether they were meeting expectations using a thumbs-up or thumbs-down gesture, an appropriate modification in light of the age of the children. What differed across studies was the use of reinforcement and whether the teacher or student determined and administered the reinforcement. Self-reinforcement is, in essence, self-evaluation. Students must assess their behavior, evaluate whether they have earned reinforcement, and then reinforce themselves by praising or administering some other type of reinforcement. The definition for self-reinforcement used here is the same as that used by the researchers in these studies -- verbal praise administered by the student.
In the first category of studies, reinforcement procedures were in place for three of four studies and the self-management procedures were added. McLaughlin (1984) compared the three groups of students, one using self-recording, a second using self-recording plus reinforcers contingent on a match with an adult, with a control group. Both self-recording groups improved and maintained treatment gains significantly more than the control group. There was no statistically significant difference between the performance of the two self-recording groups.

In the second category, students in two studies determined and administered reinforcement (verbal praise) themselves (DiGangi et al., 1991; McDougall & Brady, 1998). In the Kohler et al. study (1989), three peer dyads took turns monitoring and reinforcing each others’ behavior and academic performance, giving verbal praise and awarding or taking away points. In three studies (Edwards et al., 1995; Maag et al., 1991; Rhode et al., 1983), contingent reinforcement was delivered by the teacher for meeting goals or matching ratings. The schedule of reinforcement was then systematically faded in the Rhode et al. study (1983). In the Hogan and Prater study (1993), the intervention did not include any reinforcement.

Of the seven classwide studies, students in four of the studies determined and administered reinforcement themselves (Atkins & Rohrbeck, 1993; Ballard & Glynn, 1975; Glynn et al., 1973; Olympia et al., 1994). In one study (Miller et al., 1993), preschoolers received reinforcement based on a match with the teacher’s rating. In the Johnson et al. (1996) study, the teacher who selected the self-monitoring intervention awarded points to students for self-monitoring as part of the students’ grades. In the seventh study, Rooney et al. (1984) examined the effectiveness of teachers reinforcing students for self-recording the correct number of times. Compared to the first two categories of studies in which students in only 2 out of 11 studies administered self-reinforcement, typically described by authors as self-praise, students in 4 out of 7 classwide studies used self-reinforcement. In
light of the labor-intensive nature of teacher-administered reinforcement systems, it is not surprising that there appears to be a tendency of classwide studies to use self-reinforcement. One additional finding of this analysis was related to the large variety in type and delivery of reinforcement which existed in the second group of studies in which students were trained separately and then implemented the procedures in a regular setting. This ranged from no reinforcement, through self-reinforcement, peer-administered reinforcement to teacher-delivered reinforcement contingent on matching goals or ratings.

Resources Required

Requirements for these self-management programs included materials and personnel. One type of material that was consistently used across all studies except one was some type of recording sheet. Other materials required included tape recorders, headphones, timers, posters and prompt cards, and a procedural handbook (Olympia et al., 1994). Personnel required ranged from someone to cue students (Maag et al., 1992), to a classroom monitor (Ballard & Glynn, 1975) to observe and record behavior. There appear to be no clear differences between categories of studies as far as resources required to implement the procedures, although typically, the first two categories had lower teacher-student ratios with a teacher assistant who could assist with the implementation.

Time Required to Train

This information was typically not reported in the first two categories of 11 studies. Of these 11 studies, only 5 noted the time required to train (Hughes & Boyle, 1991; Kern et al., 1994; Edwards et al., 1995; Hogan & Prater, 1993; Kohler et al., 1989). Unfortunately, even this information is difficult to compare across studies because authors did not use the same metric. For example, Kern et al. (1994) described the training as one 10-minute lesson and 2 days of practice for each dyad, Edwards et al. (1995) wrote of 5 days of training, and Hughes and Boyle (1991) stated that training took two 10-minute
sessions. Similarly, in only three of seven classwide studies did the authors report the length of time to train the students in the self-management procedures and again, the metric used varied from study to study. Although Miller et al. (1993) did not report the amount of time to train the students, they did note the 2.5 hours of training that the teachers required. Other authors documented training time as ranging from two brief training sessions (Rooney et al., 1984), through 2 days (Olympia et al., 1994), to 15- to 40-minute lessons (Atkins & Rohrbeck, 1993), which apparently also referred to the length of the study. It is possible that teachers’ resistance to using some interventions is influenced by their perceptions of how time consuming the intervention is. Teachers might be more likely to decide to use an intervention if they know at the outset how much time it required both to train students and to implement the program in a classroom. This is an empirical question which can only be answered if researchers report training and implementation time requirements in the research.

Time to Implement

In those studies which took place in a self-contained or resource setting, the authors typically state that the procedures required minimal teacher time although they did not report the specific time required to implement the procedures. Since saving teacher’s time is one cited benefit of self-monitoring, it is not surprising that most authors suggest that procedures required minimal teacher time. Unfortunately, what constitutes “minimal” is not defined, leaving readers somewhat unclear as to time requirements. In the second category of studies, a similar pattern was seen, with times ranging from minimal (Hogan & Prater, 1993) to 10 minutes per day for peers to meet and give feedback to each other (Kohler et al., 1989). Rhode et al. (1983) noted that although the self-management procedure was initially time-intensive, the time required decreased as the matching procedures were faded. In the third category, classwide studies, only three of seven researchers reported the additional time required. This ranged from 2 minutes per day
(Johnson et al., 1996), through 8 minutes for recording (Ballard & Glynn, 1975), to 10- to 15-minute daily team meetings in the homework study (Olympia et al., 1994). In all cases, the teacher made this time available to students to allow them to record or discuss goals. As with the training time, the time to implement is of interest to teachers and should be accessible to teachers if they are to make informed decisions about classroom interventions.

**Trainer**

In the first category of studies, the teacher trained the students in two studies and consultants or graduate students trained students in the other two. In the second category, the information was not reported in four studies, consultants trained students in two (Hogan & Prater, 1993; Kohler et al., 1989), and the teacher trained students in one study (Edwards et al., 1995). In five classwide studies, after receiving training from consultants, the teachers trained the students. In the remaining two classwide studies, a psychologist, graduate, and undergraduate students trained students in one (Atkins & Rohrbeck, 1993), and the investigator trained students in two groups of eight in the homework self-management study (Olympia et al., 1994). It is important to note that teachers taught the students the procedures in fewer than half the studies overall. Although an indirect measure of teacher skill required, unless teachers actually teach the students and implement the procedures themselves, any claims about ease of implementation or practicality are optimistic at best.

**Effects on Child/Others**

Without exception, target students displayed improved behavior and/or academic performance in every study. Authors typically did not report any effects, either positive or negative, on nontarget students.

**Intrusiveness**

In this context, the intrusiveness of the intervention refers to the extent to which the
procedure singled out target students, interferes with typical routines, or adversely impacts non-target students. For those students in self-contained or resource settings, the procedures were relatively unintrusive. Typically, most researchers who examined the use of self-management procedures in the regular classroom noted that other students noticed the target students’ headphones or beep tape; however, in one study, nontarget students qualified the statement about target students standing out with the comment that they were better able to concentrate (Edwards et al., 1995). With those studies addressing classwide programs, the whole class participated in the procedure and thus the extent to which the procedure singles out target students is not applicable. No information was provided on the extent to which teachers considered the procedures intrusive nor on any possible adverse impact on other students. It would be useful to know if teachers planned to use the intervention again. If not, teachers might indicate what the barriers to implementation were and whether the intrusiveness of the intervention played a role.

Acceptability

Most authors did not report any data on the extent to which teachers and students found the procedure fair, appropriate, reasonable, and effective. In the first category of studies, the one author who did report acceptability data, McLaughlin (1984), noted that students liked the procedure and found that it did not interrupt school work.

In the second category of studies, three of seven authors reported acceptability data. Edwards et al. (1995) noted that teachers found the point procedures time consuming; however, the students enjoyed doing better and earning rewards. Kohler et al. (1989) indicated that the teacher found the procedures very acceptable and would continue to use them. It would be interesting to find out if the teacher did continue to use these procedures since consultants (and not the teacher) trained the students separately. In the same study, students reported being very satisfied with the intervention except for having points withheld by a peer. In the Rhode et al. study (1983), teachers reported being satisfied with
the procedure and finding it relatively easy to implement. The authors, however, did not report whether the teacher or a consultant trained the students. The students reported liking the procedure and finding it effective.

Acceptability data were reported in three classwide studies. Olympia et al. (1994) reported that the teacher found the procedure acceptable and effective. However, as in the Kohler et al. study (1989), the teacher was not responsible for training or, in this case, implementing the procedure that somewhat undermines the meaningfulness of this information. In the Johnson et al. study (1996) and the Miller et al. study (1993), teachers were satisfied with the ease of implementation of the procedure and the results shown. However, in both studies, the authors only informally reported these data even though this information is critical to teachers who are trying to select a behavior management intervention.

In summary, this analysis of the feasibility and acceptability of self-management interventions indicates a number of recommendations for future research. First, if researchers are to help bridge the gap between research and practice, they should attempt to report information that practitioners find useful and informative. Such information might include training and implementation time, skill required to implement, and teachers’ and students’ perceptions of the ease of implementation, effectiveness, and fairness of the procedures. Second, researchers should attempt to involve practitioners in selecting target behaviors, interventions, and in training their own students. Third, it would be appropriate to examine more formally the effects of self-management procedures on class behavior as a whole and, at the same time, on target at-risk students. Finally, researchers could replicate these studies with different teachers and different target populations and with lower levels of consultant support. Given information in these areas, it is possible that teachers would be more willing and more likely to implement research-based interventions in their classrooms.
Classwide Use of Self-Management Interventions

Three classwide studies, that examined the effectiveness of using a classwide self-management procedure on improving on-task behavior and had the teacher train the students and carry out the intervention, are described in more detail below. The first demonstrated the experimenting society model using data-based decision making and collaborative consultation to generate and evaluate three classwide behavior management intervention strategies to improve student behavior of one seventh-grade class (Johnson et al., 1996). This study used concurrent AB time series designs to evaluate three interventions with 25 seventh-grade students in three of their classes: a weekly class syllabus and individual student assessment, active teaching of the classroom rules, and student self-monitoring, in which students earned points for appropriate classroom behavior which was to be used as part of the teacher’s grading system. Observers collected 6 days of baseline data on the percentage of intervals of appropriate, inappropriate, and disruptive behavior in the students’ math class, language arts and reading class. The three teachers then intervened with their chosen intervention. Active teaching of the rules and self-monitoring were associated with large improvements in student behavior. Based on intervention comparisons, it was decided that active teaching of classroom rules was most effective and this was continued in the math class and introduced on the 12th day as the sole intervention in the reading and language arts classes. The authors noted that the data indicated adoption of the rules intervention resulted in further improvements in the median levels of target behaviors.

The preexperimental design used in this study limits conclusions drawn about treatment effectiveness. In addition, it is impossible to rule out the possibility of sequence; that is, that applying active teaching of the rules after students have learned to self-monitor may be more effective than self-monitoring alone. Although untested, it may be that active teaching of rules prior to teaching self-monitoring is even more effective. Nonetheless, the
study is germane to this research in that it examined the effects of classwide behavior management procedures and worked with practitioners in implementing these. The authors interviewed teachers after the study on the acceptability and feasibility of all three procedures and whether they planned to use them in the future. All three teachers found rules intervention easy to use and effective. It is important to note that the reading teacher who had chosen the self-monitoring intervention reported wanting to continue using that intervention because she believed it yielded reasonably effective outcomes and that the students were “old enough to be helping themselves” (p. 210) to do well in school (Johnson et al., 1996).

In the second study, Rooney et al. (1984) investigated the adaptability of self-monitoring procedures to regular classroom settings. The teacher trained each member of a second-grade class to monitor his or her own attending behavior. The authors used an ABABAB design to examine the effectiveness of self-monitoring on four target students’ attending behavior. Data were collected for 20 minutes at least three times per week while students were working on a variety of different academic tasks. Initially, students self-monitored without reinforcement. In the second phase of the study, students received an edible reinforcer for marking the same number of boxes on their self-recording sheet as number of times that the tone sounded. The authors noted that self-monitoring improved on-task behavior for each target child over baseline rates and the addition of reinforcement for the tone further improved on-task behavior. The authors did not report any data on the influence of self-monitoring procedures on the other students in the class; nor did they report any acceptability data either from the teacher or students. Questions such as whether the teacher planned to use the procedure again, if the class as a whole responded to the procedure, whether this would also be true of older students, and if the students enjoyed using it, were not addressed.
In the third study, Miller et al. (1993) studied the effectiveness of using a group self-management procedure to increase the on-task behavior of four disruptive preschool boys. A reversal design combined with a multiple baseline design across settings was used. The classwide procedure was conducted by teachers in two classrooms and included opportunities for all students to perform a behavior, self-assess concerning performance using a thumbs-up or thumbs-down gesture, and to obtain reinforcement based on a match between teacher and child ratings. Use of the procedure improved on-task behavior and reduced off-task and competing behaviors. For teachers, the use of the group procedure addressed individual student needs while promoting independent and responsible behaviors in students. Teachers were able to teach the students themselves after training by the researcher. In addition, the teachers indicated that they were very satisfied with the ease of implementation and with the benefits to target students, the class as a whole, and themselves. They also indicated that they would probably use the procedure again. Taken together, these data suggest that a classwide self-management procedure is effective at improving behavior in preschoolers, acceptable to teachers, and feasible for regular classroom teachers to implement. Two issues, however, remain unresolved. First, the children targeted were preschoolers. No experimental study was located that examined the effects of a teacher-trained and implemented classwide self-management procedure on behavior of secondary students and on target at-risk students. In fact, there are no studies that examined the effects of a classwide behavior self-management program on children older than second graders (Glynn et al., 1973; Rooney et al., 1984). Second, the teachers in the Miller et al. study (1993) were still required to match ratings with students. This teacher-matching component is typical of most self-management procedures because self-evaluation is usually taught by having the teacher model the evaluation process by matching with the student. It seems likely that it is this part of the self-management procedure more
than any other which has limited its use in typically sized regular education classrooms.
The next section addresses a possible alternative to teacher matching.

Using Peer-Assisted Learning with Self-Management Programs

As previously mentioned, self-management studies typically have students assess
their behavior when cued by a tone or touch. When a match with the student's rating of his
own behavior does occur, it is by the teacher or classroom aide and is, therefore, somewhat
impractical in a class of 25-plus students. Using peers in the teaching process provides a
valuable resource to the typically overburdened regular education classroom teacher. One
promising strategy for promoting academic success is classwide peer tutoring (Delquadri,
Greenwood, Whorton, Carta, & Hall, 1986). The social benefits of peer tutoring are also
well documented (Cohen, Kulik, & Kulik, 1982; Franca, Kerr, Reitz, & Lambert, 1990;
reported that peer tutoring is associated with increased positive exchanges and a decreased
number of negative verbal interactions. Dineen, Clark, and Risley (1977) reported that the
opportunities for skill practice and social interaction are particularly meaningful for at-risk
students and students with disabilities.

Although additional effects of increased on-task behavior and decreased disruptive
behaviors have been found in studies of cooperative learning programs and classwide peer
tutoring programs, only one study was found that examined the use of peer-mediated self-
management procedures on the generalization of treatment gains of mildly handicapped
adolescents from special education to regular education classrooms (Smith, 1988). The
author found that student behavior generally improved after self-evaluation procedures
were taught in the resource room and that improved behavior generalized to the regular
class once peers implemented the matching component of the self-management procedures.
Another study (Kohler et al., 1989), described earlier, was located in which peer dyads
monitored each other's behavior. The authors indicated significant improvements in on-task behavior of the targeted peer dyads but did not address the feasibility of using peers in a classwide program.

In a recent article, Gable, Arllen, and Hendrickson (1994) explored the feasibility of casting peers with emotional and behavior disorders in the role of behavior change agents and noted the advantages of using peers as behavior change agents. For example, peers can exert considerable influence over one another's behavior; they can promote individual problem solving; they are able to monitor and reinforce classmates' behavior more continuously and contingently than adults; and peer-mediated intervention may be preferred by students over adult programs. As Maheady (1997) pointed out, while research has demonstrated the effectiveness of peer-assisted learning strategies in improving academic achievement and on-task behavior, little research has examined these strategies with "tough" kids. These "tough" kids tend to have a variety of social and academic difficulties. They often engage in behavior that requires teacher intervention or control, are overly dependent on the teacher for direction, have difficulty paying attention and concentrating, are less well prepared for class, become upset under pressure, carry out their work sloppily and impulsively, and are unreceptive to others' opinions (Kauffman, 1993). It seems possible that these students, in particular, would benefit from self-management and social skills training delivered in a format that provides opportunities for appropriate social interactions.

Summary

Teaching whole classes of students how to take responsibility for their classroom behavior and academic performance would allow regular educators to spend more time teaching curriculum. Although there are numerous studies documenting the effects of self-management and self-monitoring strategies taught to individual students in a resource or self-contained setting, no studies were found which examined the effects, feasibility, and
acceptability of a teacher-trained and implemented self-management program on the behavior of a regular education class of secondary students as a group and also on the behavior of targeted at-risk individuals. The difficulty lies in adapting a strategy that has usually been taught in a special education classroom with a much lower teacher-student ratio such that a teacher with a class of 30 students may use it.

Purpose and Research Questions

Based on the review of literature presented regarding the need for effective classroom management techniques that regular education teachers may use within the context of teaching content, this study had a threefold purpose: first, to investigate the effectiveness of a classwide peer-assisted, self-management program, (the PAL Game) on increasing on-task behavior of an entire class, and of targeted at-risk individuals; second, to examine the effects of the PAL Game on increasing targeted students' appropriate use of two particular social skills (following instructions and gaining teacher attention); and third, to examine the feasibility of implementing PAL in a regular education classroom and the acceptability of the procedure to teachers and students. The PAL Game combines features of two thoroughly researched and proven-effective programs. The game format and total class involvement in teams of peer partners are borrowed from ClassWide Peer Tutoring (Greenwood, Delquadri, & Carta, 1997). The emphasis on self-management and self-appraisal is taken from Teaching Self-Management Skills (Young et al., 1991).

Primary Research Questions

The primary research questions addressed in this study were:

1. What is the effect of the PAL Game on group on-task behavior (all students in the class on-task simultaneously) of middle school students in a regular education language arts class?
2. What is the effect of the PAL Game on on-task behavior of targeted at-risk middle school students in a regular education language arts class?

**Secondary Research Questions**

The secondary research questions addressed in this study were:

1. What is the effect of the PAL Game on the percentage of instructions followed appropriately by targeted at-risk individuals?

2. What is the effect of the PAL Game on the percentage of times target at-risk individuals appropriately gain the attention of the teacher?

3. Given an increase in target behaviors of the group and of target at-risk students, what is the effect of the systematic withdrawal of the PAL Game on the maintenance of treatment gains?

4. To what extent is the PAL Game associated with higher teacher ratings of social competence and lower ratings of antisocial behavior for target at-risk students as measured by the social competence and antisocial behavior rating scales of the School Social Behavior Scale (SSBS; Merrell, 1993)?

5. To what extent is the PAL Game associated with improvements in academic related skills for target at-risk individuals as measured by teacher ratings on the academic skills subscale of SSBS?

6. Given an increase in individual on-task behavior as a function of the PAL Game, to what extent do the target at-risk students improve their academic and citizenship grades?

**Acceptability and Feasibility Research Questions**

Given the lack of research documenting the feasibility and acceptability of classwide self-management procedures, this study also examined the acceptability of the program to the teacher and students and the integrity with which students and teachers were able to
implement the program. The time required to train the teacher and the students, as well as the time required to implement the procedures, was documented. In addition, the data collected on the questions below were used as a measure of the feasibility of the PAL Game, specifically, the extent to which the teacher and students were willing and able to implement the program as described.

1. To what extent do the students rate the PAL Game as acceptable, likeable, and effective at improving their behavior and the classroom climate?

2. To what extent does the teacher rate the PAL Game as acceptable, likeable, and effective at improving students’ behavior and the classroom climate?

3. To what extent is the teacher able to implement the intervention with integrity as measured by a procedural checklist assessing the presence of materials, teacher behaviors, and student behaviors?

4. To what extent are the students able to implement the self-management procedures with integrity as measured by the section of the procedural checklist assessing student behaviors?
METHOD

Participants

Classes

Three regular education, seventh-grade language arts classes served as experimental classes. There were 31 students in second period, 33 students in fourth period, and 33 students in seventh period. Table 3 shows demographic information about each class in Study 1 during second trimester and Study 2 during third trimester, when the composition of each class changed, although the student body remained the same. Students were identified as at-risk, based on teacher rating on the Student Screening Instrument (SSI) (Young, West, & Mitchem, 1996) and/or limited English proficiency designation. The last row in the table shows the percentage change in the composition of students from Study 1 to Study 2.

The language arts curriculum covered was that designated by the Utah State core. The textbook used in the class was Houghton Mifflin English Level 7 (1990), which had been adopted throughout Ogden City School District. Each day, the teacher wrote the lesson plan for the day on the board. Each class began by students making a journal entry about a topic written by the teacher on the right-hand side of the board. Students were to write for the first 5 minutes of class. The teacher then reviewed the concept that was completed the day prior and answered any questions. She then began a new concept by introducing the concept, modeling an example, doing some guided practice with the students, and then assigning an exercise of roughly 10-15 sentences. While students worked independently on the assigned exercise, the teacher moved around the class, randomly checking students for understanding, praising those who were working quietly, redirecting those who were not, and assisting students who needed help.
Table 3

Characteristics of Students by Class Period

<table>
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<th>Study 1</th>
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<th>Study 2</th>
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<td>Period 7</td>
<td>Period 2</td>
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<td>6</td>
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<tr>
<td>% change from Study 1</td>
<td>52</td>
<td>64</td>
<td>42</td>
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</tr>
</tbody>
</table>

Target At-Risk Students

Seven males and three females from the three different language arts classes served as participants in the study. The students were selected from the group of all students in the three experimental classes based on parental consent (Appendix A) and the presence of at least three of the following four criteria: (a) history of office referrals for disruptive and/or off-task behavior; (b) recommendation by the teacher on the basis of poor self-management and social skills and high rates of disruptive or off-task behavior; (c) pre-baseline behavioral observations indicating that the student was off-task more than 40% of the class period; and (d) poor grades (C or below). The language arts teacher recommended those students who required a lot of teacher management to remain on-task and complete assignments on time. Two students who met the criteria above but who also had a
documented history of gang involvement and substance abuse were not selected for the study, based on their need for more intensive intervention. Pseudonyms were used for confidentiality purposes.

The following descriptions of the target students in each period provide information on baseline levels of on-task behavior, percentage of instructions followed appropriately, and frequency with which students appropriately gained the teacher’s attention (see Table 4).

The methods used to collect the data are described in more detail in the section on dependent variables (pp. 51-57). On-task behavior was recorded using a whole interval (10-second) recording system; appropriate use of the two social skills was recorded using a frequency-within-interval overlay system.

Second period students. Three at-risk students were selected from the 31 students in the second period class: Jay, Rich, and Cody. Problem behaviors for Jay included daydreaming during reading and language arts periods, as well as failure to complete and turn in academic assignments. Baseline levels of on-task behavior, measured during 40-minute observation periods of the language arts class averaged 42% (range 38-51%). Jay followed an average of 56% of instructions appropriately (range 33-87.5%). Although Jay rarely called out without raising his hand (average .3 times per class), he attempted only infrequently to appropriately get the teacher’s attention (average 1). Three teachers had referred Jay to Prevention Plus, a program for at-risk students, in part, because of his family situation. Jay’s younger brother had been referred to juvenile authorities for stealing vehicles, his parents had no fixed residence or employment, and he frequently came to school hungry and in clothes inappropriate for the weather. His schedule did not permit him to attend the Prevention Plus class.

