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The Effects of Self-Management in General Education Classrooms on the Organizational Skills of Adolescents With ADHD

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Self-management procedures have been used in school settings to successfully reduce problem behaviors, as well as to reinforce appropriate behavior. A multiple-baseline across participants design was applied in this study to evaluate the effects of using a self-management procedure to enhance the classroom preparation skills of secondary school students with attention-deficit/hyperactivity disorder (ADHD). Three male students enrolled in a public secondary school were selected for this study because teacher reports suggested that these students were insufficiently prepared for class and inconsistently completed assignments. The intervention involved training in self-management procedures focusing on the improvement of classroom preparation skills. Following the intervention, the training process was systematically faded. Results were consistent across the 3 participants in enhancing classroom preparation behaviors. Implications for practice and future research are discussed.

Keywords: *attention-deficit/hyperactivity disorder (ADHD); self-management; organizational skills; adolescents*

Attention-deficit/hyperactivity disorder (ADHD) is the most prevalent diagnosed behavior disorder in childhood (Charatan, 1998), affecting 3% to 7% of the school-aged population, with males nearly 3 times more likely to manifest the disorder than females (American Psychiatric Association, 2000; Szatmaria, 1992). Those with ADHD experience chronic and pervasive difficulties with inattention, impulsivity, and/or hyperactivity across various situations and set-

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tings (Barkley, 1998). These characteristics typically appear early in life and place individuals with the disorder at risk for a variety of collateral problems including academic underachievement, poor social relationships, and increased aggression and noncompliance.

Students diagnosed with ADHD are typically served in general education settings. Only about 50% of students with ADHD receive some form of special education services under the Individuals with Disabilities Education Act (IDEA), and of these students, at least 80% of their instructional time is spent in general education classrooms (Reid, Maag, Vasa, & Wright, 1994). Because of the high prevalence rate of ADHD among school-aged individuals, coupled with the placement of such students in general education settings, applied research in general education environments regarding attention disorders is a necessity (Mathes & Bender, 1997).

Although ADHD has received an abundance of attention in recent years, little of that attention has been specifically directed at classroom interventions. DuPaul and Eckert (1997) found that less than 100 methodologically reliable studies have investigated school-based interventions for this population. Furthermore, classroom teachers desire training in intervention approaches that would assist them in effectively working with students with ADHD (Reid et al., 1994). One setting in which this training would be particularly beneficial is in an inclusive learning environment where the majority of students with ADHD are educated.

Current classroom management strategies used to facilitate adjustment for students with ADHD focus on psychostimulant medications (i.e., methylphenidate) and teacher-based contingency management programs (i.e., token reinforcement and response cost; DuPaul & Eckert, 1997). Although these interventions have demonstrated positive behavior changes for various students, limitations should be noted, and research investigating alternative strategies should be conducted (Pelham & Murphy, 1986).

Pharmacological interventions have produced beneficial effects for some individuals with ADHD; however, psychostimulant medications, the class of drugs most frequently used to treat the symptoms of ADHD, have not been demonstrated to enhance the academic productivity for many students with ADHD (Rapport, Denney, DuPaul, &

Gardner, 1994). Furthermore, psychostimulant drugs, as with other pharmacological treatments, have potential short- and long-term adverse effects, the most frequently reported being appetite reduction (Gittelman & Kanner, 1986) and insomnia (Barkley, 1977). Other limitations with the use of stimulant medications include a relatively short duration of action on behavior (Greenhill, 1995, 2001) and that drugs are not educative, and therefore, individuals are not taught skills to ameliorate symptoms (O'Leary, 1980).

Teacher-based contingency management strategies are another commonly used intervention used to manage individuals' symptoms of ADHD. Although these techniques show promise in promoting academic improvement among students who exhibit behavioral disorders and learning problems (e.g., Abromowitz & O'Leary, 1990; Abromowitz, O'Leary, & Fattersak, 1988; Madsen, Becker, & Thomas, 1968; Thomas, Becker, Armstrong, 1968), they also have shortcomings. Behavioral techniques have been demonstrated to minimize some classroom behavior problems, but they do not fundamentally enhance academic performance (DuPaul & Eckert, 1997), are reactive in nature (Cole & Bambara, 1992), and require an external agent (i.e., classroom teacher) to deliver consequences to manage the target behavior (Hoff & DuPaul, 1998). The demands on teachers' time and effort to implement contingency management procedures reduce available instructional time (Cole, 1992). Considering the limitations of the current literature regarding intervention strategies to enhance the behavioral and academic functioning of individuals with ADHD, further research is warranted to examine alternative approaches.

Instructional time during the secondary years is invaluable though limited, particularly when teachers are attempting to educate students while implementing effective classroom-based interventions. In middle and high schools, teachers expect their students to behave appropriately during instructional time; they are often not inclined to make classroom modifications or specifically teach classroom preparation skills for those who require assistance (i.e., students with ADHD). The organizational structure of middle school requires students to change classrooms and teachers for different academic subjects. Middle school students no longer have one individual school desk or class-

room in which to place their academic materials and personal belongings as they likely did in their elementary setting. These organizational demands imposed by the secondary school environment require students to assume more autonomy and responsibility than previously with respect to their own academic management. Students are expected to arrive for classes punctually, prepare for academic instruction, bring the appropriate academic materials to class, and complete class and homework assignments on time.