Problem behaviors for Rich were similar to those for Jay. In addition, Rich was usually preoccupied with building toy guns out of pens, pencils, and various other typical
### Table 4

**Participant Characteristics**

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<thead>
<tr>
<th>Participant</th>
<th>Age at beginning of study</th>
<th>Office referrals for behavior</th>
<th>Disability</th>
<th>Pre-baseline mean on-task</th>
<th>Grade-language arts</th>
<th>GPA acad. (4-point scale)</th>
<th>GPA Citizenship (4-point scale)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jay</td>
<td>13-1</td>
<td>yes</td>
<td></td>
<td>38%</td>
<td>D-</td>
<td>1.56</td>
<td>1.86</td>
</tr>
<tr>
<td>Rich</td>
<td>12-5</td>
<td>yes</td>
<td></td>
<td>38%</td>
<td>B-</td>
<td>3.38</td>
<td>3.14</td>
</tr>
<tr>
<td>Cody</td>
<td>13-0</td>
<td>no</td>
<td></td>
<td>42%</td>
<td>D</td>
<td>2.14</td>
<td>2.57</td>
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<tr>
<td>Howie</td>
<td>12-9</td>
<td>yes</td>
<td></td>
<td>46%</td>
<td>B-</td>
<td>2.81</td>
<td>2.71</td>
</tr>
<tr>
<td>Helena</td>
<td>13-8</td>
<td>yes</td>
<td></td>
<td>52%</td>
<td>F</td>
<td></td>
<td></td>
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<tr>
<td>Arvilo</td>
<td>12-9</td>
<td>yes</td>
<td></td>
<td>34%</td>
<td>C-</td>
<td>1.78</td>
<td>2.0</td>
</tr>
<tr>
<td>Rebecca</td>
<td>13-0</td>
<td>yes</td>
<td>LD</td>
<td>28%</td>
<td>B</td>
<td>1.95</td>
<td>2.86</td>
</tr>
<tr>
<td>John</td>
<td>13-1</td>
<td>yes</td>
<td></td>
<td>39%</td>
<td>B</td>
<td>3.0</td>
<td>3.14</td>
</tr>
<tr>
<td>Patricia</td>
<td>13-2</td>
<td>yes</td>
<td>LD</td>
<td>30%</td>
<td>D</td>
<td>1.67</td>
<td>2.43</td>
</tr>
<tr>
<td>Ricardo</td>
<td>13-4</td>
<td>yes</td>
<td>LD/BD</td>
<td>27%</td>
<td>C-</td>
<td>2.76</td>
<td>2.57</td>
</tr>
</tbody>
</table>

Classroom materials and demonstrating these to classmates, rather than paying attention, participating, and completing assignments. Baseline levels of on-task behavior averaged 25% (range 4-41%). Rich followed an average of 44% of instructions appropriately (range 14-71%). He typically did not call out or attempt to appropriately gain the teacher’s attention (average .2 and 1.8, respectively).

Cody was the third student selected from this class period. Of all the target students, Cody was the only student who had not been referred to the office for behavior problems. The language arts teacher referred Cody because of daydreaming, out-of-seat behavior, talking out, and talking to classmates. Cody’s problem behaviors appeared to interfere with his ability to complete assignments. During baseline conditions, his level of
on-task behavior averaged 44% (range 27-55%). He appropriately followed 60% of instructions per class (range 29-86%). During baseline conditions, Cody attempted to appropriately gain the teacher’s attention an average of .5 times per class and called out an average of 1.2 times.

Fourth period students. Three at-risk students were selected from the 33 students in the fourth period language arts class: Howie, Helena, and Arvilo. Similar to Cody, Howie’s problem behaviors included out-of-seat behavior, talking out, and talking to classmates. Two teachers had referred Howie to the Prevention Plus program for poor impulse control and poor self-management skills. He had a number of office referrals for insubordination. Average on-task behavior during baseline conditions was 46% (range 30-65%). He followed an average of 48% of instructions appropriately (range 0-83%). He appropriately gained the teacher’s attention an average of three times, but called out an average of nine times.

Helena was easily distracted and was failing her classes. The counselor had asked the language arts teacher to keep a close watch on Helena because she had attempted suicide in the previous trimester and was taking medication (Paxil). Helena lacked self-management skills and had been referred to the office for verbal altercations and insubordination. Baseline rates of on-task behavior averaged 55% (range 0-94%). Helena followed an average of 47% of instructions (range 43-80%). Her frequency of gaining teacher attention appropriately and inappropriately each averaged two times per class period.

Two teachers had referred Arvilo to Prevention Plus (a voluntary skill-building program for at-risk students in the sixth and seventh grade), primarily for poor self-management and social skills and high rates of disruptive and off-task behavior. Arvilo did not consent to be placed in Prevention Plus. The language arts teacher noted that Arvilo had difficulty staying in his seat and completing his work. He frequently talked out, got up
and visited with other classmates, and attempted to engage other students in disruptive behaviors such as doodling, making paper planes, and throwing spitwads. Arvilo’s average on-task behavior during baseline conditions was 32% (range 12-50%). He typically followed 42% of instructions appropriately (range 12-60%). He gained the teacher’s attention appropriately an average of 3.6 times per class, and inappropriately, an average of 6.3 times.

Seventh period students. Four students were selected from the 33 students in the seventh period class: Rebecca, John, Ricardo, and Patricia. Rebecca’s problem behaviors included talking to classmates, talking back when redirected by the teacher, and a failure to complete and turn in assignments. Rebecca was identified as having a learning disability and received services in two co-taught classes. Rebecca’s average on-task behavior was 20% (range 0-74%). She followed on average 56% of instructions appropriately (range 11-100%). She gained the teacher’s attention appropriately an average of 3.2 times, and inappropriately, 1.3 times.

John was easily distracted, wandered around the classroom, and visited with classmates. He lacked self-management skills and needed to be frequently redirected by the teacher to get his work done. His average on-task behavior during baseline was 34% (range 11-80%). He followed an average of 56% of instructions appropriately (range 22-100%). He appropriately gained the teacher’s attention an average of 3 times per period and called out an average of 1.5 times.

Patricia’s problem behaviors were similar to Rebecca’s. She visited in class, talked back to the teacher when redirected, and failed to complete assignments. Patricia was also identified as having a learning disability and received services in one co-taught class. Her average on-task behavior during baseline was 24% (range 0-70%). She typically followed instructions appropriately 52% of the period (range 15-75%). She gained the teacher’s attention appropriately and inappropriately an average of one time each period.
Ricardo was identified as having a learning disability and behavior disorder. He received services in two co-taught classes and one pullout class for reading. He had been referred to Prevention Plus by all his teachers. The assistant principal and had been scheduled into this voluntary class one year prior to this study. Although Ricardo presented few behavior problems in the highly structured Prevention Plus class, he rarely used social or self-management skills in his other classes. Ricardo’s problem behaviors included responding violently when slightly provoked, poor self-management skills and impulse control, demanding one-on-one attention, and failing to complete assignments. Baseline rates of on-task behavior averaged 31% (range 0-67%). Percentage of following instructions appropriately averaged 55% per period (range 0-100%). He gained the teacher’s attention appropriately an average of 4.5 times, and inappropriately, an average of 3.3 times.

Setting

All baseline, training, and intervention sessions took place in a regular education classroom located in an inner city school district in northern Utah. A teacher who volunteered for the project and who is described below taught the three classes of seventh grade students for one period and then reading for one period. Each class period was 46 minutes long. Training in the PAL Game was conducted during language arts instruction. Data for the dependent measures were collected during the language arts class. The classroom’s dimensions were 36’ by 25’. The classroom was one of two rooms in a portable, air-conditioned building, located on the north side of the main building.

Trainer and Teacher

As the researcher in this investigation, I was working in the target middle school as a project coordinator for a federally-funded project targeting the prevention of antisocial behavior and the development of a safe and orderly school environment. In this capacity, I
functioned as a teacher consultant, providing training and support to faculty, staff, and students at the school. The teacher had attended a graduate class in social skills and behavior management offered through the project to teachers at the two middle schools involved in the project. This class involved didactic training, supplemented by practical lab sessions, in which the teacher’s role played the use of the direct teaching sequence to teach social skills, instructive praise, corrective teaching, behavioral directives, an intensive teaching intervention, and an introduction to self-management. The class had provided the teacher with a background in the use of non-coercive management strategies and effective instruction techniques. The teacher had requested additional help in behavior management for her classroom and then volunteered to participate in the study. She had a master’s degree in education and 19 years of teaching experience.

Materials

The teacher was given a packet of printed materials, which included two lesson plans, overhead transparencies, student worksheets to evaluate understanding of the program, PAL cards, and team charts. Figure 1 shows a PAL card used by the students to record the evaluation of their behavior. Appendix B shows the packet of teaching materials used by the teacher to teach the students the PAL Game, including lesson plan, checklist, overheads, and student worksheets. Appendix C shows examples of the observation forms used to record data on on-task, following instructions, and teacher attention. In addition, pens, clipboards, timers, stopwatches, and tape recorders with 5-second and 10-second beep tapes were used to collect data.

Dependent Variables

Data were collected on six dependent variables as indicated by the two primary and six secondary research questions addressed in this study. Data were also collected on the
Name ___________________________ Date __________________

Class Period ____________________________

---

**PAL GAME POINT CARD**

<table>
<thead>
<tr>
<th>H</th>
<th>= 4 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>= 3 points</td>
</tr>
<tr>
<td>N</td>
<td>= 2 points</td>
</tr>
<tr>
<td>U</td>
<td>= 1 point</td>
</tr>
<tr>
<td>Each match</td>
<td>= 1 Bonus Point</td>
</tr>
</tbody>
</table>

---

**Student Rating**

**Partner Rating**

---

**DID I:**

1. follow instructions
2. raise my hand
3. keep my hands/feet to myself
4. stay on-task
5. get my work done

---

*Figure 1.* PAL Game point card.
acceptability and feasibility of the PAL Game as indicated by the four questions addressing these issues.

**Primary Research Questions**

1. What is the effect of the PAL Game on the percent of on-task behavior of targeted at-risk middle school students in a regular education, language arts class?

   **On-task behavior.** On-task behavior was marked on 10-second interval recording forms for 40 minutes (Appendix C). The variable on-task behavior was defined as a global measure to assess the extent to which students met classroom expectations. On-task behavior for target at-risk students was scored when, for the entire 10-second interval, the student was looking at the teacher, materials, partner, using correct materials, and following directions given by the teacher. Examples of on-task behavior (represented by the intervals marked with a circle) included appropriately applying tools (pencil, pen, etc.) to the completion of the task; manipulating objects essential to the task; going to get a textbook from the shelf or getting a piece of paper from the teacher’s desk when assigned work from the textbook or asked to write; responding verbally to a question; raising a hand for attention or to participate in the class; participating as an active member of a group engaged in a problem-solving activity; or any other behavior that appeared clearly in line with what had been assigned. Off-task behavior was marked with a dash in each interval that the student exhibited off-task behavior for any part of that interval. Examples of off-task behavior included looking around the room; inappropriately applying tools (e.g., tapping pencil on the desk); leaving seat for any reason other than to get a book from the shelf or a piece of paper from the teacher’s desk; manipulating objects that were not essential to the task; talking to neighbors unless required by the assignment; calling out; or otherwise not meeting classroom expectations.
2. What is the effect of the PAL Game on the percent of group on-task behavior (all students in the class on task simultaneously) of middle school students in a regular education language arts class?

**Group on-task behavior.** Percent of time on-task was scored by starting the stopwatch when all members of the class were simultaneously on-task (as defined above) and stopped when one or more students displayed behaviors described above as off-task. Total time on-task was divided by the total observation period to determine percent of time on-task.

**Secondary Research Questions**

1. What is the effect of the PAL Game on the percentage of instructions followed appropriately by targeted at-risk individuals?

**Following instructions.** Each instruction the teacher gave was marked with a dash (-) in the appropriate interval on the recording form (Appendix C). Instructions were defined as any verbal comment or physical gesture by the teacher, that stated or implied a discrete behavioral response by the class or an individual student. Instructions included comments or gestures to stop or start something. Examples of instructions included teacher comments such as “open your books to page 110,” “look at the board,” and “what is the appropriate way to get my attention?” Appropriate compliance with the instruction by the student was marked with a vertical line through the dash (+) when the student began (and completed if appropriate and possible) the instruction within 5 to 8 seconds. If the student failed to begin or delayed compliance by more than 5 to 8 seconds, a dash, representing inappropriate following instructions, remained. The frequency of instructions followed appropriately was scored when the student began the task within 5 to 8 seconds. Verbal acknowledgment of an instruction to an individual student was required for the instruction to be scored as being followed appropriately. Verbal acknowledgment of a whole class instruction was not required. Frequency of instructions not followed was scored when the
teacher gave an instruction, and the student did not begin the task within 5 to 8 seconds. Examples of not following instructions included students who, when asked to open the book to a page, got the book out, but did not open it, or who, when asked to begin the assignment, got up to get a piece of paper and stopped to chat with students on the way to or from the teacher’s desk. These data were summarized and reported as percentage of instructions followed appropriately by dividing the number of instructions followed appropriately by the total number of instructions given, multiplied by 100. Use of the social skill “following instructions” was reported as the percentage of instructions followed, rather than as a frequency, in order to show the ratio between the number of instructions given and the number followed appropriately by target students.

2. What is the effect of the PAL Game on the percentage of times the target at-risk students appropriately gain the attention of the teacher?

Appropriate teacher attention. Frequency of gaining the teacher’s attention appropriately was scored when the student looked at the teacher, raised his/her hand above the shoulder and held it relatively still, waited to be acknowledged and then asked his/her question. Appropriate teacher attention was scored for each interval that the student raised his/her hand appropriately. If the student put his/her hand down without asking a question, this was still scored as appropriate. If the teacher was unable to see the student (for example, the teacher’s back was turned), it was appropriate to say the teacher’s name in a normal voice tone. Inappropriate teacher attention was scored if the student called out without raising his/her hand, did not wait to be acknowledged before speaking, or waved his/her hand in the air to get the teacher’s attention. These data were summarized and reported as the frequency of times that the student gained the teacher’s attention appropriately and inappropriately. Use of the social “gaining teacher attention” was reported as frequency data because, unlike following instructions, teacher attention is not opportunity bound and functions as a free operant. Frequencies of this behavior were
sometimes very low; therefore, it was not appropriate to convert these frequencies into a percentage.

3. Given an increase in target behaviors of the group and of target at-risk students, what is the effect of the systematic withdrawal of the PAL Game on the maintenance of treatment gains?

The dependent variables and measures used to address this question were the same as those defined above (i.e., target student on-task, group on-task, following instructions, and gaining teacher attention).

4. To what extent is the PAL Game associated with higher teacher ratings of social competence and lower ratings of antisocial behavior for target at-risk students as measured by the social competence and antisocial behavior rating scales of the SSBS?

At the beginning of the study, while baseline data were being collected, the teacher filled out the School Social Behavior Scale (SSBS; Merrell, 1993) on each target at-risk student. The SSBS is a behavior rating scale designed specifically for use by professionals in school settings. It provides an integrated rating of both social skills and antisocial problem behaviors of students. The Social Competence Scale includes 32 items that measure adaptive, pro-social skills and includes three subscales: interpersonal skills, self-management skills, and academic skills. The Antisocial Behavior Scale includes 33 items that measure socially linked problem behaviors and also includes three subscales: hostile-irritable, antisocial-aggressive, and disruptive-demanding. The SSBS was standardized on more than 1,858 students in grades K through 12, who represented all U.S. geographic regions. The scales have been extensively evaluated for reliability and validity (Calderella & Merrill, 1997; Demaray, Ruffalo, & Carlson, 1995; Emerson, Crowley, & Merrell, 1994; Merrell, 1992). See Appendix D for more details on the psychometric properties of the SSBS.
At the end of the study and during the last week of school, the teacher again filled out the SSBS as a posttest measure of social competence and antisocial behavior. These tests were scored and one-tailed paired t-tests were calculated on the difference between pre and posttest means using SPSS for Windows on the composite ratings (social competence and antisocial behavior) and for each subscale. Standardized mean difference (SMD) and effect sizes (ES) were calculated for the composite scales and each subscale by dividing the difference between means by the standard deviation of the pretest score.

5. To what extent is the PAL Game associated with improvements in academic related skills for target at-risk students as measured by teacher ratings on the academic subscale of the SSBS?

As described above, the teacher filled out the SSBS on each target student as a pre- and posttest measure. A one-tailed, paired t test was calculated using the computer software SPSS Windows on the difference between the pre- and posttest means for the composite tests and the academic subscale. A standardized mean difference effect size was calculated by dividing the difference between the mean pretest and posttest scores on the academic skills subscale by the standard deviation of the pretest score.

6. Given an increase in on-task behavior as a function of the PAL Game, to what extent do the target at-risk students improve their academic and citizenship grades in language arts and overall?

Academic and citizenship grades. For each target at-risk student, the student’s academic and citizenship grades were reported from the student’s report card for language arts class and overall GPA for all three trimesters. This provided information on the student’s functioning prior to intervention, during Study 1 when the PAL Game was first introduced, and during Study 2 when the PAL cards were systematically withdrawn.
Acceptability and Feasibility Research Questions

1. To what extent do the students rate the PAL Game as acceptable, likeable, and effective at improving their behavior and the classroom climate?

   Social validity questionnaire. All students filled out an anonymous 15-item social validity questionnaire (Appendix E) at the end of Study 1 and again at the end of Study 2. Students rated questions on a scale of one to three (numbers added later) with three being the most positive response. The questions were designed to assess the acceptability (questions 1-4), likeability (questions 6, 7, 9, and 15), perceived effectiveness of the PAL Game at causing behavior change (questions 5, 8, 10, 13, and 14), and finally, the PAL Game’s perceived impact on classroom climate (questions 11 and 12). Students ratings were for each category were summed across all classes and averaged to provide a mean rating for acceptability, likeability, effectiveness at improving behavior and classroom climate for Study 1 and Study 2.

2. To what extent does the teacher rate the PAL Game as acceptable, likeable, and effective at improving students’ behavior and classroom climate?

   Social validity questionnaire. The teacher filled out a 27-item questionnaire (Appendix F) at the end of Study 1 and again at the end of Study 2. Section A (4 items) was designed to assess the acceptability of the intervention goals. Section B (12 items) assessed the acceptability of the procedures and section C (11 items) assessed the teacher’s satisfaction with the outcomes. The teacher rated each item on a scale of one to three (numbers added later) with three being the most positive response. Ratings for each question were summed across each category and points and percentage possible reported for each category at the end of Study 1 and Study 2.

3. To what extent is the teacher able to implement the intervention with integrity as measured by a procedural checklist assessing the presence of materials, teacher behaviors, and student behaviors?
Procedural checklist. A three-part, 30-item checklist (Appendix G) was used to assess fidelity of implementation of the PAL Game. Observers recorded the presence or absence of materials (5 items), teacher behaviors (16 items), and student behaviors (9 items). Percent correct and complete treatment implementation was calculated by dividing the number of items marked “yes” by the total number of items.

4. To what extent are students able to implement the self-management procedures with integrity as measured by the section of the procedural checklist assessing students’ behaviors?

Procedural checklist. As noted above, observers used a 30-item checklist to assess fidelity of implementation of the PAL Game. Percent correct and complete treatment implementation by students was calculated by dividing the number of student behaviors marked “yes” by the total number of items.

Data Collection Procedures

Independent observers and the researcher conducted observations each school day, 40 minutes per day, during the three language arts classes. There were three to four observers in each class. One observer collected 40 minutes of group on-task data. Two observers each observed two target students and recorded on-task, frequency of teacher attention, and following instructions for two target students at one time. In approximately 25% of the sessions, a fourth observer collected agreement data with one of the primary observers. Although the researcher was concerned with the intrusiveness of the number of observers required to collect 40 minutes of data on three to four target students, as well as on the group, the acclimation prior to the study appeared to minimize this. In a further attempt to ensure that the observers were as inconspicuous as possible, the observers sat on stools or stood against the wall at the side of the classroom. The classroom was spacious, and the students were accustomed to the presence of others because during first trimester,
they had two to three prospective teachers from the local university observing most days. Students were told that the observers were prospective teachers who had to make notes on teacher-student interactions for a college class.

Measurement Systems

The observers used four measurement systems to collect data (see Appendix C for examples of recording forms): (a) a 10-second whole interval observation system was used to record targeted students’ on-task behavior with a circle; off-task behavior was marked with a dash anytime that it occurred within the interval (i.e., using a partial interval recording system); (b) duration recording to measure the percentage of group on-task behavior; (c) event recording with a 10-second interval overlay to record the frequency of instructions followed appropriately and inappropriately, and the frequency of appropriate and inappropriate gaining teacher attention; and (d) permanent product recording to assess the target students’ citizenship and English grades.

The observers and researcher used a pen and paper data collection method. On-task behavior of target students was marked with a circle when it occurred for the whole interval. To help observers remain vigilant while observing, they were taught to mark each interval: on-task behavior was scored with a circle when the student was on-task for the whole interval, and off-task behavior was marked with a dash in every interval that it occurred for a part of that interval. This represented a partial interval recording system for off-task behavior. The frequency data on following instructions and teacher attention were recorded on the same form with the same 10-second interval. For these behaviors, observers recorded a plus (+) when the student followed an instruction or gained the teacher’s attention appropriately or a dash (-) for an inappropriate response. More specifically, when the teacher gave an instruction, the observer marked a (-) in the appropriate interval. If the student complied within 5 to 8 seconds, the observer changed the dash into a plus (+). If the teacher gave more than one instruction in an interval, the
appropriate number of dashes was recorded in that interval. For teacher attention, when the student raised his hand, the observer marked the appropriate interval with a dash. If, at the end of that interval, the student continued to attempt to gain the teacher’s attention appropriately, the dash was changed to a plus. For each interval that the student appropriately gained the teacher’s attention, a plus was recorded in the appropriate interval on the recording form. For group on-task data, duration recording was used. To address concerns of interobserver agreement, the class was divided into two zones of two rows each. Using a 5-second beep tape to prompt them, observers scanned one zone for 5 seconds and then, at the beep, started scanning the other zone. Any student in the zone being observed who was off-task (as defined above) stopped the stopwatch. When all students in the zone were simultaneously on-task, the stopwatch was started and continued to run until a student was observed to be off-task.

Observers

The independent observers were eight students from the Education or Psychology Departments at Weber State University. Five observers were female. All observers were in their early twenties. The observers were trained by the researcher in the behavior definitions and scoring methods, by using videotapes of teacher-student interactions made for another project, and by using practice sessions in another project classroom. Training included learning the operational definitions of the behaviors and how to record those behaviors using the interval system or duration recording. Each observer was required to reach 90% accuracy with the data collection forms and methods during the videotape session before observing in the classroom. Practice pre-baseline data were also collected on students in the language arts classes prior to the beginning of the study until observers reached a criterion of 80% point-by-point agreement on occurrences and nonoccurrences of the interval and frequency (with an interval overlay) data. Practice sessions also served to help the students and the teacher become used to the presence of observers. When
interobserver agreement on occurrence and nonoccurrence of the behaviors dropped below 80%, review sessions were conducted with the observers until agreement remained between 80 and 100% for occurrence and nonoccurrence of each behavior. This occurred once during baseline in Study 1 and once during Study 2. These review sessions involved retraining on definitions and discussions between the observers on behavior definitions or other concerns relating to observations.

**Interobserver Agreement**

To help reduce the threat of observer drift and experimenter expectancies, observers were trained, blind to the purpose of the study, and were periodically monitored for changes in recording by the researcher. The nature of the study, involving classwide intervention and adaptations of the intervention during each phase of the project, precluded keeping observers blind to the conditions of the study. To guard against potential bias, interobserver agreement was assessed across all conditions, all categories of the behavior code, and all observers on 26% of the observations in Study 1 and 29% of the observations in Study 2.

**Partial interval and frequency data.** Since the social skill data were recorded on the same interval recording form (see Appendix C) used to collect on-task data, point-by-point interobserver agreement could be calculated for both types of data. Thus, interobserver agreement was calculated on the number of agreements divided by the number of agreements and disagreements, multiplied by 100. Separate interobserver agreements were calculated for occurrences and nonoccurrences of student behaviors in each condition for each participant. This was done to minimize the likelihood of obtaining high agreement rates on high and low frequency behaviors purely due to chance. Table 5 shows the data for interobserver agreement on occurrence and nonoccurrence of each behavior for each phase of Studies 1 and 2. Although average agreement rates were acceptable, the range of agreement was, in some cases, very broad. Occasionally, a behavior occurred only one or
two times during the observation period. Thus, any disagreement between observers in this situation resulted in a low overall rate. The comments in Table 5 note those occasions when observers had only one, two, or three opportunities to agree on the occurrence of a behavior within the entire 40-minute observation.

Duration recording. Using a stopwatch, which was calibrated with the primary observer’s, a second observer collected independent agreement data on group on-task behavior at least once a week across all conditions. Agreement was calculated by dividing the shorter length of time on-task by the longer length of time on-task, multiplied by 100. Average interobserver agreement for group on-task behavior was 97.2% (range 80-100%) for Study 1 and 98.7% (range 94-100%) for Study 2.

Permanent product data. Observers were trained to compare data entered in the teacher grade book, with the grade report generated by the computer grade book, and on grades assigned for language arts, citizenship, and overall GPA for academics and citizenship each trimester. Agreement on academic data was calculated by dividing the smaller number by the larger number, and multiplying by 100. Agreement on grades for language arts, citizenship and overall GPA for academics and citizenship was 100%.

Independent Variable

The independent variable was the PAL Game, which was designed to help students learn to follow classroom rules, use appropriate social skills, and work productively within a teacher-managed, peer-assisted reinforcement system, gradually shifting responsibility from the teacher and peer-partner to the student. As the student and peer partner demonstrated the ability to correctly monitor their own behavior and each other’s and to perform according to class standards, each was given more responsibility until the peer had only minimal involvement with the day-to-day behavior management. Typically, self-
Table 5
Mean (Range) Interobserver Agreement Across Behaviors and Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>On-task ag/occ</th>
<th>On-task ag/non</th>
<th>FI ag/app</th>
<th>FI ag/inapp</th>
<th>TA ag/app</th>
<th>TA ag/inapp</th>
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<tbody>
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<td><strong>Study 1</strong></td>
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<tr>
<td>Baseline</td>
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<td>93 (72-100)</td>
<td>81.2 (0-100)</td>
<td>86.6 (50-100) b</td>
<td>88.4 (50-100) b</td>
<td>87.2 (50-100) b</td>
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<td>Training</td>
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<td>97.5 (93-99)</td>
<td>80.5 (33-100) c</td>
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<td>97.2 (75-100)</td>
<td>95.8 (75-100)</td>
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<td>PAL 4</td>
<td>93.1 (77-100)</td>
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<td>95.6 (85-100)</td>
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<td>97.8 (50-100) b</td>
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<tr>
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<td>94.2 (50-100)</td>
<td>93.5 (50-100)</td>
<td>97.1 (75-100)</td>
</tr>
<tr>
<td>PAL 4</td>
<td>95.8 (80-100)</td>
<td>95.8 (95-100)</td>
<td>91.5 (43-100)</td>
<td>95.8 (33-100) c</td>
<td>98.8 (75-100)</td>
<td>100 (75-100)</td>
</tr>
<tr>
<td>PAL 2</td>
<td>96.7 (89-100)</td>
<td>96.5 (95-100)</td>
<td>94.5 (75-100)</td>
<td>95 (33-100) c</td>
<td>96.2 (86-100)</td>
<td>85.7 (0-100) a</td>
</tr>
<tr>
<td>PAL 1</td>
<td>95.4 (91-100)</td>
<td>98.6 (92-100)</td>
<td>97 (88-100)</td>
<td>93.6 (88-100)</td>
<td>97.9 (75-100)</td>
<td>98.1 (88-100)</td>
</tr>
</tbody>
</table>

* a One opportunity; b two opportunities; c three opportunities within 40-minute observation
management programs initially require a great deal of teacher involvement with checking the accuracy of the students’ ratings. This program was different in that it involved peer partners in the matching process. Students were taught to monitor their own behavior and their partners, to prompt one another to perform according to classroom standards, to rate their own and their partner’s performance, and to earn points as a partnership for their team. The PAL Game involved the following components: instruction by the teacher in self-management and social skills, the PAL Game—self-monitoring activities and reinforcement system, designed to increase the frequency with which the behaviors were performed.

**Self-Monitoring and Self-Evaluation**

The teacher taught the students the self-management program from a lesson plan (see Appendix B for examples of lesson plans). In the first lesson, the students learned to define and identify the antecedents, behaviors, consequences (ABCs) of behavior. Then the students role-played behaviors that lead to positive consequences and behaviors that were likely to lead to negative consequences. Lesson two taught the students about behavioral self-management. Students learned to identify classroom rules (Appendix H) and teacher expectations regarding their classroom behavior. The teacher had already directly taught the steps of the social skills “how to follow instructions” and “how to gain the teacher’s attention” included in the classroom rules (see Appendix I). The teacher reviewed the steps to the social skills taught in lesson two. The students learned the rating system (based on the school-wide citizenship grades with which students were already familiar) that described various levels of student “rule-following” behavior. For example, a rating of “H” indicated that a student had followed all the rules throughout the entire rating period, while a rating of “N” indicated the student followed the rules for only part of the time period. The classroom rules, rating system, and statements describing the rating levels were posted in the classroom.
Lesson two also included teaching the students to evaluate peer partners, to prompt, praise, and give corrective feedback, and to play the PAL Game. This portion of the training took place on the third day of training for the first two classes. However, by the third class, the teacher appeared to be more fluent and thus, the training took only 2 days. To play the game, students were paired and randomly assigned to one of two teams on a weekly basis. Assignments were made when students drew a packet of point cards for themselves and their partner from a covered box. The teams were named after the school colors, blue and white, and the point cards were copied onto either blue or white paper, designating the team to which the partnership was assigned. The teacher initially divided the instructional time into four 10-minute intervals. The teacher proceeded with instruction, but stopped after the first interval, and had students reflect upon their behavior over the previous ten minutes. Students compared their perceptions of their behavior with the various levels described in the rating scale (and on the prompt on the point card—see Figure 2) and recorded the rating that corresponded to their level of performance. Each student also rated his or her partner’s behavior and recorded it at the same time on the form next to the student’s rating. The student and his/her partner then compared ratings. By comparing ratings, students could calibrate their perceptions of how well they met classroom expectations. If ratings between the peers did not match, students could see that they were not judging their behavior the same way that their peer partner was. This provided both students with more information about how they were behaving. As needed, students were taught to point to the appropriate statement on their partner’s point card to prompt appropriate behavior. Thus, through this process, students continually monitored their behavior and evaluated it in comparison to classroom rules. Students were rewarded for appropriate classroom behavior with points. As behavioral ratings improved, the partnership earned more points for their team. Students also received points for accurately
rating their behavior and matching their ratings with the peer partner’s. The ratings the students could earn are described below:

**H = Honors** -- A rating of “H” meant that the student was on-task for the whole rating period and used appropriate classroom social skills all period. The student required no prompts or redirections from his peer partner or the teacher.

**S = Satisfactory performance** -- A rating of “S” meant that the student was on-task for the whole rating period and used appropriate social skills, with the exception of only one minor infraction. For example, the student may have called out for assistance without first raising his hand. When prompted by his partner, the student immediately raised his hand or returned to work.

**N = Needs improvement** -- A rating of “N” meant that the student was on-task for some of the time and used appropriate social skills for some of the time, but needed 2-3 prompts or redirections by the teacher or peer partner, one of which may have been a repeat request.

**U = Unsatisfactory performance** -- A rating of “U” meant that the student did not stay on task or use appropriate social skills for most of the interval. The teacher or peer partner may have needed to give four prompts to stay on-task, and the student may have been asked to move seats.

**Matching and Reinforcement Process**

The students were then taught the matching procedure. In this phase, the students were taught to prompt their peer partner with a prompt graphic, rate the peer, and give praise or corrective feedback when they rated each other. Students learned that when their ratings exactly matched their partner’s, they earned the points for that rating, plus an additional bonus point for having a perfect match. When “next-door” matches occurred (i.e., the student rating and partner rating were off by only one in either direction), the student received the points for the peer partner’s ratings, with no bonus points. When
ratings were more discrepant, the student received no points for that time period. Figure 2 illustrates the rating system.

**Point Reporting**

At the end of the last rating period, the peer partners totaled the points earned by both students and announced this total to the designated point recorders, who summarized team performance. At the end of the class period, the student dyads reported their points aloud to the recorder by stating the color of the team, their partnership number, and finally the number of points that the partnership earned together. For example, the student dyads who were the second partnership on the blue team and who earned 38 points would report, “blue, 2, 38.” This procedure minimized the class time used for recording points. In addition, it meant that an individual student who earned few points was not identified (rather, the sum of points that the partnership earned was reported). The teacher identified two students to record this information. One person recorded points on a chart, which identified the students and their partnership numbers, and a second recorder noted the points on a team chart. This way, the teacher and the students could track the progress they made with their partners (student dyads remained the same throughout each study), and also track the progress of the team each day (teams changed each week). If teams surpassed the points earned the previous day, both teams were recognized as winners. If this was not the case, the team with the most points was announced winner and the other team was praised for effort.

Initially, as the target behaviors were being established, the teams could earn free time for the class, or class parties when a prearranged criterion was met. In Study 2, just as the number of rating periods was systematically faded, so too were incentives for winning.
**Exhibit A: Perfect Matches**

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
</table>

**Class Period**

<table>
<thead>
<tr>
<th>PAL GAME POINT CARD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H</strong> = 4 points</td>
</tr>
<tr>
<td><strong>S</strong> = 3 points</td>
</tr>
<tr>
<td><strong>N</strong> = 2 points</td>
</tr>
<tr>
<td><strong>U</strong> = 1 point</td>
</tr>
<tr>
<td>Each match = 1 Bonus Point</td>
</tr>
</tbody>
</table>

**Student Rating**

<table>
<thead>
<tr>
<th>Yes</th>
<th>Somewhat</th>
<th>No</th>
</tr>
</thead>
</table>

**Partner Rating**

<table>
<thead>
<tr>
<th>H</th>
<th>S</th>
<th>U</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 + 1</td>
<td>3 + 1</td>
<td>1 + 1</td>
<td>3 + 1</td>
</tr>
</tbody>
</table>

**Exhibit B: Next Door Matches**

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
</table>

**Class Period**

<table>
<thead>
<tr>
<th>PAL GAME POINT CARD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H</strong> = 4 points</td>
</tr>
<tr>
<td><strong>S</strong> = 3 points</td>
</tr>
<tr>
<td><strong>N</strong> = 2 points</td>
</tr>
<tr>
<td><strong>U</strong> = 1 point</td>
</tr>
<tr>
<td>Each match = 1 Bonus Point</td>
</tr>
</tbody>
</table>

**Student Rating**

<table>
<thead>
<tr>
<th>Yes</th>
<th>Somewhat</th>
<th>No</th>
</tr>
</thead>
</table>

**Partner Rating**

<table>
<thead>
<tr>
<th>H</th>
<th>S</th>
<th>U</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 + 2</td>
<td>4 + 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Exhibit C: Non-Matches**

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
</table>

**Class Period**

<table>
<thead>
<tr>
<th>PAL GAME POINT CARD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H</strong> = 4 points</td>
</tr>
<tr>
<td><strong>S</strong> = 3 points</td>
</tr>
<tr>
<td><strong>N</strong> = 2 points</td>
</tr>
<tr>
<td><strong>U</strong> = 1 point</td>
</tr>
<tr>
<td>Each match = 1 Bonus Point</td>
</tr>
</tbody>
</table>

**Student Rating**

<table>
<thead>
<tr>
<th>Yes</th>
<th>Somewhat</th>
<th>No</th>
</tr>
</thead>
</table>

**Partner Rating**

<table>
<thead>
<tr>
<th>H</th>
<th>N</th>
<th>H</th>
<th>S</th>
<th>U</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 + 0</td>
<td>0 + 0</td>
<td>0 + 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2.** PAL Game point card rating system.
Mystery Match

In addition to explaining the peer matching procedures, the teacher described and modeled the mystery match procedure. In order to encourage the students to rate themselves as accurately as possible, a variation of the mystery motivator (West, 1984) was used, in which randomly selected peer partner teams received bonus points when their ratings of their own performance matched the ratings of the teacher. One peer partnership from each team was selected secretly, their names placed in an envelope, and their behaviors closely observed by the teacher and rated for the period. At the conclusion of the period, when the peer partner ratings were reported, the secret or “mystery” partnership ratings were compared to the teacher’s ratings of that partnership. Perfect agreements earned a 10-point bonus for the partnership’s team.

Fading Process

When the students reached the criterion of “H” or “S” for all four rating periods, with perfect or “next-door” matches, the ratings system was changed to two 20-minute rating periods and finally to one 40-minute rating period (Figure 3). When the criterion was met for eliminating the PAL Game point card (all students obtaining “H” or “S” ratings for three consecutive days, and simultaneous on-task behavior averaging 75% of the period), the students self-monitored and self-evaluated by thinking about classroom expectations and their own behavior, and cognitively determining if there was a match when the teacher periodically prompted them to do so. For example, at the beginning of the class period the teacher would remind students that they should remember to self-manage or, while students were working independently on an assignment, the teacher might ask, “Are you all remembering to self-manage?” During this phase, students did not have PAL Cards, nor did they record ratings or match with their partners.
20-Minute Rating

Name ____________________________ Date ____________________

Class Period ____________________________

![PAL GAME POINT CARD]

H = 8 points
S = 6 points
N = 2 points
U = 1 point

Each Match = 2 Bonus Points

DID I:
1. follow instructions
2. raise my hand
3. keep my hands/feet to myself
4. stay on-task
5. get my work done

Student Rating

Partner Rating

--- + --- = ---

40-Minute Rating

Name ____________________________ Date ____________________

Class Period ____________________________

![PAL GAME POINT CARD]

H = 18 points
S = 16 points
N = 2 points
U = 1 point

Each Match = 3 Bonus Points

DID I:
1. follow instructions
2. raise my hand
3. keep my hands/feet to myself
4. stay on-task
5. get my work done

Student Rating

Partner Rating

---

Figure 3. Pal Game 20- and 40-minute ratings.
Training

Implementing a class-wide self-management program required both student and teacher training in order to be implemented effectively. The teacher was trained to use the program in two 2-hour training sessions. Training consisted of giving the teacher the definition and rationale for the program. I then modeled the lessons to teach the students about the program for the teacher; then the teacher role-played these procedures, first as the student, and then as the teacher. The teacher and I discussed how to assign partners to students, and how to assign partnerships to teams. The teacher decided to ask the students in each class to list three people they would like to work with and three people they could not work with. She also told the students that although she would try to honor their choices, she would make the final decision. I taught the teacher how to time and monitor dyads, give assistance and corrective feedback, award points, and summarize group performance with the class. Training continued until the teacher reached criterion of performing the steps of a procedural checklist with 90% accuracy on three consecutive trials. The teacher procedural checklist (see Appendix G) was a modified version of the 36-item checklist developed by Carta, Dinwiddie, Kohler, Delquadri, and Greenwood (1984) to assess treatment fidelity of the implementation of a peer tutoring program.

In turn, the teacher trained each class of students to implement the classwide self-management program after baseline conditions. Training the students took 125 minutes (three periods) for the first class, 110 minutes for the second class, and 90 minutes (two periods) for the last class, during which the teacher followed similar procedures to those used in her training. Students were trained until they performed all steps, including having materials ready, using all steps of the procedure, and including tallying points earned, to a criterion of 90% accuracy.
Experimental Design and Experimental Conditions

A multiple baseline design across three classes of seventh grade students was used to assess the effectiveness of the classwide self-management program on improving the classes' on-task behavior as a whole and on increasing individual on-task behavior of 10 target at-risk students. The assumptions of the design are independence of legs and equivalent sensitivity to the intervention. When using a multiple baseline design across groups of subjects, intervention is applied to one group of subjects at a time, and continuous data are collected for all subjects. Prior to beginning the intervention in the first class, baseline data should be stable (i.e., the next data point should be predictable based on the preceding pattern established by the data). Stability of baseline was determined according to the following criteria: (a) the trend of the data, particularly for the last three to four data points; (b) the range of the data points and whether the last three to four data points fell within the range of the previous data; and (c) variability in the data points so far. When criteria for stability were met, the next phase change began.

Since the middle school in which the study took place was on a trimester schedule, the following issues needed to be considered in the design of the study. Although the teacher taught the same students for the entire school year, the composition of her classes changed each trimester. This did not allow enough time to examine both the effects of the intervention and the systematic fading of the matching procedure. Since the primary questions of interest were to look at the effects of a classwide, peer assisted, self-management procedure upon on-task behavior of the group and target at-risk students in a regular classroom, it was decided to use Study 1 (second trimester) to demonstrate experimental control with this issue. At the trimester change, and the beginning of Study 2, the PAL Game was withdrawn and baseline data were collected in each class. When group on-task data were stable (or had decreased to zero levels), the PAL Game was reintroduced to classes with a one-day review session. When levels of group on-task
behavior were stable, the PAL Game was systematically withdrawn by increasing the length of the rating period. Therefore, the research questions pertaining to the effects of the PAL Game on group and individual on-task behavior were addressed in Study 1. Study 2 examined the systematic withdrawal of the intervention.

Components of the classwide self-management program include: training in the program, student self-ratings, comparing or “matching” of student ratings with peer ratings, earning of praise, points, and public recognition, and mystery matches with the teacher.

Study 1

Baseline

No experimental procedures were in effect. Students were assigned academic work as usual. The teacher praised appropriate classroom behavior as usual. Observers collected data on student behaviors, permanent products, and treatment fidelity to ensure that the teacher was not implementing the PAL Game.

Training

Training sessions for the PAL Game were conducted as described in the section on the independent variable. The teacher stated and reviewed the classroom rules and provided a rationale for their importance. She modeled examples and non-examples of each rule (e.g., being on-task, following instructions, raising one’s hand to gain teacher’s attention) and gave students the opportunity to role-play the examples. The teacher then explained the rating scale to the students (see PAL Game Point Cards, Figures 1 and 2). Students rated themselves on meeting classroom expectations as described on the prompt on the point card. Details on the components of the training are provided in the section on the independent variable. Data were collected on the teacher’s correct implementation of
the training using a 56-item training checklist (Appendix J) and on the students reaching criterion on rating and matching procedures.

**PAL Game**

This condition differed from baseline conditions only in the implementation of PAL Game. The teacher assigned students a partner (based on her knowledge of student personalities and also student responses to a brief survey in which they were asked to note students with whom they were unable to work). Student partnerships were randomly assigned to teams at the beginning of each week. The procedure used to ensure random assignment of partnerships to the blue team or white team was suggested by the teacher to minimize time required to complete the activity. Each Monday, one member of the partnership would draw a point card packet for the week from a covered box, which contained packets of point cards clipped together for two students. Point card packets were copied on blue or white paper. Thus, the procedure for picking up the packet of point cards for a partnership also served as the procedure to assign partnerships to blue or white teams. At the end of the period, one student would collect the point cards and file them in a folder marked with the period number by the teacher’s desk. For the rest of the week, one student from each partnership was responsible for picking up his partnership’s packet of point cards at the beginning of each class period.

After students picked up the point cards, the teacher then implemented the PAL Game as described above. The teacher signaled the beginning of the rating period by setting the timer for 10 minutes and then proceeding to teach as normal. At the end of 10 minutes, the students were asked to rate themselves and then each other. The teacher periodically circulated at this point, and awarded bonus points for correct student behaviors. The timer was again set and the procedure repeated until the last 6 minutes of the class period. This was used to summarize team performance and find out who the mystery pairs were. At this point, when the peer partner ratings were reported, the secret,
or “mystery” partnerships ratings were compared to the teacher’s ratings of that partnership. Perfect agreements earned a 10-point bonus for the partnership’s team. Part way through Study 1, it was discovered that some students were not rating each other honestly. The teacher elected to modify the mystery match procedure so that partnerships with a perfect match earned a 20-point bonus, and those students whose ratings were not perfect or “next-door” matches lost 20 points.

Study 2

Trimester Change--Return to Baseline
(No PAL Condition)

The composition of the three language arts classes changed somewhat at this point, although the pool of students across the three classes remained the same. Data across the three new classes were collected under conditions in which the PAL Game was not in effect until treatment levels of on-task behavior reverted to initial baseline levels from Study 1.

PAL Game Review

The PAL Game/Curriculum was reintroduced with a 1-day review session across all three classes when baseline data were stable or at zero levels.

PAL 4--Match Four Times

During this condition, the students rated themselves four times in the class period as they had done during Study 1 when the PAL Game was first introduced.

PAL 2--Match Twice

During this condition, the students rated themselves twice in the class period instead of four times. This condition was implemented when two criteria were met. First, when the levels of group on-task behavior improved to the group being simultaneously on-task for at least 75% of the class period. Second, when targeted students rated their behavior as
“H” or “S” and had perfect or next door matches with their peers on at least three consecutive days. The point card was modified to reflect this requirement.

**PAL 1--Match Once**

During this condition, students rated themselves once in the class period instead of twice. This condition was implemented when two criteria were met. First, when the levels of simultaneous group on-task behavior improved to 75% of the class period. Second, when the targeted students rated their behavior as “H” or “S” and had perfect or next door matches with their peers on at least three consecutive days. Again, the point card was modified to reflect this requirement.

**No Matching**

During the no-matching condition, the teacher told the students that they were going to truly self-manage. They were not going to use point cards to rate themselves, nor would the teacher set the timer. Instead, she encouraged them to remember their A, B, Cs and to self-manage. Periodically, she asked the students if they were self-managing.

**Treatment Verification**

During the training sessions when the teacher trained the students in the PAL Game, a 56-item training checklist (Appendix J) was completed to ensure that the training was accurate and complete. The researcher checked under the “yes” column if each step of the training was completed as prescribed. If the step was omitted or incompletely taught by the teacher, the researcher marked the “no” column. The training verification data in each class was 98%. The teacher consistently omitted one step, which was teaching the students to applaud the winning team. The teacher explained that stopping to applaud the winning team seemed more disruptive to the class routine and less fair to all students. Since she was more comfortable praising both teams for effort, she decided to omit the applause.
Given her decision, this step was also deleted from the procedural fidelity checklist and therefore not required for 100% compliance with the checklist.

During the classroom observations of baseline and treatment conditions in Studies 1 and 2, a procedural checklist (Appendix C) was used to assess fidelity of implementation of the PAL Game. At least once a week during each condition, trained observers used the three-part, 30-item checklist (materials-5 items, teacher behaviors-16 items, student behaviors-9 items) to assess the presence of specific program materials (e.g., posted team point charts, student point cards), the correct sequence and occurrence of teacher behaviors (e.g., setting the timer), and correct student behaviors (e.g., rating self and partner, giving praise or corrective feedback). As with the training checklist, observers checked under the "yes" column if each step was completed as prescribed, or under the "no" column when steps were omitted or incomplete. Completing the checklist required the observer to note observable behaviors and to check a random sampling of point cards (two partnerships in each class) for accuracy and completeness at the end of each class period. This checklist was completed during baseline conditions, as well as treatment conditions to control for the possibility of the teacher administering all or part of the program to a class prior to implementation of the intervention. Percent correct and complete treatment implementation was calculated by dividing the number of items marked "yes" by the total number of items. Overall, the percentage of steps of the checklist completed averaged 6.7% during baseline conditions and 96.7% (range 86.7-100%) during treatment conditions.

Table 6 shows the treatment verification data for baseline and treatment conditions and for each section (materials, teacher behavior, and student behavior). It should be noted that in the materials section, the one item consistently present during baseline and treatment conditions was "classroom rules are posted." The information, coupled with the group on-task data across conditions, suggests that merely posting classroom rules does not significantly impact classroom behavior. The extent that the degree of fidelity with which a
Table 6

Procedural Fidelity Checklist--Percentage Steps Correct and Complete

<table>
<thead>
<tr>
<th>Study</th>
<th>Materials (5 items)</th>
<th>Teacher beh’s (16 items)</th>
<th>Student beh’s (9 items)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1 Baseline</td>
<td>20%</td>
<td>6.3%</td>
<td>0%</td>
</tr>
<tr>
<td>Study 1 Treatment (PAL)</td>
<td>95%</td>
<td>98%</td>
<td>94%</td>
</tr>
<tr>
<td>Study 2 No PAL</td>
<td>20%</td>
<td>6.3%</td>
<td>0%</td>
</tr>
<tr>
<td>Study 2 Treatment</td>
<td>100%</td>
<td>100%</td>
<td>94%</td>
</tr>
</tbody>
</table>

program is implemented is an indicator of the usability of the program; data from the procedural checklist were also used as a measure of the program’s feasibility.

Social Validity

Kennedy (1992) identified three major areas in which social validity is commonly assessed: goals, procedures, and outcomes. Social significance of the goals (i.e., selection of the target behaviors) was addressed, in that the teacher’s classroom rules and expectations formed the basis of the self-management program. In this study, it was particularly important to assess the social significance of the procedures and outcomes. To obtain a measure of the acceptability and feasibility of the procedures, students filled out questionnaires (see Appendix E) about how they liked the procedure, their perceptions of the impact of the procedure on their behavior and that of their classmates and teacher, whether they considered the procedure fair to all students, and so on.

The questions were designed to assess the acceptability (questions 1-4), likeability (questions 6, 7, 9, and 15), perceived effectiveness of the PAL Game at causing behavior change (questions 5, 8, 10, 13, and 14), and finally, the PAL Game’s perceived impact on classroom climate (questions 11 and 12). Table 7 shows the mean student ratings on acceptability, likeability, effectiveness, and classroom climate at the end of
### Table 7
Mean Student Ratings on Acceptability, Likeability, Effectiveness, and Classroom Climate

<table>
<thead>
<tr>
<th>Rating category</th>
<th>Study 1</th>
<th>Study 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean rating (% points poss.)</td>
<td>Mean rating (% points poss.)</td>
</tr>
<tr>
<td>Acceptability</td>
<td>9.96 (83%)</td>
<td>9.68 (81%)</td>
</tr>
<tr>
<td>(12 points possible)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likeability</td>
<td>9.5 (79%)</td>
<td>8.52 (71%)</td>
</tr>
<tr>
<td>(12 points possible)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effectiveness</td>
<td>11.24 (75%)</td>
<td>11.14 (74%)</td>
</tr>
<tr>
<td>(15 points possible)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom climate</td>
<td>4.66 (78%)</td>
<td>4.57 (76%)</td>
</tr>
<tr>
<td>(6 points possible)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Studies 1 and 2. The highest possible rating is shown in the left column under the type of rating. The results show a slight decrease in all ratings from the end of Study 1 to the end of Study 2. It is possible that the novel aspects of the program are reflected in the higher ratings at the end of Study 1 when students had been exposed to the PAL Game for between 2 and 8 weeks. In contrast, the second questionnaire was administered after some students had been exposed to the PAL Game for approximately 19 weeks.

The teacher also filled out a questionnaire assessing her perceptions of the acceptability of the intervention goals and procedures and satisfaction with the outcomes. Table 8 shows teacher ratings on acceptability of goals, procedures, and outcomes at the end of Studies 1 and 2. The highest possible rating is shown in the left column under the type of rating. The results show highly positive ratings in all categories addressed, with minimal or no change in all ratings from the end of Study 1 to the end of Study 2. There was only one question in the Acceptability of Goals category for which the teacher did not
assign the highest rating. This referred to the importance of students monitoring and correcting each other’s work, which she rated as somewhat important. There were two questions regarding the acceptability of the procedures, which she rated as “OK” rather than “liked it a lot.” These referred to how much she liked using timers and how much she liked having the students rate each other. She clarified her use of the less than maximum rating by explaining that she initially found it challenging to have students rate themselves and each other honestly.

In addition, to assess the social significance of the outcomes both in terms of on-task behavior and appropriate use of social skills by the targeted at risk individuals, these data were compared to those of a normative group of peers who were not identified as at-risk, and were selected by the teacher as “model” students. These data are presented in the Results section.
RESULTS

Study 1

In this study, the effect of the PAL Game on the amount of time that the class was simultaneously on-task, as well as on the percentage of intervals that targeted high-risk students were on-task, was examined. Data were collected on group on-task and target students’ on-task behavior and on target students’ appropriate use of the two social skills, following instructions and gaining teacher attention, in each phase (i.e., baseline, training, and PAL 4).

Group On-Task Data

Figure 4 presents the percentage of time all students in the class were simultaneously on-task across conditions and across classes. Table 9 presents the mean percentage of on-task behavior for each class across conditions as well as data taken in another seventh-grade language arts classroom with students similar to those in the target classes to provide an informal comparison. A different teacher who also had a master’s degree and 3 years of teaching experience taught the comparison class. Data are also provided on the difference between means from baseline to intervention conditions. In all 3 target classes simultaneous group on-task behavior remained at low to zero levels throughout baseline conditions. During training, group on-task behavior improved very slightly in all 3 target classes. After implementation of the PAL Game, there was a significant, marked improvement in group on-task behavior in all three classes, which continued to improve over time. In contrast, group on-task behavior in the comparison class remained at fairly low levels, albeit somewhat higher and with a broader range than that seen in the target classes, throughout the study.

Table 9 shows the means of group on-task behavior for the last 3 days of baseline and the last 3 days of treatment in each class. The standard deviations for baseline and
Table 9

Mean of Last 3 Days of Baseline and Last 3 Days of Treatment (SD for the Condition) and Difference Between Means in Group On-Task Behavior Across Conditions

<table>
<thead>
<tr>
<th>Class period</th>
<th>Baseline mean (SD)</th>
<th>PAL 4 mean (SD)</th>
<th>Difference between means</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1.7 (2.04)</td>
<td>78.3 (20.52)</td>
<td>76.6</td>
</tr>
<tr>
<td>4</td>
<td>0 (1.66)</td>
<td>89 (19.54)</td>
<td>89</td>
</tr>
<tr>
<td>7</td>
<td>0 (1.60)</td>
<td>77.7 (24.94)</td>
<td>77.7</td>
</tr>
<tr>
<td>Target classes</td>
<td>0.71 (1.66)</td>
<td>81.7 (21.12)</td>
<td>80.9</td>
</tr>
<tr>
<td>Comparison</td>
<td>6.8 (11.83)</td>
<td>7.5 (7.08)</td>
<td>0.7</td>
</tr>
</tbody>
</table>

treatment conditions are also provided in parentheses. The last column shows the magnitude of the improvement in mean on-task behavior from baseline to intervention conditions by showing the differences between mean on-task behavior at the end of baseline compared to mean on-task behavior at the end of the treatment condition for each class. Mean on-task behavior for the last three days of treatment after implementation of the PAL Game was 81.7% across all classes (range 10-95%). With the exception of two data points (2/23 in period 2 and 3/2 in period 7), the wide range in percentage of on-task behavior reflects an apparent gradual improvement in behavior associated with the length of time the PAL Game was in effect. The low percentages of on-task behavior (23% in period 2 and 10% in period 7) were observed on the day that students were engaged in a creative writing assignment. This same assignment apparently did not pose the same demands on the students in period 4 who were observed to be 85% on-task on the day of this assignment (2/23).

Target Students’ On-Task Data

Figures 5, 6, and 7 present the percentage of intervals each target high-risk student
engaged in on-task behavior in the language arts classroom across conditions. Table 10 shows the mean rate for target high-risk students across baseline and intervention conditions, difference between means, and percentage increase in mean on-task behavior. For all students, with the exceptions of Rich and Helena, on-task behavior increased immediately following implementation of the PAL Game. On the first day of the PAL Game, Rich’s on-task behavior remained at a low level (11%); however, his on-task behavior improved significantly on the second day of the PAL Game and remained above baseline levels for the remainder of Study 1. In Helena’s case, she was engaged in on-task behavior for 95% of the intervals on the day prior to training in the PAL Game. Thus, it was difficult for her to show any improvement in on-task behavior. Nevertheless, her mean on-task behavior did improve from baseline to treatment conditions. Although target student data showed more overlapping data points across conditions than observed in group on-task data, all students showed significant improvement in mean on-task behavior over baseline rates in each case when the PAL Game was implemented.

As shown in Table 10, mean on-task behavior averaging 35% in baseline increased to an average of 81% across students during the PAL 4 condition. This represents a mean percentage increase in on-task behavior from baseline to intervention conditions of 150% across students (range 72-265%). For those students whose baseline rates of on-task behavior were the lowest (Rich, Patricia, and Rebecca), the improvement in on-task behavior over baseline rates was 200% or better, in part, due to different ceiling effects. In contrast, for Helena, Cody, and Howie, the three students with the highest baseline rates of on-task behavior, the percentage increase in on-task behavior was the lowest (78%, 86%, and 72%, respectively). The somewhat higher levels of on-task behavior for target students than for the group across all conditions reflect the stringency of the group on-task measure; getting 30 students simultaneously on-task is more difficult than getting one student on-task.
Figure 5. Percent of intervals target students engaged in on-task behavior across conditions and periods--Study 1 (Rich, Howie, and John).
Figure 6. Percent of intervals target students engaged in on-task behavior across conditions and periods--Study 1 (Jay, Arvilo, and Ricardo).
Figure 7. Percent of intervals target students engaged in on-task behavior across conditions and periods--Study 1 (Cody, Helena, Rebecca, and Patricia).
<table>
<thead>
<tr>
<th>Student</th>
<th>Mean b/xline % (SD)</th>
<th>Mean PAL 4 % (SD)</th>
<th>Difference between means</th>
<th>Percentage increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jay</td>
<td>42 (5.17)</td>
<td>85 (11.69)</td>
<td>43</td>
<td>102</td>
</tr>
<tr>
<td>Rich</td>
<td>25 (16.22)</td>
<td>75 (17.92)</td>
<td>50</td>
<td>200</td>
</tr>
<tr>
<td>Cody</td>
<td>44 (12.07)</td>
<td>82 (8.08)</td>
<td>38</td>
<td>86</td>
</tr>
<tr>
<td>Helena</td>
<td>51 (30.38)</td>
<td>91 (12.33)</td>
<td>40</td>
<td>78</td>
</tr>
<tr>
<td>Arvilo</td>
<td>32 (13.55)</td>
<td>80 (11.75)</td>
<td>48</td>
<td>150</td>
</tr>
<tr>
<td>Howie</td>
<td>47 (9.76)</td>
<td>81 (13.55)</td>
<td>34</td>
<td>72</td>
</tr>
<tr>
<td>John</td>
<td>32 (17.34)</td>
<td>80 (13.02)</td>
<td>48</td>
<td>150</td>
</tr>
<tr>
<td>Ricardo</td>
<td>31 (21.84)</td>
<td>80 (7.02)</td>
<td>49</td>
<td>158</td>
</tr>
<tr>
<td>Patricia</td>
<td>24 (17.59)</td>
<td>81 (7.45)</td>
<td>57</td>
<td>238</td>
</tr>
<tr>
<td>Rebecca</td>
<td>20 (18.31)</td>
<td>73 (23.9)</td>
<td>53</td>
<td>265</td>
</tr>
<tr>
<td>All students</td>
<td>35 (10.59)</td>
<td>81 (4.94)</td>
<td>46</td>
<td>150</td>
</tr>
</tbody>
</table>

**Target Students’ Percentage of Appropriate Following Instructions**

Figures 8, 9, and 10 present the percentage of instructions followed appropriately across conditions and classes. Table 11 shows the mean percentage of instructions followed appropriately across conditions. Use of the social skill, “following instructions” was reported as the percentage of instructions followed, rather than as a frequency, in order to show the ratio between the number of instructions given and the number followed appropriately by target students. Percentage of instructions followed varied considerably across students and conditions. Although for each student there are overlapping data points across conditions, mean rates were lower during baseline (range 42-60%) than during PAL 4 conditions where mean rates ranged from 71 to 95%. For the most part,
Figure 8. Percent of instructions target students followed appropriately across conditions and periods--Study 1 (Rich, Howie, and John).
Figure 9. Percent of instructions target students followed appropriately across conditions and periods—Study 1 (Jay, Arvilo, and Ricardo).
Figure 10. Percent of instructions target students followed appropriately across conditions and periods--Study 1 (Cody, Helena, Rebecca, and Patricia).
Table 11

Mean Percent (SD) of Instructions Followed Across Conditions

<table>
<thead>
<tr>
<th>Student</th>
<th>Baseline mean % (SD)</th>
<th>PAL 4 mean % (SD)</th>
<th>Percent increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jay</td>
<td>56 (19.71)</td>
<td>82 (11.43)</td>
<td>46</td>
</tr>
<tr>
<td>Rich</td>
<td>44 (22.6)</td>
<td>80 (15.89)</td>
<td>82</td>
</tr>
<tr>
<td>Cody</td>
<td>60 (20.31)</td>
<td>88 (13.2)</td>
<td>47</td>
</tr>
<tr>
<td>Howie</td>
<td>44 (24.58)</td>
<td>73 (19.77)</td>
<td>66</td>
</tr>
<tr>
<td>Helena</td>
<td>50 (30.2)</td>
<td>94 (9.10)</td>
<td>88</td>
</tr>
<tr>
<td>Arvilo</td>
<td>42 (19.26)</td>
<td>87 (9.9)</td>
<td>107</td>
</tr>
<tr>
<td>John</td>
<td>57 (25.13)</td>
<td>88 (14.05)</td>
<td>54</td>
</tr>
<tr>
<td>Ricardo</td>
<td>54 (27.27)</td>
<td>71 (23.95)</td>
<td>31</td>
</tr>
<tr>
<td>Patricia</td>
<td>49 (23.14)</td>
<td>95 (7.09)</td>
<td>94</td>
</tr>
<tr>
<td>Rebecca</td>
<td>56 (29.15)</td>
<td>91 (14.82)</td>
<td>63</td>
</tr>
<tr>
<td>All students</td>
<td>51 (6.32)</td>
<td>85 (8.25)</td>
<td>67</td>
</tr>
</tbody>
</table>

The implementation of the PAL Game was associated with an immediate marked increase in the percentage of instructions followed.

On the average, students followed 51% of instructions appropriately during baseline, and 85% of instructions given during the PAL 4 condition. The percent increase in following instructions averaged 67% across all students (range 31-107%). Three of four students with the lowest baseline rate of following instructions (Rich, Patricia, and Arvilo) showed the largest percentage increase in mean percentage of instructions followed. Improvements in the percent of instructions followed were not as large as in on-task behavior; however, this is probably due to higher baseline rates of following instructions.
Target Students’ Frequency of Appropriate and Inappropriate Gaining Teacher Attention

Figures 11, 12, and 13 present the target students’ frequency of appropriate use of the social skill; gaining teacher attention across conditions. Table 12 shows the mean percent of teacher attention gained appropriately by target students and the difference between means from baseline to PAL 4 conditions.

Table 12
Mean Percent (n) of Teacher Attention Gained Appropriately by Target Students and Difference Between Means from Baseline to PAL 4 Condition

<table>
<thead>
<tr>
<th>Student</th>
<th>Mean baseline</th>
<th>Mean PAL 4</th>
<th>Mean difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jay</td>
<td>71% (1.4)</td>
<td>86% (5.46)</td>
<td>+15</td>
</tr>
<tr>
<td>Rich</td>
<td>90% (2)</td>
<td>75% (5.81)</td>
<td>-15</td>
</tr>
<tr>
<td>Cody</td>
<td>30% (2)</td>
<td>90% (8.47)</td>
<td>+60</td>
</tr>
<tr>
<td>Howie</td>
<td>22% (13)</td>
<td>58% (6.66)</td>
<td>+36</td>
</tr>
<tr>
<td>Helena</td>
<td>50% (4.44)</td>
<td>84% (7.57)</td>
<td>+34</td>
</tr>
<tr>
<td>Arvilo</td>
<td>37% (9.9)</td>
<td>74% (4.71)</td>
<td>+37</td>
</tr>
<tr>
<td>John</td>
<td>66% (4.45)</td>
<td>93% (1.5)</td>
<td>+27</td>
</tr>
<tr>
<td>Ricardo</td>
<td>58% (8.2)</td>
<td>88% (8.5)</td>
<td>+30</td>
</tr>
<tr>
<td>Patricia</td>
<td>54% (2.43)</td>
<td>98% (6.14)</td>
<td>+44</td>
</tr>
<tr>
<td>Rebecca</td>
<td>71% (4.7)</td>
<td>100% (4.89)</td>
<td>+29</td>
</tr>
<tr>
<td>All target students</td>
<td>55% (5.25)</td>
<td>85% (5.97)</td>
<td>+30</td>
</tr>
</tbody>
</table>
Figure 11. Frequency of times target students gained teacher attention appropriately and inappropriately across conditions--Study 1 (Rich, Howie, and John).
Figure 12. Frequency of times target students gained teacher attention appropriately and inappropriately across conditions—Study 1 (Jay, Arvilo, and Ricardo).
Figure 13. Frequency of times target students gained teacher attention appropriately and inappropriately across conditions--Study 1 (Cody, Helena, Rebecca, and Patricia).
As noted in the Methods section, individual data points showing use of the social skill “gaining teacher attention” was reported as frequency data, because teacher attention is not opportunity bound and functions as a free operant. Frequencies of this behavior were sometimes very low; therefore, it was not appropriate to convert these frequencies into a percentage on a daily basis. However, condition means for each student are reported as percentage of teacher attention gained appropriately by target students in Table 12. All students except Rich showed an increase in the percentage of times they gained the teacher’s attention appropriately. On the average, students increased the percentage of times they gained attention appropriately from 55% during baseline to 85% during PAL 4 conditions. The average increase was 30 percentage points across all students; however, the range was broad, from a decrease of 15 percentage points in Rich’s case to an increase of 60 percentage points in Cody’s case. The two students who demonstrated the highest levels of inappropriate teacher attention during baseline conditions, Howie and Arvilo, also showed the largest decrease in inappropriate teacher attention during PAL 4. Howie’s level of inappropriate teacher attention was, however, still considerably higher than that of other high-risk students in the three target classes.

As seen in Figures 11 through 13, the frequency with which target students gained teacher attention both appropriately and inappropriately varied considerably, both from student to student, and from day to day. For example, during training, students had more opportunities to respond to questions than was typically the case and thus, the high levels (from 15-30) exhibited by a number of students reflect high rates of participation. On 2/12 in period 4, and on 1/30 in period 2, observers noted on recording forms that the classes were engaged in a review activity. This apparently provided many opportunities to respond to questions since target students in these periods all exhibited relatively high frequencies of gaining teacher attention. For example, frequencies of gaining teacher attention appropriately for Helena, Howie, and Arvilo (period 4 students) on 2/12 were 32, 36, and
17, respectively. Frequencies of gaining teacher attention appropriately on 1/30 for Jay, Rich, and Cody (period 2 students) reached similar levels, 19, 21, and 29, respectively. Clearly, frequencies of gaining teacher attention vary depending on the student and the type of activity. Observers recorded information on the type of activity only when it clearly diverged from the norm; for example, when students were testing, playing a game, or watching a movie. There are other occasions when Cody, for example, gained teacher attention 25-30 times, but observers did not report any unusual activity. The definition used in this study does not discriminate between students gaining teacher attention as a means of participating and as a means of requesting help. Thus, it is impossible to determine whether the high frequencies of gaining teacher attention occasionally seen are inappropriately high and represent, perhaps, a student “bogging” a teacher. This issue will be addressed in more detail in the Discussion section.

Study 2--Systematic Withdrawal of the PAL Game

In this study, the effect of the systematic withdrawal of the PAL Game on the maintenance of treatment gains was examined. This study began at the beginning of third trimester when the composition of the three target classes changed, as described in the methods section. The PAL Cards were removed and baseline conditions were reinstated across all classes. Data were collected on the amount of time that the class was simultaneously on-task as well as on the percentage of intervals that target high-risk students were on-task. In addition, data were collected on target students’ appropriate use of the two social skills, following instructions and gaining teacher attention, in each phase (i.e., No PAL baseline, review, PAL 4, PAL 2, PAL 1, and No PAL).

Group On-Task Data

Figure 14 presents the percentage of time that all students in the class were simultaneously on-task across classes as the PAL Game was systematically withdrawn.
Figure 14. Systematic withdrawal of PAL cards: Percent of time group simultaneously on-task across conditions and classes--Study 2.
Table 13 presents the mean percentage of on-task behavior for each class across conditions, as well as data taken in another seventh-grade language arts classroom with students similar to those in the target classes. During the reinstatement of baseline conditions when the PAL Game cards were suddenly completely withdrawn, group on-task behavior in all target classes quickly returned to zero or low levels. It should be noted that group on-task behavior in period 7, the class whose composition had changed the least from second to third trimester, declined the fastest. Most of these students had experienced the PAL Game for only 2 weeks, in contrast to most students in periods 2 and 4, who had been exposed to the PAL Game for between 4 and 6 weeks. After one day of training in which the PAL Game was reviewed and PAL Cards were reintroduced in periods 2 and 4, group on-task behavior increased immediately and quickly reached the criterion of 75% on-task for extending the rating period and moving to the next condition. Period 7 remained in baseline conditions for an additional 4 days for two reasons: the teacher had to leave class early to arrange student body officer elections the first two days, and on the following two days, approximately 25% of the seventh-period students were absent from class to count ballots. The teacher elected to wait to reintroduce the PAL Game until the normal daily routine returned.

Table 13

Mean Percent (SD) Group On-Task Across Conditions and Classes

<table>
<thead>
<tr>
<th>Condition</th>
<th>Period 2</th>
<th>Period 4</th>
<th>Period 7</th>
<th>All target classes</th>
<th>Comparison Gp</th>
</tr>
</thead>
<tbody>
<tr>
<td>No PAL (b-line)</td>
<td>12 (71.93)</td>
<td>16 (20.69)</td>
<td>8 (22.08)</td>
<td>11 (20.10)</td>
<td>6 (4.82)</td>
</tr>
<tr>
<td>PAL 4</td>
<td>71 (15.16)</td>
<td>71 (12.88)</td>
<td>73 (11.91)</td>
<td>72 (12.78)</td>
<td>5 (6.78)</td>
</tr>
<tr>
<td>PAL 2</td>
<td>80 (10.65)</td>
<td>79 (11.17)</td>
<td>70 (15.02)</td>
<td>77 (12.76)</td>
<td>8 (7.66)</td>
</tr>
<tr>
<td>PAL 1</td>
<td>83 (8.19 )</td>
<td>84 (8.72 )</td>
<td>82 (10.69)</td>
<td>83 (8.74)</td>
<td>10 (10.31)</td>
</tr>
<tr>
<td>No PAL</td>
<td>81 (10.85)</td>
<td>82 (6.16 )</td>
<td>86 (5)</td>
<td>83 (7.86)</td>
<td>13 (14.07)</td>
</tr>
</tbody>
</table>
Periods 2 and 4 met criterion for moving to two markings per period on the 9th day after reintroduction of the PAL Game; however, period 7 did not reach criterion until the 15th day after reintroduction of the PAL Game. During the PAL 2 condition for periods 2 and 4 and PAL 4 condition for period 7, a noticeable decrease in on-task behavior can be seen immediately following the spring break vacation in all three classes (represented by the scale break on Figure 14). After consultation with the researcher, the teacher decided to briefly review classroom rules and expectations in all three classes. Group on-task behavior improved following this review and criterion for extending the rating period was met on a Wednesday in all three classes. Since this was a short school week with no school on the Friday, the teacher decided to change phase on the following Monday. Unfortunately, the next day (i.e., Thursday), group on-task behavior dropped to 58% and 68% in periods 2 and 4, respectively. Given mean on-task behavior rates of 80% and 79% for periods 2 and 4, respectively, during PAL 2 conditions, the teacher and consultant decided that this drop in group on-task behavior may have been due to the imminent long weekend. For this reason, the teacher went ahead and moved periods 2 and 4 to one marking the following school day. Mean on-task behavior for periods 2 and 4 during PAL 1 marking was 83% and 84%, respectively. For period 7, mean on-task behavior was 70% during PAL 2 and 82% during PAL 1.

Although periods 2 and 4 quickly reached criterion during PAL 1 for removing the PAL Cards altogether, the teacher was reluctant to do this, especially given her experience at the beginning of the trimester when baseline conditions had been reinstated. However, a number of students in periods 2 and 4 noted that they were not self-managing as long as they still used PAL Cards. They requested that they be given the chance to demonstrate their self-management skills. Thus, for the last 7 days of school for periods 2 and 4 and the last 5 days of school for period 7, no PAL Cards were present. Group on-task
behavior remained at high levels averaging 81%, 82% and 86% in periods 2, 4, and 7, respectively.

Target Students' On-Task Data

Figures 15, 16, and 17 show the percentage of intervals that target students engaged in on-task behavior in periods 2, 4, and 7. Table 14 shows the mean percentage of on-task behavior for each student across all conditions in both Studies 1 and 2. Across all three periods, every student’s rate of on-task behavior decreased when the PAL Cards were removed at the beginning of Study 2; however, only Howie’s behavior dropped below that of his baseline rate during Study 1. For each target student, the reinstatement of the PAL Game was associated with an increase in on-task behavior to levels similar to those exhibited by the student during the PAL 4 condition in Study 1. For Rich and Ricardo, however, the improvement in on-task behavior was less noticeable. Rich’s behavior showed great variability during the PAL 4 phase, but stabilized somewhat after moving to the PAL 2 phase. In contrast, Ricardo’s behavior remained variable throughout the rest of this study. Ricardo’s chart in Figure 17 does show a number of missing data points during Study 2. Ricardo, the only student with a documented learning disability and behavior disorder, was suspended on two separate occasions for fighting during this study. His on-task behavior in Study 2 never reached the levels he exhibited in Study 1. In contrast, all other target students demonstrated, fairly consistently, high levels of on-task behavior during the systematic withdrawal of the PAL Game.

During the last condition in which PAL Cards were totally withdrawn, Helena and Rebecca exhibited significant decreases in the percentage of intervals engaged in on-task behavior, from 81% to 66% and from 76% to 62%, respectively. As Figure 16 shows, Helena is missing three data points during the last condition. This absence was due to a 3-day suspension for fighting with another student. Rebecca’s on-task behavior during this
Figure 15. Percent of intervals period 2 target students engaged in on-task behavior across conditions—Study 2 (Rich, John, and Cody).
Figure 16. Percent of intervals period 4 target students engaged in on-task behavior across conditions--Study 2 (Howie, Helena, and Arvilo).
Figure 17. Percent of intervals period 7 target students engaged in on-task behavior across conditions--Study 2 (Jay, Ricardo, Rebecca, and Patricia).
Table 14

Mean Percent of Intervals (SD) Engaged in On-Task Behavior Across All Conditions (Studies 1 and 2) for Each Target Student

<table>
<thead>
<tr>
<th>Phase</th>
<th>Jay</th>
<th>Rich</th>
<th>Cody</th>
<th>Howie</th>
<th>Helena</th>
<th>Arvilo</th>
<th>Rebecca</th>
<th>John</th>
<th>Ricardo</th>
<th>Patricia</th>
<th>All Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B/lne</td>
<td>42</td>
<td>25</td>
<td>44</td>
<td>47</td>
<td>51</td>
<td>32</td>
<td>20</td>
<td>32</td>
<td>31</td>
<td>24</td>
<td>35</td>
</tr>
<tr>
<td>PAL</td>
<td>85</td>
<td>75</td>
<td>82</td>
<td>81</td>
<td>91</td>
<td>80</td>
<td>73</td>
<td>80</td>
<td>80</td>
<td>81</td>
<td>81</td>
</tr>
<tr>
<td>4</td>
<td>(11.69)</td>
<td>(17.92)</td>
<td>(8.08)</td>
<td>(13.55)</td>
<td>(12.33)</td>
<td>(11.75)</td>
<td>(23.9)</td>
<td>(13.02)</td>
<td>(7.2)</td>
<td>(7.45)</td>
<td>(4.94)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Study 1</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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<td>74</td>
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<td>58</td>
<td>56</td>
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<td>66</td>
<td>86</td>
<td>74</td>
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<td>73</td>
<td>74</td>
<td>79</td>
<td>66</td>
<td>84</td>
<td>76</td>
</tr>
<tr>
<td>PAL</td>
<td>76</td>
<td>86</td>
<td>80</td>
<td>78</td>
<td>72</td>
<td>a</td>
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<td>70</td>
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<td>75</td>
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<td>(12.94)</td>
<td>(10.66)</td>
<td>(16.45)</td>
<td>(15.64)</td>
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<td>(8.84)</td>
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<tr>
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<td>74</td>
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<td>88</td>
<td>71</td>
<td>86</td>
<td>79</td>
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</tr>
<tr>
<td></td>
<td>(8.66)</td>
<td>(13.35)</td>
<td>(6.31)</td>
<td>(15.58)</td>
<td>(23.35)</td>
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<td>(34.6)</td>
<td>(11.61)</td>
<td>(24.13)</td>
<td>(10.39)</td>
<td>(11.23)</td>
</tr>
</tbody>
</table>

*Arvilo and his family moved out of state at this point in the study.*
last condition, remained relatively stable until the last day of school, when it dropped to 10%, similar in level to her pre-intervention rate. For the other students, no appreciable decrease in on-task behavior was associated with the removal of the PAL Cards.

**Target Students’ Percent of Appropriate Following Instructions**

Figures 18, 19, and 20 show the percentage of instructions that target students followed appropriately across conditions in periods 2, 4, and 7. Table 15 shows the mean percentage of instructions followed appropriately across conditions. All students demonstrated a slight decrease in the percentage of instructions followed from the level exhibited during the PAL 4 condition (Study 1) when baseline conditions were reinstated in Study 2. Although all students showed some variability within conditions in the percentage of instructions followed, on the whole, students continued to follow instructions appropriately during the systematic withdrawal of the PAL Game. The four students whose behavioral improvements did not maintain at the levels exhibited in Study 1 were Rich, Howie, Ricardo, and Helena.

On the average, target students followed 51% of instructions during baseline conditions of Study 1. This increased to 85% during the first intervention condition, PAL 4. Although removal of the PAL Cards and the return to baseline conditions was associated with a decrease in the mean number of instructions followed by all target students to an average of 68%, this rate increased with the reinstatement of the PAL Cards and remained at or above an average of 80% across the systematic withdrawal of the PAL Game.

**Target Students’ Frequency of Gaining Teacher Attention Appropriately and Inappropriately**

Figures 21, 22, and 23 show the frequency with which target students gained teacher attention appropriately and inappropriately across conditions during Study 2. Table
Figure 18. Percent of instructions target students followed appropriately across conditions and periods—Study 2 (Rich, John, and Cody).
Figure 19. Percent of instructions target students followed appropriately across conditions and periods—Study 2 (Howie, Helena, and Arvilo).
Figure 20. Percent of instructions target students followed appropriately across conditions and periods--Study 2 (Jay, Ricardo, Rebecca, and Patricia).
Table 15

Mean Percent (SD) of Instructions Followed Across All Conditions
(Studies 1 and 2) for Each Student

<table>
<thead>
<tr>
<th>Phase</th>
<th>Jay</th>
<th>Rich</th>
<th>Cody</th>
<th>Howi</th>
<th>Helen</th>
<th>Arvil</th>
<th>Ricar</th>
<th>John</th>
<th>Rebec</th>
<th>Patric</th>
<th>All S's</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td>B/line</td>
<td>56</td>
<td>44</td>
<td>60</td>
<td>44</td>
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<td>42</td>
<td>54</td>
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<td>51</td>
</tr>
<tr>
<td>PAL 4</td>
<td>82</td>
<td>80</td>
<td>88</td>
<td>73</td>
<td>94</td>
<td>87</td>
<td>71</td>
<td>88</td>
<td>91</td>
<td>95</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>(11.43)</td>
<td>(15.89)</td>
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<td>(19.77)</td>
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<td>(23.95)</td>
<td>(14.05)</td>
<td>(14.82)</td>
<td>(7.09)</td>
<td>(8.25)</td>
</tr>
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<td>70</td>
<td>73</td>
<td>49</td>
<td>74</td>
<td>61</td>
<td>55</td>
<td>71</td>
<td>86</td>
<td>79</td>
</tr>
<tr>
<td>PAL 4</td>
<td>92</td>
<td>66</td>
<td>95</td>
<td>68</td>
<td>76</td>
<td>71</td>
<td>71</td>
<td>86</td>
<td>95</td>
<td>95</td>
<td>82</td>
</tr>
<tr>
<td>PAL 2</td>
<td>81</td>
<td>91</td>
<td>98</td>
<td>75</td>
<td>85</td>
<td>*</td>
<td>62</td>
<td>77</td>
<td>76</td>
<td>77</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>(23.2)</td>
<td>(14.6)</td>
<td>(3.88)</td>
<td>(16.4)</td>
<td>(18.9)</td>
<td></td>
<td>(28.4)</td>
<td>(19.58)</td>
<td>(22.42)</td>
<td>(23.99)</td>
<td>(10.33)</td>
</tr>
<tr>
<td>PAL 1</td>
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<td>85</td>
<td>72</td>
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<td>90</td>
<td>80</td>
<td>90</td>
<td>94</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>NoPal</td>
<td>100</td>
<td>77</td>
<td>91</td>
<td>79</td>
<td>65</td>
<td>93</td>
<td>74</td>
<td>100</td>
<td>100</td>
<td>86</td>
<td></td>
</tr>
</tbody>
</table>

* As noted earlier, Arvilo and his family moved out of state at this point in the study.
Figure 21. Frequency period 2 targets gained teacher attention appropriately and inappropriately (Rich, John, and Cody).
Figure 22. Frequency period 4 targets gained teacher attention appropriately and inappropriately (Howie, Helena, and Arvilo).
Figure 23. Frequency period 7 targets gained teacher attention appropriately and inappropriately (Jay, Ricardo, Rebecca, and Patricia).
16 shows the mean percent of teacher attention gained appropriately for each student across conditions as well as the mean for all target students. On the whole, most students tended to maintain the improvements in frequency of gaining teacher attention appropriately across conditions. These results are not consistent across all students and all conditions. For example, during the first three conditions Ricardo showed high rates of appropriate and inappropriate teacher attention, which decreased in the last two conditions. In comparison with Study 1, Howie’s frequencies of both appropriate and inappropriate teacher attention were much lower during Study 2. During the last two phases, his inappropriate rate of gaining teacher attention was higher than his appropriate rate.

Although rates of gaining teacher attention inappropriately varied considerably across individual students and across conditions, target students did not revert back to the level exhibited during baseline conditions of Study 1 at any point after they had been taught the PAL Game. Table 16 shows that, on the whole, target students gained the teacher’s attention appropriately from 79 to 84% of the time across the systematic withdrawal of the PAL Game. This compares favorably to baseline conditions in Study 1 and Study 2 when target students gained teacher’s attention appropriately 55% and 65% of the time respectively.

**Target Students’ Social Competence and Antisocial Behavior**

Using the School Social Behavior Scale (SSBS; Merrell, 1993), the teacher rated the target students on their social competence and antisocial behavior in January, prior to baseline data being taken, and again in June, at the completion of the study. This rating scale provides separate scores for the social competence and antisocial behavior composite rating scales. In addition, scores are provided for the social competence subscales, namely, interpersonal skills, self-management skills, and academic skills, as well as the antisocial behavior subscales, namely, hostile-irritable, antisocial-aggressive, and
Table 16

Mean Percent (n) of Teacher Attention Gained Appropriately

Across All Conditions (Studies 1 and 2) for Each Student

<table>
<thead>
<tr>
<th>Phase</th>
<th>Jay</th>
<th>Rich</th>
<th>Cody</th>
<th>Howie</th>
<th>Helen</th>
<th>Arvilo</th>
<th>Rebec</th>
<th>John</th>
<th>Ricard</th>
<th>Patric</th>
<th>All S’s</th>
</tr>
</thead>
<tbody>
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<td>Base</td>
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<td>30</td>
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<td>50</td>
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<td>71</td>
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<td>58</td>
<td>54</td>
<td>55</td>
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<td></td>
<td>(1.4)</td>
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<td>(2)</td>
<td>(13)</td>
<td>(4.4)</td>
<td>(9.9)</td>
<td>(4.7)</td>
<td>(4.45)</td>
<td>(8.2)</td>
<td>(2.43)</td>
<td>(5.25)</td>
</tr>
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<td>75</td>
<td>90</td>
<td>58</td>
<td>84</td>
<td>74</td>
<td>100</td>
<td>93</td>
<td>88</td>
<td>98</td>
<td>85</td>
</tr>
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<td>(5.81)</td>
<td>(8.47)</td>
<td>(6.66)</td>
<td>(7.57)</td>
<td>(4.71)</td>
<td>(4.89)</td>
<td>(1.5 )</td>
<td>(8.5 )</td>
<td>(6.14)</td>
<td>(5.97)</td>
</tr>
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</tr>
<tr>
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<td>(2.5 )</td>
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<td>(1.89)</td>
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<td>(.75)</td>
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<td>69</td>
<td>77</td>
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<td>(5.5)</td>
<td>(4.64)</td>
<td>(2.55)</td>
<td>(5.1)</td>
<td>(2.3)</td>
<td>(1.44)</td>
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<td>(3.84)</td>
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<td>(1.51)</td>
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<td>90</td>
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<tr>
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<td>(2.51)</td>
<td>(3.33)</td>
<td>(2.67)</td>
<td>(2.92)</td>
<td></td>
</tr>
</tbody>
</table>

* As noted earlier, Arvilo and his family moved out of state at this point in the study.
Table 17 shows the pre/posttest mean scores and standard deviations for the group of target students for social competence and antisocial behavior expressed in standard SSBS scores. Higher scores on social competence scales indicate higher levels of functioning; higher scores on antisocial scales suggest higher levels of target students decreased from 116.08 to 108.40; again the teacher’s rating moved in the desirable direction with students approaching normative levels at the end of the study.

A t test for paired samples using the mean SSBS pre/posttest raw scores (n = 10) was calculated using the computer program SPSS for Windows. Table 18 shows the results of this for the composite and subscale scores, the level of significance, and the standard mean deviation effect size.

**Target Students’ Social Competence**

The results of the paired t test for the social competence composite rating and the subscales are statistically significant at the .001 level. That is, the difference between pre/post-test mean scores is an unlikely chance occurrence (fewer than 1 in 1,000 times would it be expected to occur by chance), assuming null is true, given repeated random sampling of that n-size. Since statistical significance tells us merely the probability of getting a difference this large when null is true and provides no information about the practical significance of the result, the standard mean difference (SMD) effect size was calculated for each composite rating and subscale. The SMD effect size provides an estimate of the magnitude of the result independent of n-size. An effect size greater than
Table 18

Degrees of Freedom, t-Values, One-Tailed Level of Significance, and SMD Effect Size for Treatment Group Calculated Using SSBS Pre/Posttest Raw Scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>t-value</th>
<th>Degrees of freedom</th>
<th>One-tail significance</th>
<th>SMD effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social competence</td>
<td>-8.21</td>
<td>9</td>
<td>&lt;.001</td>
<td>2.56</td>
</tr>
<tr>
<td>(Composite)</td>
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</tr>
<tr>
<td>Interpersonal skills</td>
<td>-7.22</td>
<td>9</td>
<td>&lt;.001</td>
<td>1.99</td>
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<tr>
<td>(Subscale)</td>
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<td></td>
</tr>
<tr>
<td>Self-management</td>
<td>-6.18</td>
<td>9</td>
<td>&lt;.001</td>
<td>1.67</td>
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<tr>
<td>(Subscale)</td>
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<td></td>
<td></td>
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<tr>
<td>Academic skills</td>
<td>-8.09</td>
<td>9</td>
<td>&lt;.001</td>
<td>2.96</td>
</tr>
<tr>
<td>(Subscale)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Antisocial behavior</td>
<td>3.00</td>
<td>9</td>
<td>.01</td>
<td>-.63</td>
</tr>
<tr>
<td>(Composite)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostile-irritable</td>
<td>2.74</td>
<td>9</td>
<td>.01</td>
<td>-.59</td>
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<tr>
<td>(Subscale)</td>
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</tr>
<tr>
<td>Antisocial-aggressive</td>
<td>2.81</td>
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<td>.01</td>
<td>-.60</td>
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<tr>
<td>(Subscale)</td>
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<td></td>
</tr>
<tr>
<td>Demanding-disruptive</td>
<td>3.16</td>
<td>9</td>
<td>.01</td>
<td>-.65</td>
</tr>
<tr>
<td>(Subscale)</td>
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</tbody>
</table>
1.0 is generally considered sizable. As Table 18 shows, the SMD effect size for the social competence composite is large and indicates that students were rated on the social competence composite rating more than 2.5 standard deviations higher at the end of the study than at the beginning. The SMD effect sizes for the social competence subscale ratings range from 1.67 to 2.96, the smallest effect size seen, for the self-management subscale.

**Target Students’ Antisocial Behavior**

The results of the paired t tests on the antisocial composite and subscale ratings were all statistically significant at the .01 level. That is, the difference between pre/posttest mean scores is an unlikely chance occurrence (fewer than 1 in 100 would it be expected to occur by chance), assuming null is true, given repeated random sampling of this n-size. As previously noted, statistical significance tells us merely the probability of getting a difference this large when null is true and provides no information about the practical significance of the result; therefore, the SMD effect size was also calculated for each composite rating and subscale. SMD effect sizes ranged from -.59 to -.65 and suggest small to moderate reductions in levels of maladaptive behavior across all subscales and the composite rating. Again, these effect sizes are based on the subjective ratings of one teacher who was not blind to the purpose of the study.

**Target Students’ Academic-Related Skills**

The author of the SSBS (Merrell, 1993) uses the term “academic skills” to describe the subscale of the SSBS, which measures academical-related skills, such as the frequency with which students listen to and carry out directions from the teacher, complete assignments on time, and so on. The academic skills subscale was used in this study as a measure of target students’ academic-related skills. As measured by this subscale rating of the SSBS, the result of the paired t test was statistically significant at the .001 level. In
addition, an SMD effect size of 2.96 indicates that the group of target students’
academically-related skills improved according to the teacher’s ratings by almost three
standard deviations. Table 19 shows the individual target students pre- and posttest raw
scores on the academic skills subscale of the SSBS.

The highest score that a student can receive on the academic skills subscale is 35;
this would indicate that a student frequently performs such behaviors as “completes
assigned activities on time,” “produces work of acceptable quality for his/her ability level,”
and listens to and carries out directions from teacher.” All students, except Ricardo,
improved substantially on teacher ratings of the academic skills subscale.

Target Students’ Academic and Citizenship Grades

Table 20 shows target students’ mean academic grades for language arts and overall
for first, second, and third trimester.

This study began 4 weeks into second trimester. The PAL Game was implemented
in the first class about 1 week later, in the second class at midterm, and in the last class 2
weeks prior to the end of second trimester. Therefore, there is no way to demonstrate a
functional relationship between the PAL Game and students’ grades, nor is it the intent of
this study to do so. Nonetheless, the data presented in Table 20 show that overall students’
grades did not improve during the course of the study. Although some students’ grades

Table 19
Pre- and Posttest Raw Scores on Academic Skills Subtest for Each Student

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Jay</th>
<th>Rich</th>
<th>Cody</th>
<th>Helen</th>
<th>Arvil</th>
<th>Howi</th>
<th>John</th>
<th>Ricar</th>
<th>Patric</th>
<th>Rebec</th>
<th>Mean</th>
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</thead>
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<td>18</td>
<td>18</td>
<td>20</td>
<td>18</td>
<td>17</td>
<td>20</td>
<td>14</td>
<td>12</td>
<td>20</td>
<td>17.5</td>
</tr>
<tr>
<td>Difference</td>
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<td>+7</td>
<td>+10</td>
<td>+8</td>
<td>+9</td>
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<td>+10</td>
<td>0</td>
<td>+11</td>
<td>+8</td>
<td>+7.8</td>
</tr>
</tbody>
</table>
Table 20

Target Students’ Mean (Range) Language Arts and Overall Grade Point Average by Trimester

<table>
<thead>
<tr>
<th>GPA</th>
<th>1st trimester</th>
<th>2nd trimester</th>
<th>3rd trimester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>LA GPA</td>
<td>Overall</td>
<td>LA GPA</td>
</tr>
<tr>
<td>Mean</td>
<td>2.1</td>
<td>2.3</td>
<td>2.4</td>
</tr>
<tr>
<td>Range</td>
<td>1.0 - 3.3</td>
<td>1.5 - 3.3</td>
<td>1.0 - 3.6</td>
</tr>
</tbody>
</table>

(both language arts and overall) improved second trimester over first trimester, with only three exceptions (Howie, John, and Patricia), all students’ grades deteriorated in third trimester.

Table 21 shows the target students’ mean (range) overall citizenship grades for each trimester. Individual citizenship grades for language arts are not reported because, with one exception, all students received 3.0 in each trimester for language arts. The exception was Ricardo who, in third trimester, received a 1.0 for citizenship.

In general, citizenship grades show a similar pattern to that seen with academic grades, namely, variability across students and trimesters. Taken as a whole, there is a slight improvement in overall citizenship grades of the target students; however, this average obscures substantial variability across students.

Table 21

Target Students’ Mean Overall Citizenship Grades Across Trimesters

<table>
<thead>
<tr>
<th>Citizenship grade</th>
<th>1st trimester</th>
<th>2nd trimester</th>
<th>3rd trimester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.5</td>
<td>2.5</td>
<td>2.7</td>
</tr>
<tr>
<td>Range</td>
<td>1.8 - 3.1</td>
<td>2.0 - 3.0</td>
<td>2.4 - 3.2</td>
</tr>
</tbody>
</table>
Social Comparison Data

Data were collected on four students, three boys and one girl, identified by the teacher as “model” students, to provide a normative group against which target students could be compared on measures of on-task behavior and appropriate use of the two social skills: following instructions and gaining teacher attention. These model students were all “straight A” honor roll students who had never exhibited behavior problems in class. Comparison students’ percentage of intervals engaged in on-task behavior averaged 91% (range 82-97%). Percentage of instructions followed for comparison students averaged 100%. Likewise, frequency of appropriate teacher attention averaged two times per period, with no inappropriate uses of this social skill recorded. In comparison, target students averaged 77% on-task across conditions in which the PAL Game or its systematic withdrawal was in effect (range 43-93%). In terms of appropriate use of social skills, target students followed an average 83% of instructions given and gained teacher attention appropriately an average of 3.4 times per period and inappropriately less than one time per period.

Acceptability and Feasibility Data

In line with one stated purpose of this study, namely to address the acceptability and feasibility of the PAL Game, this section presents the qualitative, descriptive data collected on the PAL Game intervention relating to the terms identified in the literature review which influence a teacher’s decision to use an intervention in a regular classroom. The data are summarized in Table 22 in a similar format to that found in the review of the literature.

Table 22 shows the personnel, material, and time requirements to implement the PAL Game, as well as summary data on feasibility and acceptability of the procedures to teacher and students. As noted in the table, the teacher needed 4 hours of training in the
## Summary of Acceptability and Feasibility Data

<table>
<thead>
<tr>
<th>Coding term</th>
<th>Measure</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources required</td>
<td>PAL Game description</td>
<td>Materials: Lesson plans, point cards, timer, ABC poster, classroom rules</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Personnel: 1 teacher, 2 students to record points</td>
</tr>
<tr>
<td>Time required to train teacher/</td>
<td>Training time documented</td>
<td>2 x 2 hour sessions to train teacher</td>
</tr>
<tr>
<td>students</td>
<td></td>
<td>From 90 to 125 minutes to train students (between 2 and 3 periods of 45 minutes each)</td>
</tr>
<tr>
<td>Time to implement</td>
<td>Time documented</td>
<td>10 seconds per marking period</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-5 minutes per class period to report points</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preparation of PAL Cards--to copy, cut, and staple point cards for this study took 1-2 hours per week for 90 students. Now that daily documentation is not required, the teacher uses laminated, reusable point cards with a total time requirement for the year of 2 hours.</td>
</tr>
<tr>
<td>Trainer (skill required)</td>
<td>Procedural checklist</td>
<td>Teacher trained students in PAL Game. Teacher implemented all teacher required steps of the procedural checklist at 97% accuracy in Study 1 and 100% accuracy in Study 2 (see Table 6). Students completed all student required steps of procedural checklist with 94% accuracy</td>
</tr>
<tr>
<td>Effects on child/others</td>
<td>On-task, FI, TA, SSBS group on-</td>
<td>Significant improvements in all target behaviors for target at risk students and group on-task behavior. Additionally, improvements in teacher ratings of target students’ social competence (see Tables 9-19)</td>
</tr>
<tr>
<td></td>
<td>task</td>
<td></td>
</tr>
<tr>
<td>Intrusiveness</td>
<td>Teacher report</td>
<td>Target students not identified in any way since this was a classwide procedure. Teacher’s existing classroom rules incorporated into PAL Game expectations. Little additional time taken from curriculum. In fact, teacher reported getting through the state core more quickly (between 3 and 9 school days fewer than normal) allowing her time to do other more desirable enrichment activities</td>
</tr>
<tr>
<td>Acceptability to students</td>
<td>Social validity questionnaire</td>
<td>Students gave positive ratings to acceptability, likeability, perceived effectiveness and classroom climate (see Table 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptability to teacher</td>
<td>Social validity questionnaire /</td>
<td>Teacher gave high ratings to acceptability of the goals and procedures (92%-97% of points possible) and satisfaction with outcomes (100% of points possible) (see Table 8). Teacher chose to use PAL Game in all classes this school year. Teacher has trained two other teachers in its use on their request.</td>
</tr>
<tr>
<td></td>
<td>teacher interview</td>
<td></td>
</tr>
</tbody>
</table>
procedure and the students required between 90 and 125 minutes. The teacher required an
additional 3-5 minutes each class period for students to mark their cards and report their
points. After the PAL Cards had been systematically withdrawn, this requirement was
eliminated. The treatment fidelity data indicate that teacher and students were able to
implement all elements of PAL Game with fairly high degrees of fidelity (range 94-100%)
and continued to do so throughout the course of both studies. As noted in the table, all
students participated in the procedure and, thus, high-risk students and those with
disabilities were not singled out in any way. The teacher reported, both in the social
validity questionnaire and informally, that the procedures were not intrusive in her
classroom routines. She also did not find them difficult or time consuming to implement.
The students on the whole rated the procedures positively on acceptability, likeability, and
effectiveness at producing behavior change and improving classroom climate.
DISCUSSION

There has been a need for research documenting practical and effective classwide behavior management programs that regular education classroom teachers can use to improve the appropriate behavior of the class as a whole, and of target high-risk students in particular. Increasingly, regular educators face new challenges in the classroom such as students with learning and behavioral disorders and growing numbers of at-risk students. More regular educators need and are seeking help to deal with these challenges, specifically, how to keep all students on-task. This study addressed this need by investigating the effects of the PAL Game in Study 1 and its systematic withdrawal in Study 2 on on-task behavior of three entire classes and of individual high-risk students. The effects of the PAL Game, a classwide, peer assisted, self-management procedure on target students’ appropriate use of two social skills, following instructions and gaining teacher attention, were also assessed, as well as the teacher’s ratings of students’ social competence and antisocial behaviors on the SSBS. The results of this study support and extend the findings of previous research, in that an attempt was also made to measure and document the acceptability and feasibility of this program in terms of time, resources, and skills required to implement the program, the ecological intrusiveness of the program, and its acceptability to students and the teacher, as well as its effectiveness.

Major Findings

Group on-task behavior. The data presented in Figures 4 and 14, and Tables 7 and 11 reveal that simultaneous group on-task behavior improved immediately after the PAL Game was taught and that improvements were maintained when the PAL Game was systematically withdrawn in Study 2. Before the PAL Game was introduced in each class, it was rare to see all class members on-task at the same time for even one minute during the period. The teacher spent a substantial portion of the class period managing student
behavior, redirecting them to get on task, and repeating instructions. After the PAL Game was introduced, group on-task behavior across all target classes increased from zero levels to almost 80% during the last few days of the intervention. In practical terms, this meant that all students were on-task at the same time for approximately 35 to 36 minutes of the 40-minute observation. Clearly, a teacher in a class in which every student is paying attention and following instructions for most of the period can teach more material with less stress and fewer frustrating distractions.

In Study 2, group on-task behavior averaged 12% during baseline conditions and improved to an average of 79% throughout the systematic withdrawal of the PAL Game. An interesting find in Study 2 was the abrupt decline in group on-task behavior to Study 1 baseline levels when the composition of the classes changed and the PAL Game cards were quickly withdrawn. When the PAL Game was reinstated, group on-task behavior quickly returned to the level seen in Study 1, even though the dynamics of the classroom had changed and students were, for the most part, sitting with different students. Systematically withdrawing the PAL Cards by gradually increasing the length of the rating period was associated with maintenance of improved behavior. This is in stark contrast to the effects seen when the PAL Cards were abruptly withdrawn.

There was a noticeable gradual improvement in group on-task behavior, the longer the intervention was in effect. Thus, during the last two conditions of Study 2 (PAL 1 and No PAL), group on-task behavior averaged above 80% in each class. Previous research has identified 80% simultaneous on-task behavior as the goal for an effectively managed classroom. For example, researchers examining the Program for Academic Survival Skills (PASS) established a criterion of 80% simultaneous group on-task behavior as the criterion for a successfully managed classroom (Greenwood et al., 1979). Thus, the results of this research indicate that the PAL Game also met this fairly stringent criterion for an effectively managed classroom.
An interesting finding in Study 2 was the longer time required by period 7 to reach the criterion of 75% on-task to move to the next phase. This class probably needed the intervention the most; however, the teacher wanted to start with a class that was smaller in size and not as challenging. There are a number of possible reasons for the greater length of time required to reach criterion for period 7. First, for the most part, these students had been exposed to this intervention in the first study for less time. Second, the return to baseline conditions in Study 2 lasted longer for period 7 than the other two classes because of unforeseen changes in class routines. Finally, 56% of the students in this period were identified as having a learning disability or behavior disorder, thus presenting perhaps greater demands on the teacher and perhaps higher levels of off-task behavior on the part of the students.

**Target students’ appropriate behavior.** The teacher had identified the target students because they lacked social and self-management skills and they frequently disrupted class. The teacher noted that it was very difficult to consistently discipline these students because they were so irritating. The teacher felt that she was constantly redirecting or disciplining them because they disrupted others, did not follow directions, called out, and chatted with classmates. The data presented in Figures 5 through 13 and 15 through 23 show that student behavior generally improved immediately after training in the PAL Game. Target students were on-task more than 80% of the period compared to 35% during baseline.

Consistent with previous research (DiGangi et al., 1991; Edwards et al., 1995; Hughes & Boyle, 1991; Kern et al., 1994; McLaughlin, 1984; Miller et al., 1993; Prater et al., 1991; Rhode et al., 1983), training in self-management was associated with marked improvements in appropriate classroom behavior, in this case, on-task behavior as well as appropriate use of social skills. As a group, target students showed a mean percentage increase of 150% in on-task behavior over baseline levels. These improvements are even more dramatic for those students who demonstrated the lowest levels of on-task behavior.
during baseline conditions. For example, Patricia, whom the teacher described as one of the most demanding students, improved from an average of 24% on-task during baseline to 81% during PAL 4 conditions, a 238% increase. For the most part, students maintained these improvements during the systematic withdrawal of the PAL Game. Students also improved, on the whole, in the appropriate use of the two social skills, following instructions and gaining teacher attention. One student, however, represents a clear exception to this. Ricardo’s on-task behavior never reached the levels in Study 2 that he had previously exhibited during Study 1 when the PAL Game was first introduced. For Ricardo, other contingencies appeared to be influencing his behavior, which were stronger than the PAL Game. Although, in this class his behavior was more appropriate than it had been before the PAL Game was introduced, he was also having major difficulties in other classes. He was receiving counseling for anger management; however, he continued to respond physically when irritated by others. He was suspended twice during Study 2 because of the number of times he had been referred to the office by other teachers for disruptive, insubordinate behavior.

Rich and Helena also demonstrated more variability in behavior during Study 2 than seen in Study 1. As in Study 1, Rich did not respond immediately to the introduction of the PAL Game; however, once he did, his behavior was fairly stable. Helena demonstrated high rates of variability throughout both studies. Her on-task behavior ranged from 0 to 100%. It is important to note that Helena was being treated for depression with Paxil and, according to the school counselor, was still working with her doctor on appropriate dosage and type of medication. In retrospect, it would have been informative to document any changes in dosage or type of medication during this study to identify any possible relationships.

The percentage of instructions followed for all students improved from baseline to PAL 4 conditions with an average of 85% of instructions followed, compared to 51%
during baseline. For the most part, these improvements maintained across the systematic withdrawal of the PAL Game in Study 2, with students following an average of 80% or more of instructions given. While these improvements are not as dramatic as the improvements in on-task behavior, this may be due to somewhat higher baseline levels of this behavior. In terms of use of the skill, gaining teacher attention, other than an increase in mean frequency of gaining teacher attention inappropriately during the PAL 2 condition, mean frequencies, in general, were lower for target students when the PAL Game was in effect than when it was not. However, there is substantial variability across individual students which remains unexplained. For example, why was it that Ricardo’s frequency of gaining teacher attention inappropriately was so much higher in the first three phases of Study 2 than at any time in Study 1? As noted earlier, Ricardo’s behavior deteriorated across all school settings as indicated by number of days he was suspended during Study 2. This suggests that the contingencies involved in the PAL Game were limited in their effects on his behavior.

Interestingly, three students, Howie, Arvilo, and John, gained the teacher’s attention less frequently, both appropriately and inappropriately, after the PAL Game was implemented. Gaining teacher attention in this study could serve two purposes: first, for students to participate in class by answering questions or adding information; second, for students to request help or clarification. These three students tended to raise their hands or call out for the teacher’s attention in an attempt to “put off” beginning the task. Howie wanted one-on-one attention to complete the task, whereas Arvilo and John were clear cases of “putting off” the task. Although for Howie and Arvilo the reduction in frequency of gaining teacher attention was primarily inappropriate teacher attention and, therefore, the reduction of an undesirable behavior, John’s frequency of gaining teacher attention appropriately declined from an average of 2.9 to 1.4. Do John’s data suggest that the PAL Game improves appropriate classroom behavior at the expense of participation? In order to
address this question, it is necessary to analyze exactly which behaviors were captured by the definition used in this study for gaining teacher attention. Unfortunately, as noted above, the definition used in this study does not permit discrimination between the two distinct purposes of gaining teacher attention. Thus, although frequencies of gaining teacher attention may reflect participation, they may also reflect a student’s unwillingness or inability to begin a task. In retrospect, it would be helpful to differentiate between the student gaining the teacher’s attention to actively participate in class, surely a desirable behavior, and the student who gains the teacher’s attention to delay beginning a task.

Additional questions raised by the results in this study include the number of times that regular education teachers will typically tolerate a student getting their attention particularly to request help or clarification. For example, is it appropriate or desirable (on the part of the teacher at least) for students to gain the teacher’s attention 10-15 times per period? How many call-outs per class period are acceptable? How many times may a student gain attention appropriately in a class period until he or she is considered a “pest”? Some information in this area is available in the literature on recruiting teacher attention that, of course, does not include participation. In a study where students were taught in a special education setting how to recruit teacher praise in a regular education setting, Craft, Alber, and Heward (1998) noted that acceptable recruiting rates should be determined for each generalization setting to guard against creating “pests” who seek teacher attention too frequently. A limited sample of normative data on model students in this classroom revealed that these students gained attention appropriately two times per period and exhibited no inappropriate uses at all. More data on normative rates of gaining teacher attention across different activities, settings, and teachers is needed. In addition, the relationship between high-risk students’ frequency of gaining teacher attention and their classroom participation should be explored.
Target students' social competence and antisocial behavior. Teacher ratings of
target students' social competence showed marked improvements across all subscales.
Standard mean deviation (SMD) effect sizes ranged from 1.67 to 2.96, which are sizable,
and a step toward showing the practical significance of the PAL Game. Unlike statistical
significance, an effect size provides an estimate of the magnitude of the result independent
of sample size. The teacher rated the target students' behavior between one and a half and
three standard deviations higher after the PAL Game. The magnitude of the effect sizes
found here is reflected in the sizeable improvements seen in the data collected by
independent observers. However, there is one somewhat counterintuitive finding. Given
the nature and purpose of the PAL Game, it is surprising that the smallest effect size was
seen with the self-management subscale. Closer examination of the items contained in the
subscales indicates possible explanations for these results. Many items on the self-
management subscale (ES = 1.67) address behaviors not directly targeted (e.g., cooperates
with students, remains calm when problems arise, controls temper when angry, shows
self-restraint) and behaviors that a regular classroom teacher may not see. In contrast,
many items on the academic skills subscale (ES = 2.96) address behaviors directly targeted
by the PAL Game (e.g., listens to and carries out directions from the teacher, completes
assignments on time, appropriately asks for assistance as needed). It is important to note
that these effect sizes are based on the subjective ratings of one teacher who was aware of
the purpose of the study, and, therefore, a source of potential bias. Nevertheless, the
improvements in these subjective ratings are, for target behaviors, supported by the direct
observational data collected by independent observers.

The more moderate results seen with the antisocial behavior rating and its subscales
with SMD effect sizes showing decreases in maladaptive behaviors ranging from -.59 to
-.65 indicate that the PAL Game is more effective at building new behaviors than at
eliminating bad behaviors. Apparently, teaching students appropriate classroom behaviors
does not necessarily eliminate some of their inappropriate behaviors. This result can be interpreted in a number of ways. On one hand, high-risk students may make major improvements in their behavior, yet still have plenty of room to exhibit bad behaviors. On the other hand, perhaps the teacher, who identified these students as high-risk, found it easier to note the increase in positive behaviors than to forget about students' past inappropriate behaviors. Also there might be a contrast effect—as appropriate behavior increases, inappropriate behavior stands out more. Perhaps the reason for smaller improvements in antisocial behavior is because negative behaviors are maintained with thinner schedules of reinforcement, making them much more stable and resistant to change than prosocial behavior.

**Academic-related skills and grades.** Merrell (1993) used the terminology academic skills to describe the subscale measuring academic-related skills. Given the close parallel between items comprising the academic skills subscale and behaviors directly targeted in the PAL Game, the large effect size noted with the academic skills subscale is not surprising. In addition, this result may be influenced by the fact that the teacher selected the behaviors that she wanted to address and was also aware of the purpose of the study. In this situation, experimenter bias or expectancies cannot be ruled out. It is noteworthy that the teacher’s ratings of Ricardo’s academic skills (and, indeed, her overall ratings of his social competence and antisocial behavior) did not improve. Observational data of Ricardo’s on-task behavior and appropriate use of the social skills following instructions and teacher attention indicated substantial variability in his behavior during Study 2. Of all students, Ricardo appeared the least able to maintain treatment gains made in Study 1 during the systematic withdrawal of the PAL Cards in Study 2. His rate of on-task behavior and frequency of gaining teacher attention appropriately, in particular, did not maintain.
In terms of the collateral measures of academic and citizenship grades, there were no concomitant improvements in target students' grades. This is somewhat disappointing, given the observed improvements in on-task behavior and anecdotal reports by the teacher of increased academic productivity; however, improvements were not explicitly expected for a number of reasons. First, there is the issue of sensitivity of the measure. The PAL Game was not implemented in the first class until part way through second trimester and, for the last class, not until 2 weeks before the end of second trimester, leaving little time to impact measures such as grades. In addition, 50% of the students' grade in third trimester was based on their completion of a research report, much of which had to be completed at home. In contrast, students' grades in first and second trimester were based on their performance on 20 (first trimester) and 26 (second trimester) assignments completed during class. Grades are an indirect measure of a program's effectiveness; a more direct and sensitive measure might have been individual assignment grades or assignment completion and accuracy rates. In light of previous research documenting the relative superiority of monitoring performance rather than attention on completion and accuracy rates (Harris et al., 1994; see Reid, 1996, for a review), it is possible that even these more sensitive measures may not have shown improvement.

It is important to note, however, that the purpose of this study was to examine the effects of the PAL Game on appropriate classroom behavior rather than academic performance; indeed, the intervention itself did not contain any direct teaching of academic behaviors. DiGangi et al. (1991) noted that self-management of attention is a general strategy, whereas performance strategies tend to be specific to a subject or content area (for example, subtraction with regrouping [Dunlap & Dunlap, 1989]) and may not generalize as well. This limitation may also be relevant to this research in that a performance-based monitoring strategy may be less adaptable for classwide use, given its need to be specifically tailored to individual students' weaknesses. Notwithstanding these comments,
it would be interesting to examine the possible effects of a more general academic self-management procedure such as that used by Glomb and West (1990) with an entire class of students.

**Social comparison data.** Despite marked improvements in target high-risk students’ behavior, a comparison of their performance with a limited set of normative data on model students in the same classroom showed differences in level and variability. Clearly, target students did not consistently behave at the levels exhibited by the model students; however, target students’ mean on-task behavior toward the end of Study 2 did fall within the range exhibited by model students. Comparison students consistently used the two social skills appropriately, whereas target students continued to show fairly substantial variability in appropriate use of following instructions and teacher attention. It is important to note that the comparison was made with model students rather than, say, typical students. These model students had also been exposed to the PAL Game and, therefore, had possibly improved their own behavior. Perhaps a more appropriate comparison would have been to compare high-risk target students with “typical” students and “typical” students with model students. Even more importantly, more samples of social comparison data should have been collected on typical and model students across all phases of both studies. In addition, since these were middle school students, it might have been helpful to note the effects of learning histories. Model students have typically had years of good behavior reinforced; at-risk students, years of inappropriate behavior. It would be interesting to examine the effects of learning history on the stability of appropriate and inappropriate behavior. Perhaps sustained use of the PAL Game over an entire school year, multi-years, or earlier in the school history might have resulted in greater, more consistent impact.

**Acceptability and feasibility data.** Table 21 shows the efforts made in this study to document the acceptability and feasibility of the PAL Game in relation to terms identified in
the literature as affecting a teachers's use of an intervention. Where comparisons can be made with other classwide studies (see Table 2), the PAL Game compares favorably in terms of the time, personnel, and material resources required to implement the game. In addition, the teacher taught her classes how to self-manage and implemented the steps of the procedure with 94% accuracy during Study 1 and 100% accuracy with Study 2.

Kauffman (1996) noted that one characteristic of research-based procedures that are most likely to affect teaching practices is that the research-based procedures can be implemented with a high degree of fidelity. If one accepts the notion that the degree to which someone implements a treatment is an indicator of its feasibility (i.e., a measure of the ability of the teacher to implement the intervention in the classroom, given current resources and training [Odom et al., 1994]), then the PAL Game should receive a relatively high rating.

The PAL Game received moderate to high ratings from students on its acceptability, likeability, and perceived effectiveness at improving behavior and classroom climate and high ratings from the teacher. The teacher noted that she would use the procedure again and has implemented the procedure with minor modifications in all classes from the beginning of the current school year (1998-99). The modifications include using a laminated card to reduce paper requirements and save point card preparation time. The only concern that the teacher had with the PAL Game related to the honesty with which students rated themselves. The teacher noted at the end of Study 1 that “getting all students to rate themselves honestly and match my idea of what is acceptable is somewhat of a challenge. Overall, the students do it well, but a few still need work at it.” To address this concern, the teacher decided to increase the bonus points to 20 points (from 10) that students could earn by rating themselves honestly and also impose a 20 point deduction for not rating honestly. This was implemented in Study 2. By the end of the second study, the teacher commented that she “found herself less stressed because the students were more on task. Also, I was able to help more students who needed additional help because the
others were taking care of themselves or helping each other. I only wish I had started this at the very beginning of the year.”

The results of this study support and extend the findings of previous research, showing that students with and without disabilities can be successfully taught to manage their on-task behavior using classwide self-management programs (Glynn et al., 1973; Miller, et al., 1993; Rooney et al., 1984). Previous research has documented the effects of classwide self-management procedures with preschool and first- and second-grade children, but has not examined its effects in an experimentally controlled study with secondary aged students. In addition, this study evaluated the intervention’s effects on on-task behavior of the entire class as well as that of target high-risk students. A novel aspect of this research was the attempt to measure and document the practicality, feasibility, and acceptability of the PAL Game. Efforts should be made to further develop measures to quantify and analyze feasibility and acceptability of actual interventions that teachers use and to examine the relationship between these data and a teacher’s continued use of an intervention. Previous research on acceptability and feasibility of interventions has typically taken the form of surveys of teachers to identify the acceptability of different interventions for particular behavior problems (Kazdin, 1981; Elliot et al., 1984; Von Brock & Elliot, 1987; Witt et al., 1983). Odom et al. (1994) extended this research to social skills interventions and also examined the relationship between feasibility and current use of strategies; however, they also used a survey of teachers rather than direct observation to assess the feasibility of an intervention. Although this study documented the actual use of the PAL Game, a major limitation is that it addressed these issues of practicality, feasibility, and acceptability with only one teacher who volunteered to participate in the study.

Implications for Classroom Practice

Classroom behavior management remains a major concern of teachers and administrators despite the existence of effective, research-based behavior management
tools. Because regular education classrooms have large numbers of students, a broad mix of abilities, and often a wide range of teacher abilities, regular education teachers do not see some behavior management strategies as feasible. Teaching students to self-manage on a classwide basis can be a relatively low-cost, low-effort strategy for teaching students how to self-manage and meet classroom expectations. In this study between 90 and 125 minutes of training and approximately 3 minutes a day for implementation were needed with each class of 30 students.

A related issue to consider is that of contextual fit. Albin, Lucyszyn, Horner, and Flannery (1996) suggested the importance of contextual fit of a behavioral support plan in affecting implementation of the plan's interventions. Albin and Sandler (1998) stated that contextual fit is influenced by the plan's compatibility with the implementor's goals, values, and skills; the degree to which procedures can be embedded with typical routines and daily flow of activities; and the degree to which components utilize existing resources and support systems and are logistically sustainable. Not only can these issues be applied to classroom-based interventions as well as behavioral support plans, they mirror the factors Witt (1986) identified as influencing a teacher's use of an intervention. These factors--time and resources, theoretical orientation, ecological intrusiveness, acceptability and effectiveness--were considered in the development of this intervention. This teacher considered the PAL Game to be a good "contextual fit" with her classroom; this was reflected in her ability to implement the program with fidelity and in both teacher and student ratings of acceptability.

In this study there were marked and practically significant improvements in on-task behavior of the group and of target high-risk individuals as well as improvements in teacher ratings of social competence and academic related skills. Even though improvements in target high-risk students' behavior were more variable than those seen with group on-task behavior, these findings must also be considered in practical, cost-
benefit terms. A classwide procedure requiring little additional teacher time and effort produced marked improvements in the behavior of the class as a whole and with high-risk students. Whether individualized behavior management plans for high-risk students would have produced more consistent gains in their behavior is not only an empirical question but also a question of cost. How much more time and effort is required to produce what may be minimally different gains? Given a general belief that attention to task is a necessary but not sufficient condition for learning (Witt, 1986), it is encouraging that a procedure requiring minimal teacher time and effort can produce such gains in all students including those who are considered high-risk.

In order to be a good contextual fit, self-management training requires the teacher to assess his or her own instructional routines and classroom expectations prior to training students to ensure that the PAL Game is modified to fit his or her classroom. Effective self-management training will also include direct teaching of classroom expectations and periodic reviews of these, especially after any appreciable break in routines. Self-management training should include systematic role playing of the full range of possible behaviors that students are self-managing so that students learn to accurately assess others’ perceptions of their behaviors. In addition, students may need to be encouraged to rate themselves and their partner honestly by having the teacher conduct periodic mystery matches with different dyads. The consequence or cost for rating honestly or dishonestly may need to be adjusted to encourage some students to rate themselves accurately.

**Considerations and Future Research**

In this study, one teacher taught three classes of students to self-manage. For self-management training to produce the greatest possible benefits, students’ self-management skills must generalize to a wide range of relevant settings and significant adults (Horner, Dunlap, & Koegel, 1988). The use of one teacher prevents any conclusions being made about the generality of the treatment. In light of this study’s attempt to document the
acceptability and feasibility of the PAL Game, a major limitation of this study is that only one teacher implemented the procedure and rated its acceptability.

It is possible that certain characteristics of this particular teacher are responsible for the marked improvements in student behavior. This teacher participated in a graduate class on noncoercive classroom management strategies and still wanted to learn more. This willingness to improve teaching practices and try something new may have played a role in the effectiveness of the procedure. Differential responding of volunteer subjects is well documented (Rosnow and Rosenthal, 1976). An additional related issue is that of the support provided to the teacher by the consultant. Martens, Hiralall, and Bradley (1997) studied the effects of goal setting and feedback applied to teacher behavior as a means of producing desired changes in students’ behavior during consultation. Using a multiple baseline across subjects design, the authors demonstrated the effectiveness of the teacher setting a goal for providing praise to a target student and receiving feedback from the consultant on whether she met the goal, on improved student behavior. Although this research did not involve the teacher setting specific goals for praising students or receiving feedback on her performance, the implications are clear. The act of having a consultant work with a teacher and providing feedback (in the form of sharing data and discussing problems with the teacher after class) may be sufficient in itself to produce behavior change in students.

A study examining the treatment integrity with which general education teachers implemented a reinforcement-based intervention to improve the academic performance of elementary school students (Noell, Witt, Gilbertson, Ranier, & Freeland, 1997) is germane to this issue. The authors found that some form of continued direct support from the consultant might be necessary to maintain intervention use after initial training of the teacher. Therefore, future research should examine the effectiveness of classwide self-management training when implemented by different teachers using a manual rather than
having consultant support. For any conclusions to be drawn about this particular intervention’s feasibility and practicality as a teacher-trained and implemented program, these questions need to be addressed empirically.

The only data collected on teacher behavior during this study related to those teacher behaviors included on the procedural checklist. Since no data were taken on contingent teacher praise or contacts with students, it is difficult to know whether the teacher’s behavior also changed during the intervention, and thus that an increased praise rate or an increased number of contacts, for example, became an inextricable part of the intervention. The positive effects of contingent teacher praise on student behavior are well documented (White, 1975; Wyatt & Hawkins, 1987), and therefore it would be valuable to investigate this in relation to the PAL Game. Given the number of observers already necessary to collect data and discussed in greater detail below, additional measures of teacher behavior were just not feasible. Future research should examine any collateral effects on teacher behavior and their relationship to student behavior.

Another limitation of this study relates to the number of observers present in the classroom to collect data. In order to collect sufficient quantities of data on target individuals, the group as a whole, and collect agreement, there were three to four observers present in the classroom during each observation session. Precautions were taken to make the observers as unobtrusive as possible, including an acclimation period prior to the beginning of the study where observers were present for the duration of the class, wore clothes that blended with those of the students, and students were told that the observers were another group of prospective teachers in the site-based teacher education program. In the previous trimester, three to four college students had been present in this teacher’s classroom as prospective teachers. Nevertheless, the possible reactive effects of this many observers in the classroom cannot be ruled out. The only mitigating factor is the length of the study, which continued for 5 months. It seems unlikely that target students and the
class as a whole maintained their improved behavior across treatment conditions simply because of the presence of the observers.

An important consideration in this research relates to the limitations of the simultaneous group on-task measure. It is important to acknowledge that as a data collection procedure, it is not a closed system. More specifically, although it takes only one person to turn off the stopwatch, it takes the entire class of approximately 30 students to start the clock running. This means that some decisions are weighted disproportionately to the single subject, whereas others are weighted disproportionately to the class. Because we do not now know whether it is one students’ behavior contributing to the measure or many students’ behavior, we do not know whether it is a representative measure. Nevertheless, the measure has been used in previous research (Greenwood et al., 1979) as a way of providing an impact of the classwide effects of an intervention. Given that the nature of the measure makes it an extremely conservative estimate of on-task behavior, it was considered a reasonable choice of measure despite its noted limitation.

This study addressed the self-management of appropriate classroom behavior by teaching students to monitor and assess their attention to task rather than their performance. In light of research suggesting that it makes more sense to address academic performance rather than academically relevant classroom behaviors (Hoge & Andrews, 1987), this may be seen as a limitation of the study. The research did not directly investigate the effects of the procedure on academic achievement. However, informal data collected on grades and reflected in the academic grades reported did not show any academic gains for target students.

Perhaps the lack of improvements in academic performance, despite the marked increases in attending or on-task behavior, should be considered an important non-finding. This finding is consistent with the research on opportunities to respond, which indicates that being on-task on its own will not necessarily improve academic performance (REF).
The implications of this non-finding for classroom practice are important; perhaps teachers should focus their attention on effective teaching practices rather than classroom management concerns. It is conceivable that the use of effective teaching practices would obviate some or all of the need for behavior management programs.

Interestingly, the teacher reported that productivity in each class increased such that she got through the required curriculum in less time than usual. The teacher has been teaching this curriculum and grade for 7 years and typically struggled to complete state course requirements. She noted that for the first time she was able to include some other enrichment activities, including a radio broadcast, advertisements, creative writing activities, and review activities in a game format such as Jeopardy. Future research should attempt to study improvements in productivity and accuracy more formally. For example, it would be informative to investigate academic engaged time rather than on-task. This would allow researchers to look at the relationship between engaged time and assignment completion and accuracy rates and would be one step toward measuring the cost-effectiveness of the procedure. Research is needed not only to address how to document academic gains but also how to modify this procedure to include performance behaviors. For example, students could be taught to prompt themselves and/or their partner to check their work for accuracy, neatness, and completeness (Glomb & West, 1990). It would be interesting to see if teaching students to assess performance rather than behavior would produce as dramatic a gain in performance as was produced in this study with behavior.

More detailed peer comparison data might also be valuable in future research. As noted earlier, although normative data on model students were collected, data on typical students were not. It might be more appropriate to compare high-risk students to typical students rather than model students. In addition, data were not collected on model students who had not been exposed to the PAL Game. It is conceivable that the PAL Game produced improvements in these model students’ appropriate classroom behavior as well as
in target students. In this case, target students may well have reached baseline levels of
model students’ appropriate behavior. Unfortunately, social comparison data were not
collected during baseline to assess this.

Related to the issue of social comparison data is the notion of ideal levels of gaining
teacher attention appropriately and what level of inappropriately gaining teacher attention is
tolerable. Although high rates of participation are desirable for students to learn (Hall et
al., 1982), there is not a direct relationship between student participation and gaining
teacher attention, especially for some high-risk students in regular settings. In a study that
trained students to recruit teacher attention, Alber and Heward (1997) noted that too high a
rate of student recruiting was as problematic as too low a rate. They trained students to
recruit 2-3 times per period. Gaining teacher attention appropriately may be a similar skill,
although it is important to discriminate between a hand raise to respond to a question (and
therefore participate in class), and a hand raise to get the teacher’s attention to ask
something that the teacher has already announced. Some students who ask countless
questions may be considered “pests” (Stokes, Fowler, & Baer, 1978), regardless of
whether they gain attention appropriately. For others, it is the level of gaining teacher
attention inappropriately that irritates teachers. With this in mind, future research should
ensure that measures of participation and teacher attention are in some way differentiated.
It might also be important to investigate the level of call outs or number of times a student
gains the teacher’s attention inappropriately that regular education teachers will tolerate.
With this information, students could be taught to keep responses within a tolerance band.

Another limitation of this study was the limited duration of the maintenance phases.
Although it is encouraging that group on-task and target students’ appropriate behavior
maintained across the systematic withdrawal of the PAL Game, the maintenance phase
lasted only 7 days for periods 2 and 4, and 5 days for period 7 because of the end of the
school year. Future research will be enhanced by self-management studies with
maintenance phases that last several months or more and by probes for maintenance and
generality across classrooms, teachers, and instructional activities.

In an effort to explain the variability seen in the data of some of high-risk students, it might be useful for future research to systematically examine the role of task demand on the on-task behavior and appropriate use of social skills of high-risk students, as well as the group as a whole. It was interesting to note in this study the difficulty some students had with a creative writing assignment that was not as structured as the assignments the students typically completed in this classroom. Unfortunately, since data were not collected on task demand nor was task demand systematically varied in any way, no conclusions can be drawn on this issue.

Conclusions

In summary, this study demonstrated a functional relationship between the PAL Game and improved on-task behavior of the group and target high-risk students. Substantial improvements were seen in appropriate classroom behavior of the class as a whole. Although the class as a group were on-task less than 1 minute per period before the PAL Game was introduced, this increased to around 35 to 38 minutes of the 40-minute observation period by the end of the study. If one accepts the notion that attention to task is a prerequisite for learning to occur, it is practically and educationally significant that a procedure requiring minimal teacher time and effort can produce such substantial gains in all students. Further, target high-risk students improved in their appropriate use of social skills and academic related skills as measured by teacher ratings on the SSBS and by direct observation by independent observers. The findings overall suggest the practical significance of the effects of the PAL Game. Not only was the teacher able to complete the state required curriculum, but she was also able to include some enrichment activities and free time for the students. The data collected on the acceptability and feasibility of the procedure indicate that this is an effective classwide program requiring minimal teacher time
and effort. Replications of this study with other teachers and with other populations would provide valuable additional information not only on its effectiveness but also its practicality, feasibility, and general acceptability to teachers.
REFERENCES


Smith, D. J. (1988). The generalization of treatment gains of mildly handicapped adolescents from special education to regular education classrooms using peer-


APPENDIXES
Appendix A: Letter of Consent
Dear Parents,

In my twenty years of teaching, I have seen a change in students' social skills at school as well as outside the academic setting. Many students are not aware of how their behaviors may be affecting themselves and the others around them. Many times in class I find myself disciplining more than teaching. It is because of this concern that I have become involved in a special program to help all students manage their own behavior.

I have been working with, and learning from this Utah State University program to help all of my students become more successful at school and in specific life skills. I feel that this program can be very successful for all involved. I would recommend that you allow your child to participate in this research study. This will help me to see if it is something that I should continue to teach in my classroom.

Please call me (625-8875) if you have any questions. Thank you very much for your support and willingness to help us help your child.

Sincerely,

Julieann Benyo
INFORMED CONSENT: TESTING AND DATA COLLECTION

Effects of the PAL Game/Curriculum on Increasing On-Task Behavior of At-Risk Students and Other Students in a General Education English Class

I, ____________________, am granting voluntary permission for my child, ____________________, to participate as a research subject in a study to teach students social skills and manage their own behavior, in the PAL Game program. The general focus of the program is to assist students with improving self-management, academic, and social skills so they can be successful in school and other settings. All children in Ms. Benyo's 7th grade classes are participating but data will be collected on a few students to evaluate the impact of the program on improving student behavior and learning. I understand that my child's participation as a student to be evaluated is voluntary and that he or she is free to withdraw from the evaluation at any time without consequence; he/she will be able to continue in the program with the other students. My signature at the end of this consent form indicates that the principal investigator, Dr. K. Richard Young, or the student researcher, Kate Mitchem, has answered all my questions and I voluntarily consent for my child to participate in this program.

The purpose of the PAL Game is to help all students learn to stay on task, focus on assignments, and work cooperatively. The classroom teacher will teach all students in the class how to manage their own behavior and to be more socially responsible. This will be accomplished using a cooperative learning procedure in a game format as part of the teacher's regular class instruction. All students will participate in the game and no child will be singled out. Target students will not be identifiable to anyone other than the Student Researcher and classroom teacher. There are no adverse side effects or risks involved in the study. Benefits of the study may include improved self-management and social skills and improved academic skills for your child.

The teacher will implement the PAL Game within normal class instruction. I understand that I am giving permission for observational data, attendance data, and academic grades to be collected on my child and for the teacher to fill out a School Social Behavior Scale (a teacher rating of my child's social and problem behaviors exhibited in school). I also understand that, in addition, students and teachers may participate in structured interviews and role plays conducted by the student investigator, or trained university student observers, during which additional information will be collected on my child's academic or social functioning.

All of the information collected will be treated as confidential, kept in locked files. My child's identity and will not be associated with any published results. My child's code number and identity will be kept in a locked file of the Principal Investigator. I understand that I will be told of any significant new findings developed during the course of this study.
INFORMED CONSENT: TESTING AND DATA COLLECTION
Effects of the PAL Game/Curriculum on Increasing On-Task Behavior of At-Risk Students and Other Students in a General Education English Class

Finally, I understand that I have the right to refuse or withdraw permission at any time for my child to be tested and to have observations conducted of him or her without any adverse effects on my child of any kind and without affecting future services that my child might receive.

I have read and understand this Consent Form and I give consent for my child to participate in the study.

Name of Parent/Legal Guardian

Signature of Parent/Guardian

Date

Signature of Child

Date

Signature of Primary Investigator

Date

If you have any additional questions about this study or your rights, or if any problems arise, please contact:

K. Richard Young, Ph.D., Primary Investigator, Professor, Utah State University, TEL: (453) 797-3244

Kate Mitchell, Student Researcher, Doctoral Student, Utah State University, TEL: (801) 625-8875.
Appendix B: PAL Game Lesson Plans and Teaching Materials
Lesson 1 – ABCs of Behavior and Self-Management

1. Definition of Self-Management
   --Rationale
   --Benefits to students

2. ABCs of Self-Management
   --Definition
   --Examples

3. Discrimination Training
   --List 3 antecedents
   --Have students give response
     inappropriate and consequence
     appropriate and consequence
   --Have students give example of antecedent
   --Have students role play behavior and consequence
   --End with appropriate response and consequence

4. Self-Talk
   --e.g., tell students to count to ten
   --Role-play a couple of e.g.s
   --End with appropriate responses

5. Evaluation Activity
   --Do together

6. Assignment – Model one example
   --Do over the next day
   --10 points extra credit

Prompts

Poster

ABC Poster

Overhead

A/B/C Chart on board

Overhead

Worksheet
## Classwide Peer Assisted Self-Management Program

### Lesson 2 – Behavioral Self-Management

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>1.</strong></td>
<td>Review ABCs/Assignment</td>
<td>Worksheet/board</td>
</tr>
<tr>
<td></td>
<td>--Get e.g.s from students’ assignments</td>
<td></td>
</tr>
<tr>
<td><strong>2.</strong></td>
<td>Introduction and Rationale</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--1st Trimester I kept you up on missing assignments....</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Learning a set of skills to help you manage your own behavior instead of having me manage...</td>
<td></td>
</tr>
<tr>
<td><strong>3.</strong></td>
<td>Review Classroom Rules</td>
<td>Rules Poster</td>
</tr>
<tr>
<td></td>
<td>--Elicit non-examples from students</td>
<td>Typed sheet</td>
</tr>
<tr>
<td></td>
<td>--Elicit examples (meeting expectations) from students</td>
<td></td>
</tr>
<tr>
<td><strong>4.</strong></td>
<td>Rating System</td>
<td>HSNU Poster</td>
</tr>
<tr>
<td></td>
<td>--Define H,S,N,U ratings</td>
<td>Prompts overhead</td>
</tr>
<tr>
<td></td>
<td>--Give e.g.s of how behavior corresponds to ratings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Work in pairs to help one another</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Learn to evaluate their own behavior and their partners against ratings/class rules</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Teach kids to prompt each other to self-manage</td>
<td></td>
</tr>
<tr>
<td><strong>5.</strong></td>
<td>Ratings can be exchanged for points for team</td>
<td>Points Overhead</td>
</tr>
<tr>
<td></td>
<td>--Teams change weekly</td>
<td>R+ Menu</td>
</tr>
<tr>
<td></td>
<td>--Points can be exchanged for ...</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--As number of rating periods decrease, points increase</td>
<td></td>
</tr>
<tr>
<td><strong>6.</strong></td>
<td>Assign partners</td>
<td>Point cards</td>
</tr>
<tr>
<td></td>
<td>--First person move to second person</td>
<td>Point card overhead</td>
</tr>
<tr>
<td></td>
<td>--Go over point card</td>
<td></td>
</tr>
<tr>
<td><strong>7.</strong></td>
<td>Describe matching procedure and why</td>
<td>Point card overhead</td>
</tr>
<tr>
<td></td>
<td>--To become aware of perceptions of others</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Bring our perceptions in line with others</td>
<td></td>
</tr>
<tr>
<td><strong>8.</strong></td>
<td>Model perfect match and bonus points</td>
<td>Point card overhead</td>
</tr>
<tr>
<td></td>
<td>--Have students role play</td>
<td></td>
</tr>
<tr>
<td><strong>9.</strong></td>
<td>Model next door match</td>
<td>Point card overhead</td>
</tr>
<tr>
<td><strong>10.</strong></td>
<td>Model non-match</td>
<td></td>
</tr>
</tbody>
</table>
11. Model mystery match
   --To encourage you to rate honestly...
   --10 bonus points for accurate rating and matching with me

12. Assignment
   --Have students rate themselves for one period while
      working ABC worksheet

13. Practice reporting points
    --At end of class add points; as a partnership
       report points to recorder.
    --Applaud winners
    --Praise effort
The ABCs of Self-Management

A - Antecedent, what happens to trigger your behavior

B - Behavior, what you do and/or say

C - Consequence, what happens as a result of your behavior
### EXAMPLES OF THE ABCs of BEHAVIOR

<table>
<thead>
<tr>
<th>Triggers</th>
<th>Your Behavior</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Behavioral Example</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher asks the class to work individually and quietly.</td>
<td>You talk with a friend sitting next to you.</td>
<td>The teacher gets angry and tells you to stop talking.</td>
</tr>
<tr>
<td></td>
<td>You continue to talk.</td>
<td>The teacher sends you to the assistant principal.</td>
</tr>
<tr>
<td><strong>II. Academic Example</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher assigns 40 problems due tomorrow and allows you 30 minutes of class time to complete them.</td>
<td>You work hard and quietly in class. You ask the teacher to help you on one problem. You complete the problem in class.</td>
<td>You completed your assignment on time and will receive points toward a good grade. You also used class time wisely so you have less homework.</td>
</tr>
</tbody>
</table>
# Examples of Antecedents, Behaviors, Consequences for Discrimination Training

("You" and "Your" refer to the student)

## Antecedents (Triggers)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Your friend keeps throwing paper wads at you during seatwork.</td>
</tr>
<tr>
<td>2.</td>
<td>You’re supposed to be at work by 3:30, but your friends always want you to hang out after school.</td>
</tr>
<tr>
<td>3.</td>
<td>Your teacher gives you a book report assignment that’s due in one week.</td>
</tr>
<tr>
<td>4.</td>
<td>Your dad tells you that you have to baby sit Friday night.</td>
</tr>
<tr>
<td>5.</td>
<td>The girl/boy that you want to go to the dance with asks you for help with homework after school.</td>
</tr>
<tr>
<td>6.</td>
<td>You go out to the parking lot after school and find that you have a flat tire.</td>
</tr>
<tr>
<td>7.</td>
<td>Your teacher gives you an assignment that you don’t understand.</td>
</tr>
<tr>
<td>8.</td>
<td>One of your teachers announces that there will be a chapter test on Friday.</td>
</tr>
<tr>
<td>9.</td>
<td>Your mom asks you to come home right after school to help her out.</td>
</tr>
<tr>
<td>10.</td>
<td>You’re walking down the hall and someone you don’t get along with comes up behind you and shoves you.</td>
</tr>
</tbody>
</table>

## Behaviors

<p>| | |</p>
<table>
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<tr>
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<tbody>
<tr>
<td>1.</td>
<td>You punch your friend and yell swear words at him.</td>
</tr>
<tr>
<td>2.</td>
<td>You get to work an hour late for 5 days in a row.</td>
</tr>
<tr>
<td>3.</td>
<td>You schedule your study time so that you work on your report a little each night and have enough time to rewrite it neatly before it is due.</td>
</tr>
<tr>
<td>4.</td>
<td>You really want to go out, but you stay home as you’ve been asked to do.</td>
</tr>
<tr>
<td>5.</td>
<td>You go shopping with your friend because you’d rather do that than school work.</td>
</tr>
<tr>
<td>6.</td>
<td>You kick in your front fender and punch the side window, cracking it.</td>
</tr>
<tr>
<td>7.</td>
<td>You go to the teacher during seatwork time and ask for clarification of the assignment.</td>
</tr>
<tr>
<td>8.</td>
<td>You’d rather be out partying, but you decide to study each night between now and Friday.</td>
</tr>
<tr>
<td>9.</td>
<td>Even though your friends are going out for sodas, you go right home and help out.</td>
</tr>
<tr>
<td>10.</td>
<td>You’re really angry, but you just walk away from him/her.</td>
</tr>
</tbody>
</table>

## Consequences

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1.</td>
<td>Your teacher sends you to the principal’s office.</td>
</tr>
<tr>
<td>2.</td>
<td>Your boss fires you and you lose the income you were using to save for a car.</td>
</tr>
<tr>
<td>3.</td>
<td>You get a B+ on your paper.</td>
</tr>
<tr>
<td>4.</td>
<td>Your dad lets you borrow the car Saturday night and gives you $5.00</td>
</tr>
<tr>
<td>5.</td>
<td>When you ask your friend to go to the dance with you, he/she says, “Forget it!”</td>
</tr>
<tr>
<td>6.</td>
<td>Instead of just having to change a flat tire, you have to come up with $100.00 for body work.</td>
</tr>
<tr>
<td>7.</td>
<td>You are able to complete the assignment accurately and get a good grade.</td>
</tr>
<tr>
<td>8.</td>
<td>Even though you missed a couple of nights out, you ace the test.</td>
</tr>
<tr>
<td>9.</td>
<td>You are able to complete the assignment accurately and get a good grade.</td>
</tr>
<tr>
<td>10.</td>
<td>The hall monitor sends the “other guy” to detention, but you’re doing fine.</td>
</tr>
</tbody>
</table>
STUDENT EVALUATION ACTIVITY

Part A  List the following statements in one of these three categories:
        “Triggers,” “Student Behaviors,” or “Results”
Part B  Match the “Triggers” with the right behaviors and results.

1. Do the 30 math problems on page 151.
2. Fail the social studies quiz.
3. Parents ground you for two weeks.
4. You go to a party instead of studying social studies.
5. You complete your math homework instead of watching TV
6. You get home from the party at 2:30 a.m.
7. Your math assignment was completed on time.
8. Your parents tell you to be home from the party by 11:30 p.m.
9. Your social studies teacher announces that there will be a quiz tomorrow on Chapter 5.

<table>
<thead>
<tr>
<th>Triggers</th>
<th>Student Behaviors</th>
<th>Results</th>
</tr>
</thead>
<tbody>
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</table>
STUDENT ASSIGNMENT SHEET

For the next class period, write down the “Triggers”, “Your Behavior”, and the “Results” of your behavior for three things that happen to you.

<table>
<thead>
<tr>
<th>Triggers</th>
<th>Behaviors</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.</td>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
<td>3.</td>
<td>3.</td>
</tr>
</tbody>
</table>
Classroom Rules Examples and Non-Examples

Be in your seat when the bell rings

(e.g., in not on; your seat, not someone else's....)

Follow your teacher's instructions

A. Teacher tells you to open your book to p. 115.

B. You do this promptly // You start to get your book out but before you do, you fiddle with the strap, then get your makeup out and fix that, and then finally open your book to the right page.

C. T is happy and gets started straight away. You are prepared and can keep up with class. You all get 10 minutes free time at the end of class because the class gets work done. // T is not happy and starts class anyway. You are behind and ask T to repeat the answer. T moves on with the assignment and you don't have the answers to the first two questions and get a "C" on the assignment.

A. T stands behind you because you are doodling

B. You stop doodling and start writing the answers to your assignments. // You continue to doodle and don't get any of your assignments done.

C. You get your work done before the end of class and have no homework and get a good grade. // T tells you that you have restitution so you can complete the assignment you have missed.

Raise your hand and ask permission to speak.

A. Rule states that students should raise hand and wait to be acknowledged.

B. You don't know what to do so raise your hand and wait for teacher to call on you // You yell out, "Ms. Benyo, what do I do?"

C. Ms. Benyo calls on you and explains what you need to do. You do the assignment and get a good grade. // Ms. Benyo ignores you and helps all the other students who raise their hands. You still don't know how to do the assignment and have to stay after class to get help.
A. You have finished work and want to know if you can work on the computer.

B. You wave your hand in the air to get T’s attention and say, “Ms. Benyo, Ms. Benyo…” A classmate raises his hand and waits for Ms. Benyo to call on him.

C. Ms. Benyo ignores your hand waving and whining Ms. Benyo calls on your classmate and tells him he can play on the computer since he got her attention appropriately.

**Talk to your friends only during free time**

B. You chat to your friends all through class

C. T has to stop teaching to remind you to be quiet. Finally, she tells you to wait outside while she fills out a blue card. You go to the Peace Place, have to do the assignment at home, and get a junk grade on the assignment because you don’t know how to do it.

**Keep your hands and feet to yourself**

B. You elbow your buddy every time Ms. Benyo is looking the other way.

C. He ignores you, gets his work done, and won’t explain to you how to do the assignment.

B. You keep flicking pieces of paper at your friend, thinking that Ms. Benyo can’t see you doing it.

C. Ms. B keeps you at lunch (after school) to pick up all the bits of paper.

**Stay on-task and complete your assignment**

B. You stay on-task and get your work done you doodle, chat with your friends, stare at the wall, put on makeup, do your math ...

C. You get a good grade and no homework you get your book, makeup, math homework … confiscated; you don’t get your work done, you get a bad grade; a phone call home ....
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<tr>
<th>Matching Level 1</th>
<th>Matching Level 2</th>
<th>Matching Level 3</th>
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<tbody>
<tr>
<td>4 matches/period</td>
<td>2 matches/period</td>
<td>1 match/period</td>
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<tr>
<td>H = 4 points</td>
<td>H = 8 points</td>
<td>H = 18 points</td>
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<tr>
<td>S = 3 points</td>
<td>S = 6 points</td>
<td>S = 16 points</td>
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<td>N = 2 points</td>
<td>N = 2 points</td>
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<td>U = 1 point</td>
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**EACH PERFECT MATCH RECEIVES**

<table>
<thead>
<tr>
<th>1 Bonus point</th>
<th>2 bonus points</th>
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REINFORCEMENT MENU

TEAM POINTS

If each team gets a minimum of 80% of points possible and improves on the previous week's score, the class may choose from the following:

1. Watch a movie
2. Class party
3. Donuts for the whole class
4. Read outside

PARTNER POINTS

Students may use their partnership points to buy the following:

1. 10 minutes free time 80 points
2. Free assignment 200 points
3. 5 extra credit points 80 points
4. 10 minutes computer time 150 points
5. Candy 80 points
6. Positive phone call/letter 80 points
**PAL GAME POINT CARD**

- **H** = 4 points
- **S** = 3 points
- **N** = 2 points
- **U** = 1 point
- Each match = 1 Bonus Point

**DID I:**
- follow instructions
- raise my hand
- keep my hands/feet to myself
- stay on-task
- get my work done

**Student Rating**

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<td>Yes</td>
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<td>Somewhat</td>
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**Partner Rating**

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—— + —— + —— + —— = _____
Name ___________________________ Date __________________

Class Period ___________________________

H = 8 points
S = 6 points
N = 2 points
U = 1 point
Each Match = 2 Bonus Points

PAL GAME POINT CARD

Student Rating

Partner Rating

DID I:
follow instructions
raise my hand
keep my hands/feet to myself
stay on-task
get my work done

---

Name ___________________________ Date __________________

Class Period ___________________________

H = 18 points
S = 16 points
N = 2 points
U = 1 point
Each Match = 3 Bonus Points

PAL GAME POINT CARD

Student Rating

Partner Rating

DID I:
follow instructions
raise my hand
keep my hands/feet to myself
stay on-task
get my work done

---
ABCs OF SELF MANAGEMENT

A stands for _________________ or What happens!

B stands for _________________ or What I do!

C stands for _________________ or What results!

If I self manage my own behavior, I have more ______________________

1. __________________________

2. __________________________

3. __________________________

4. __________________________

If I do not self manage my own behavior, the following happens:

1. __________________________

2. __________________________

3. __________________________

4. __________________________

What is self management?

____________________________

____________________________

____________________________
Appendix C: Interval Recording Form
INTERVAL RECORDING FORM

Student ___________________________ Observer ___________________________

Location _______ Time begin _______ Time end _______ Date _______

<table>
<thead>
<tr>
<th>Interval</th>
<th>1</th>
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Mark off-task with an '-' and on-task with a '+' through the number of the interval.
Mark instruction given with a '+' and instruction followed with a '. ' . Mark inappropriate TA with a '-' and appropriate with '+' .
Appendix D: School Social Behavior Scale Information
The School Social Behavior Scales (SSBS; Merrell, 1993a) and the Preschool and Kindergarten Behavior Scales (PKBS; Merrell, 1994) are recently developed child behavior rating scales that have become widely used by clinicians and researchers in a variety of educational and clinical settings in North America. The SSBS contains separate social competence and antisocial behavior rating scales, and is designed to be completed by teachers in who work with students in various K-12 educational settings. The PKBS contains separate social skills and problem behavior rating scales, and is designed to be completed by parents, teachers, and other informants in a broad variety of settings with children ages 3-6 (e.g., Head Start, kindergarten, preschools, child guidance centers, etc.). These two instruments are easy to use and practical, yet they have a very sophisticated research and scientific base. Since the initial publication of the SSBS and PKBS in 1993 and 1994, respectively, several new developments, research reports, and planned projects have occurred that are not described in the original test manuals. The purpose of this update is to describe some of these new happenings.

New Publisher

In 1996, Clinical Psychology Publishing Company (CPPC), the initial publisher and distributor of the SSBS and PKBS, was "bought out" by another publisher and has now ceased to exist. The publication rights to all CPPC assessment instruments were purchased by Pro-Ed of Austin, Texas. Thus, Pro-Ed now is the sole distributor of the SSBS and PKBS. To order a Pro-Ed catalogue or order the SSBS/PKBS test manuals and protocols, contact:

Pro-Ed
8700 Shoal Creek Blvd.
Austin, TX 78757-6869
512-451-3246 (phone)
512-451-8542 (fax)
http://www.proedinc.com (website)

We regret any confusion or difficulty for SSBS/PKBS test users caused by the recent change in publishers, but are proud to now have the tests associated with Pro-Ed. A copy of the test descriptions, ordering information, and an order form from the Fall, 1996 Pro-Ed Psychological Products Catalogue is attached to this sheet for your convenience.

New Research

The original SSBS and PKBS test manuals contained a few references to some preliminary research that had been published on the two instruments. Since then, a large number of publications and professional presentations involving these instruments have occurred. Although many of the sources for SSBS and PKBS research involved masters theses, doctoral dissertations, and presentations at regional and national professional meetings, these sources will not be listed here because of the general difficulty in accessing this kind of information in the public domain. What follows is a listing of publications in refereed professional journals that can be easily accessed. These listings are current as of January, 1997. Several other publications are in process, and should be in the public domain (e.g., abstracted in ERIC and PSYCHLIT) by 1998.

School Social Behavior Scales


New Test Manuals Planned

The author of the SSBS and PKBS is planning revisions of the two test manuals that will include updated research references, additional reliability and validity evidence, and additional examples of educational and clinical case studies. The revised test manuals should be completed in 1998.

Home/Community Version of SSBS Planned

After the initial publication of the SSBS in 1993, the author received numerous inquiries from researchers and clinicians who were interested in a parallel instrument that could be used to assess social competence and antisocial behavior outside of educational settings (e.g., home and community settings—the SSBS was designed to be used specifically in K-12 educational settings). Because of this widespread interest, development of a new instrument, the Home and Community Social Behavior Scales (HCBS) is now underway. The HCBS is essentially similar to the SSBS, except that some of the items are reworded to reflect home and community rather than school behaviors and settings, and the normative respondent group will be parents rather than teachers. Preliminary research has been completed (i.e., validation with a sample of “at-risk” antisocial students), and plans are underway to complete a national standardization of the instrument and extensive validation research within the next two years. If you have access to a sample of children in grades K-12 and are interested in participating in the HCBS development research, please contact the author.

SSBS/PKBS Correspondence

To correspond with the author of the SSBS and PKBS regarding research, clinical uses, general questions, additional plans, etc., contact:

Kenneth W Merrell, Ph D
Department of Psychology
Utah State University
Logan, UT 84322-2310
801-797-2034 (phone)
801-797-1448 (fax)
kennethm@fs1.ed.usu.edu (E-MAIL)
Preschool and Kindergarten Behavior Scales
Kenneth W. Maenell

The Preschool and Kindergarten Behavior Scales (PKBS) is a behavior rating scale designed for use individually with children ages 3 through 6 years. With 76 items on two separate scales, it provides an integrated and functional appraisal of the social skills and problem behaviors of young children. The scales can be completed by a variety of behavioral informants, such as parents, teachers, and other caregivers. Testing time is about 12 minutes.

The Social Skills scale includes 34 items that measure positive social behaviors on three subscales: Social Cooperation, Social Interdependence, and Social Independence. The Problem Behavior scale includes 42 items that measure both externalizing and internalizing social-emotional problems on five subscales: Self-Centered/Explosive, Attention Problems/Overactive, Antisocial/Agressive, Social Withdrawal, and Anxiety/Somatic Problems.

The PKBS is designed to be used as a screening tool for early detection of developing social-emotional problems, as part of a multimethod assessment battery for classification and eligibility purposes, or to develop intervention programs and gauge subsequent behavioral change, and as an early childhood research tool. Scale total scores are converted to standard scores and percentile ranks. Subscale scores are converted to Functional Levels and Broad-band Externalizing and Internalizing Problem scores on the Problem Behavior scale are converted to percentile ranks.

The PKBS was standardized on a sample of 2,855 children from 16 states, representing each U.S. geographic region. Scoring tables are based on an age breakdown of 3 to 4- and 5- to 6-year-old children. Ethnicity, socioeconomic status, and special education classification of the standardization sample are generally representative of the U.S. population. Internal consistency reliability ranges from .36 to .97 for the two scale totals and from .81 to .95 for the subscales. Moderate levels of test–retest and interrater reliability are reported. Content construct, and criterion-related validities have been established through a number of procedures and findings, such as systematic item development methods, strong correlation with four other behavior rating scales, and significant discriminating power between children with and without disabilities. Extensive additional reliability and validity data are reported in the test manual.

Complete PKBS Kit includes Test Manual and 20 Test Forms (1994)

-8355 PKBS Complete Kit $39.00
-8356 PKBS Test Manual 24.00
-8357 PKBS Test Forms 20 $17.00

School Social Behavior Scales
Kenneth W. Maenell

The School Social Behavior Scales (SSBS) is a behavior rating scale designed specifically for use by professionals in school settings. It provides an integrated rating of both social skills and antisocial problem behaviors through ratings of students. The Social Competence scale includes 32 items that measure adaptive, prosocial skills and includes three subscales: Interpersonal Skills, Self Management Skills, and Academic Skills. The Antisocial Behavior scale includes 33 items that measure socially linked problem behaviors and also includes three subscales: Hostile-Irritable, Antisocial-Agressive, and Disruptive-Demanding. The SSBS is designed to be used as a screening tool for early detection of developing social behavioral problems and as part of a multimethod assessment battery for conducting comprehensive assessments, determining program eligibility, and developing intervention plans. The scales are hand-scored with an easy to use key provided adjacent to the ratings. Scale total scores are converted to standard scores and percentile ranks, Subscale scores are converted to Social Functioning Levels. The SSBS was standardized on more than 1,350 students in grades K through 12, who represented all U.S. geographic regions. The SSBS is individually administered and takes 5 to 10 minutes to complete.

Internal consistency reliability ranges from .94 to .98 for the two scale totals and six subscales. Median test–retest reliability at 3-week intervals is .77. Median interrater reliability is .72. Validity was established by significant correlations between the SSBS and four other behavior rating scales and a direct behavioral-observation procedure and by the discriminant ability of the scales to identify at-risk students and students with disabilities. Complete reliability and validity data are reported in the test manual.

Complete SSBS Kit includes Test Manual and 20 Test Forms (1994)

-8340 SSBS Complete Kit $39.00
-8341 SSBS Test Manual 25.00
-8342 SSBS Test Forms 20 $16.00
### Student Information

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<thead>
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<th>Student Name</th>
<th>Last</th>
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<td>First</td>
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<td>Middle</td>
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<table>
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<tr>
<th>Grade</th>
<th>Age</th>
<th>Sex</th>
<th>M</th>
<th>F</th>
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</thead>
</table>

School

If this student receives special education services, please list the special education service category or classification:

If this student participates in any other educational program(s), please list the program name (Talented and Gifted, Chapter 1, Remedial Education, etc.):

### Rater Information

<table>
<thead>
<tr>
<th>Rated By</th>
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<tbody>
<tr>
<td>Position</td>
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</table>

Date Completed

List the setting(s) in which you observe or interact with the student:

### Instructions

After you have completed the student and rater information sections, please rate the student on each of the items on pages 2 and 3 of this rating form. The rating points after each item appear in the following format:

<table>
<thead>
<tr>
<th>Never</th>
<th>Sometimes</th>
<th>Frequently</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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</table>

**Never**

If the student does not exhibit a specified behavior, or if you have not had an opportunity to observe it, circle 1, which indicates *Never*.

**Sometimes**

Circle the numbers 2, 3, or 4, (which indicate *Sometimes*) if the student exhibits these behaviors somewhere in between the two extreme rating points, based on your estimation of how frequently the specified behavior occurs.

**Frequently**

If the student often exhibits a specified behavior, circle 5, which indicates *Frequently*.

Please complete all items, and do not circle between numbers.
Appendix E: Social Validity Questionnaire–Student Form
Student Satisfaction Ratings of PAL Curriculum/Game

1. If you were a teacher would you let your students use the PAL Game?
   Yes    Maybe    No
2. Would the game be OK to use with students in other classes?
   Yes    Maybe    No
3. How unfair is the PAL Game?
   Very unfair    A little    Not at all
4. Do you think the PAL Game would be harmful to students?
   Yes    Maybe    No
5. How much did the PAL Game help you learn to behave responsibly at school?
   Very much    Somewhat    Not at all
6. How much do you like the use of teams?
   Very much    Somewhat    Not at all
7. How much do you like earning points during the PAL Game?
   Very much    Somewhat    Not at all
8. How much did the PAL game help you become more aware of your behavior?
   Very much    Somewhat    Not at all
9. How much did you like having your partner rate you?
   A lot    Some    Not at all
10. Did having your partner prompt you and match with you help you to manage your behavior better?
    A lot    Some    Not at all
11. Has the PAL Game helped make the classroom environment more pleasant?
    A lot    Some    Not at all
12. Do you think the PAL Game results in more teaching going on than disciplining?
    Yes    Some    No
13. Do you self-manage in your other classes?
    Yes    Some    No
14. Do you catch yourself being good?
    Yes    Some    Not at all
15. Overall, what do you think of the PAL Game?
    Like it a lot    OK    Don’t like it at all
Appendix F: Social Validity Questionnaire—Teacher Form
Teacher Satisfaction Ratings of PAL Curriculum/Game

Acceptability of Intervention Goals

1. How important is it for students to exhibit responsible social behaviors such as following instructions and accepting correction?
   - Not important
   - Somewhat important
   - Very important

2. How important is it for students to learn to work cooperatively?
   - Not important
   - Somewhat important
   - Very important

3. How important is it for children to work with peers of different ethnic, racial, cultural, and academic backgrounds?
   - Not important
   - Somewhat important
   - Very important

4. How important is it for students to monitor and correct each other’s work?
   - Not important
   - Somewhat important
   - Very important

Acceptability of Procedures

5. How much did you like the use of teams?
   - Not at all
   - OK
   - Liked it very much

6. How much did you like giving bonus points?
   - Not at all
   - OK
   - Liked it very much

7. How much did you like using timers?
   - Not at all
   - OK
   - Liked it very much

8. How much did you like the public display of your students’ scores?
   - Not at all
   - OK
   - Liked it very much

9. How much did you like the teacher lesson packets?
   - Not at all
   - OK
   - Liked it very much

10. How much did you like using points for following tutoring procedures?
    - Not at all
    - OK
    - Liked it very much

11. How much did you like using points for improved social interactions?
    - Not at all
    - OK
    - Liked it very much

12. How much did you like the mystery motivator component?
    - Not at all
    - OK
    - Liked it very much

13. How much did you like the PAL rating game?
    - Not at all
    - OK
    - Liked it very much

14. How much did you like giving recognition certificates?
    - Not at all
    - OK
    - Liked it very much

15. How much did you like leading the personal responsibility pledge?
    - Not at all
    - OK
    - Liked it very much
### Satisfaction with PAL Outcomes

16. How much did the PAL teacher packets help students learn the behaviors?  
   - Not at all  
   - Moderately helpful  
   - Very helpful

17. How satisfied were you with students’ social behavior?  
   - Not satisfied  
   - Somewhat satisfied  
   - Very satisfied

18. Did the PAL curriculum/game help students become better friends with one another?  
   - Not at all  
   - Somewhat  
   - Very much

19. Were students more friendly to one another?  
   - Not at all  
   - Somewhat  
   - Very much

20. Overall, what do you think of the PAL curriculum/game?  
   - Like it very much  
   - OK  
   - Dislike it

21. Would the tutoring and self-rating game be OK to use with students in other subjects?  
   - Definitely not  
   - Maybe  
   - Yes

22. Does the PAL curriculum seem like something that other teachers should do?  
   - Definitely not  
   - Maybe  
   - Yes

23. Will you use the PAL curriculum/game again?  
   - Definitely not  
   - Maybe  
   - Yes

24. Do you think that you were more positive toward your students?  
   - Not at all  
   - Somewhat  
   - Very much
Appendix G: Procedural Checklist
### Procedural Checklist for PAL Game/Curriculum

*Directions: Circle “Yes” or “No” to indicate the presence or absence of the following materials or behaviors:*

#### A. Materials

<table>
<thead>
<tr>
<th></th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Each student has a point card</td>
<td>Yes No</td>
</tr>
<tr>
<td>2. Classroom rules are posted</td>
<td>Yes No</td>
</tr>
<tr>
<td>3. Definitions of ratings are posted</td>
<td>Yes No</td>
</tr>
<tr>
<td>4. Team point charts are posted</td>
<td>Yes No</td>
</tr>
<tr>
<td>5. Teacher has mystery match envelope on desk</td>
<td>Yes No</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>/</td>
</tr>
</tbody>
</table>

#### B. Teacher Behaviors

<table>
<thead>
<tr>
<th></th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Monday, the teacher signals for one member of each partnership to draw a tag from the covered box.</td>
<td>Yes No</td>
</tr>
<tr>
<td>2. Teacher passes out point sheets to students and partners</td>
<td>Yes No</td>
</tr>
<tr>
<td>3. Teacher sets the timer to indicate the beginning of the rating period.</td>
<td>Yes No</td>
</tr>
<tr>
<td>4. Teacher proceeds with instruction</td>
<td>Yes No</td>
</tr>
<tr>
<td>5. Teacher tells students to mark card when timer rings</td>
<td>Yes No</td>
</tr>
<tr>
<td>6. During student marking of cards, teacher circulates and assigns bonus points for correct student behaviors (e.g., positive feedback, appropriate acceptance of rating)</td>
<td>Yes No</td>
</tr>
<tr>
<td>7. Teacher awards bonus points for perfect match, no extra points for next-door match, deducts 10 points from partnership from rating that is more discrepant</td>
<td>Yes No</td>
</tr>
<tr>
<td>8. As needed, teacher sets timer to indicate next rating period.</td>
<td>Yes No</td>
</tr>
<tr>
<td>9. At the end of the last rating period, the teacher signals students to rate and summarize points</td>
<td>Yes No</td>
</tr>
</tbody>
</table>
10. Teacher announces names of mystery partners from each team and rates each partnership. 
   Yes  No

11. Teacher circulates and awards bonus points for accurate tallying of points using a different colored pen. 
   Yes  No

12. Teacher gives calculator to daily point keeper. 
   Yes  No

13. Teacher asks partnerships in turn to announce partnership total for one team. 
   Yes  No

14. Teacher asks partnerships from other team to announce partnership total. 
   Yes  No

15. Teacher provides praise to partnerships whose ratings have improved or who have 35_+ points. 
   Yes  No

16. If both teams have improved scores from previous day, teacher announces both are winners. 
   Yes  No

17. Teacher leads applause for winning team. 
   Yes  No

18. Teacher praises losing team for effort. 
   Yes  No

Total  _____ / _____

C. Student Behaviors

1. Sit next to partner and have materials ready (e.g., point card, prompt card, pen/pencil) 
   Yes  No

2. Rate themselves when timer rings. 
   Yes  No

3. Rate the partner after rating themselves. 
   Yes  No

4. Use prompt cards as needed to prompt partner. 
   Yes  No

5. Provide positive feedback to partner when rating. 
   Yes  No

6. Assign points correctly for rating/match. 
   Yes  No

7. Total points correctly at end of class period. 
   Yes  No

8. Report partnership points to point recorder when asked by the teacher. 
   Yes  No

9. Sit quietly while other partnerships report points. 
   Yes  No

Total  _____ / _____
Appendix H: Classroom Rules
CLASSROOM RULES

BE IN YOUR SEAT WHEN THE BELL RINGS

FOLLOW YOUR TEACHER’S INSTRUCTIONS

RAISE YOUR HAND AND ASK PERMISSION TO SPEAK

TALK TO YOUR FRIENDS ONLY DURING FREE TIME

KEEP YOUR HANDS AND FEET TO YOURSELF

STAY ON-TASK

COMPLETE YOUR ASSIGNMENT
Appendix I: Social Skills (How to Follow Instructions; How to Gain Teacher’s Attention)
HOW TO FOLLOW INSTRUCTIONS

1. LOOK AT THE PERSON

2. SAY O.K.

3. DO THE TASK IMMEDIATELY

4. REPORT BACK (IF NECESSARY)
HOW TO GET THE TEACHER’S ATTENTION

1. LOOK AT THE PERSON

2. RAISE YOUR HAND

3. WAIT FOR ACKNOWLEDGEMENT

4. AFTER ACKNOWLEDGEMENT, ASK YOUR QUESTION IN A PLEASANT VOICE TONE
Appendix J: Training Checklist
Classwide Peer-Assisted Self-Management Program

Training Checklist

Check under “yes” or “no” to indicate whether the following items were included in the presentation.

**LESSON 1—ABCS OF BEHAVIOR AND SELF-MANAGEMENT**

<table>
<thead>
<tr>
<th></th>
<th>MATERIALS</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of Self-Management</td>
<td>Poster</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Rationale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Benefits to students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABCs of Self-Management</td>
<td>ABC Poster</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Definition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Examples</td>
<td>Overhead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discrimination Training</td>
<td>A/B/C Chart on board</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- List 3 antecedents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Have students give response</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inappropriate and consequence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate and consequence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Talk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- e.g., tell students to count to ten</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Role-play with a couple of e.g.s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- End with appropriate responses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation Activity</td>
<td>Overhead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Do together</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignment/Model an e.g.</td>
<td>Overhead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Do over the next day</td>
<td>Worksheet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- 10 points extra credit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Classwide Peer-Assisted Self-Management Program

Training Checklist

Place a check under “Yes” or “No” to indicate the presence or absence of a step.

**LESSON 2—BEHAVIORAL SELF-MANAGEMENT**

<table>
<thead>
<tr>
<th>MATERIALS</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Review ABCs / Assignment</strong></td>
<td>Worksheet / board</td>
<td></td>
</tr>
<tr>
<td>-- Get e.g.s from students’ assignments</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Introduction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Rationale for self-management</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Review Classroom Rules</strong></td>
<td>Rules Poster</td>
<td></td>
</tr>
<tr>
<td>-- Elicit non-examples</td>
<td>Typed sheet</td>
<td></td>
</tr>
<tr>
<td>-- Elicit examples (meeting expectations)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rating System</strong></td>
<td>HSNU Poster</td>
<td></td>
</tr>
<tr>
<td>-- Define ratings</td>
<td>Prompts overhead</td>
<td></td>
</tr>
<tr>
<td>-- Give e.g.s of behavior/ratings</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Teach to use prompts</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ratings can be exchanged for points</strong></td>
<td>Points Overhead</td>
<td></td>
</tr>
<tr>
<td>-- Teams change weekly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Points can be exchanged for …</td>
<td>R+ Menu</td>
<td></td>
</tr>
<tr>
<td>-- As number of rating periods decrease, points increase</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Assign Partners</strong></td>
<td>Point Cards</td>
<td></td>
</tr>
<tr>
<td>-- First person move to second</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--- Model marking point card</td>
<td>Overhead</td>
<td></td>
</tr>
<tr>
<td>Describe matching procedure</td>
<td>Point card overhead</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------</td>
<td></td>
</tr>
<tr>
<td>-- Rationale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model perfect match and bonus points</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Have students role play</td>
<td>Point card overhead</td>
<td></td>
</tr>
<tr>
<td>Model next door match</td>
<td>Point card overhead</td>
<td></td>
</tr>
<tr>
<td>Model non-match</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model mystery match</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Rationale – to rate honestly …</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- 10 bonus points for accurate rating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignment</td>
<td>Worksheet</td>
<td></td>
</tr>
<tr>
<td>-- Assign students ABC worksheet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Have students rate themselves for 1 period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Discuss ratings and points</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice Reporting Points</td>
<td>Team Charts</td>
<td></td>
</tr>
<tr>
<td>-- At end of class add points</td>
<td>Partner Charts</td>
<td></td>
</tr>
<tr>
<td>-- Report partnership points to recorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Applaud winners</td>
<td>“Good Sports”</td>
<td></td>
</tr>
<tr>
<td>-- Praise effort</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NAME: Katherine J. Mitchem

ADDRESS: 2520 Pierce Avenue, Ogden, UT 84401, Tel.: (801) 621-4872

E-MAIL: kmitchem@utah.uswest.net

EDUCATION:

<table>
<thead>
<tr>
<th>Level</th>
<th>Institution</th>
<th>Year Granted</th>
<th>Major Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.S. (Hons)</td>
<td>University of Manchester</td>
<td>1982</td>
<td>German &amp; European Studies</td>
</tr>
<tr>
<td>M.Ed.</td>
<td>Drury College, Missouri</td>
<td>1992</td>
<td>Secondary Education</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>Utah State University</td>
<td>1999</td>
<td>Special Education, Prevention, Emotional &amp; Behavioral Disorders</td>
</tr>
</tbody>
</table>

PROFESSIONAL EXPERIENCE:

1996-Present  **Project Coordinator**, S.A.F.E. Project. Responsible for site coordination of a large federally-funded grant serving at-risk students at two middle schools; supervising development and evaluation of Partners, Prevention Plus and PeaceBuilders; developing training materials, training faculty, staff, and parents; and collaborating with community agencies. Co-taught a number of graduate and undergraduate classes in special education, classroom management, research methodology.

1998-Present  **Adjunct Lecturer**, University of Phoenix. Responsible for teaching graduate classes in classroom management, educating the gifted, research methodology, characteristics of the diverse learner, strategies for teaching diverse learners.

1995-1996  **Graduate Research Assistant**, Department of Special Education, Utah State University. Responsible for supervising the implementation of Prevention Plus (a program for at-risk students) at a middle school and a high school.

1992-1995  **Head Teacher**, ASSETS K-12 School, Honolulu, Hawaii. Taught French, German, and English to gifted, dyslexic, and gifted-dyslexic students. Responsible for developing and implementing innovative curricula, providing group and individual counseling, and conducting diagnostic-prescriptive and standardized testing to complete IEPs. Monitored students and mentors in the community-based school mentoring program.
1991-1992  **Teacher Assistant**, Waynesville School District, Missouri. Provided individual and group instruction to students with emotional and behavioral disorders and learning disabilities at a residential treatment center. Conducted testing and wrote evaluations of students' achievement and ability. Developed a program and timeline to facilitate reintegration of students to public school.

1990-1991  **Substitute Teacher**, Dixon and Waynesville School Districts, Missouri. Maintained discipline, implemented lesson plans and provided instruction in various subjects to middle and high school students, including at-risk students and those with mild-moderate disabilities.

1982-1983  **English Teacher**, European Language School, Hanau, Germany. Taught and developed programs of instruction in English.

**PUBLICATIONS**


PRESENTATIONS


Mitchem, K.J. (1998 May). Collaboration and co-teaching: Making the most of your co-teacher. Workshop presented for Ogden City School District at Mount Ogden Middle School, Ogden, Utah.


GRANT ACTIVITIES

1998 Assisted in writing a grant proposal entitled Protecting Youth from High Risk Behavior through Family Enhancement and Preservation submitted to the Commission on Criminal and Juvenile Justice. $98,525 funded July 1, 1998.

1998 Assisted in writing field initiated research grant proposal for a prevention program designed for elementary schools (under review)

1993 Assisted in writing grant proposal for a multimedia foreign language center. ($12,500 funded first year)

AWARDS

1998 Outstanding Doctoral Student, Department of Special Education and Rehabilitation
1995 Research Vice President Fellowship, Utah State University

MEMBERSHIPS

American Association for Teachers of German
American Association for Teachers of French
Association for Behavior Analysis
Council for Exceptional Children

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