In general education settings, especially at the secondary level, classroom preparation skills are required to attain success (Snyder & Bambara, 1997). Classroom preparation skills are preacademic behaviors that enable students to meet everyday classroom demands such as attending classes daily, arriving for classes promptly, being prepared for class, paying attention during instruction, sufficiently completing teacher-assigned tasks, and handing in work on time. At the secondary level, these skills are particularly salient because teachers expect that students will exhibit these behaviors and therefore do not directly teach these skills (Zigmond, Kerr, & Schaeffer, 1988). Students with attention problems may be at an increased risk for failure due, at least in part, to the inconsistent application of classroom preparation skills.

A strategy that has been used in school settings to successfully remediate problem behaviors displayed by adolescents is self-management (Cole, 1992). A number of studies have demonstrated positive effects of self-management interventions applied in school environments among students with mild disabilities (Fantuzzo & Polite, 1990; Hughes, Korinek, & Gorman, 1991; Hughes, Ruhl, & Misra, 1989). Self-management interventions offer teachers, particularly at the secondary level, several advantages (Cole, 1992). One benefit of self-management is that it centers on the students taking responsibility for their own actions. Another advantage of self-management approaches is that students are in control of the intervention; therefore, there is less demand placed on teachers. A third benefit concerning self-management procedures is that this type of intervention has the potential to promote generalization across classroom settings (Cole, 1992).

The available literature regarding self-management procedures and ADHD focuses on the effects of these procedures in treatment facilities and laboratory settings rather than in classrooms where these interventions will primarily be used (e.g., Hall & Kataria, 1992; Hinshaw & Melnick, 1992). It has been reported that out of 137 intervention studies regarding ADHD, only 21 were conducted within public school settings (Fiore, Becker, & Nero, 1993). This is a concern because generalization may not occur from the laboratory setting to the classroom.

This study replicated the procedures of Snyder and Bambara (1997) who evaluated the effects of a comprehensive self-management intervention on secondary students with learning disabilities, without ADHD, in both a learning support classroom and a mainstream classroom. This study employed a multiple baseline across settings design to evaluate the effectiveness of a self-management intervention on student classroom preparation skills. Specifically, the self-management procedures involved instruction by the students' learning support teacher of several intervention elements such as problem identification, goal setting, self-monitoring, self-evaluation, and self-reinforcement. This study attempted to provide support for self-management as an acceptable and effective intervention for adolescent students with ADHD in the general education setting. It was hypothesized that this intervention package would increase specific classroom preparation skills of three secondary students in three of their academic classes relative to typical classroom procedures.

METHOD

PARTICIPANTS AND SETTING

Three seventh-grade male students (Barry, Seth, and Kevin), diagnosed with ADHD, who attend a public middle school in Northeastern Pennsylvania participated in this study. Students, all 12 years old, were selected for this study on the basis of teacher reports that suggested that they were insufficiently prepared for class (e.g., did not have a pencil or notebook, did not hand in completed homework

assignments) and did not complete assigned tasks consistently. Written consent from the students' parents and oral assent from the students were obtained prior to initiating the study.

To confirm the students' diagnoses of ADHD, ratings of inattention, impulsivity, and hyperactivity were obtained from the students' parents and teachers using the Inattention and Hyperactivity-Impulsivity subscores from the home and school versions of the ADHD-IV Rating Scale (DuPaul, Power, Anastopoulos, & Reid, 1998), as well as the Attention Problems subscales of the Child Behavior Checklist (CBCL) (Achenbach, 1991) and the Teacher Rating Scale (TRF) (Achenbach, 1991). In addition to these rating scales, diagnostic interviews were conducted by the first author, individually, with each of the students' parent(s). The students who were selected to participate in the current study met criteria on the diagnostic interview of symptoms consistent with the *Diagnostic and Statistical Manual of Mental Disorders (4th ed.)* (American Psychiatric Association, 1994) criteria for the combined subtype of ADHD as reported by their parent(s). In addition, each participant had clinically significant scores on (a) the Inattention or Hyperactivity/Impulsivity subscales of the ADHD-IV Rating Scale (home and school versions) at or beyond the 93rd percentile for the child's age and gender, and (b) the CBCL and TRF Attention Problems subscale, *T*-score of 70 or greater.

The self-management training sessions were conducted in a small room located within the school's office area during students' home-room periods. Observations of the students' classroom preparation skills were made during targeted academic classes. For Barry and Kevin, classroom preparation behaviors were observed in Language Arts, whereas Seth's observations were conducted during his mathematics class.

All of the participants included in the investigation received methylphenidate to help alleviate the symptoms of ADHD. Each adolescent received 10 mg of methylphenidate in the morning prior to arriving at school, as well as an additional 10 mg taken in the school nurse's office following his or her lunch period. These participants, however, were still reported by their teachers as having problems with classroom preparation behaviors. During the course of this study, the participants' doses of methylphenidate remained constant. No changes in medication were made 3 months prior to the collection of

baseline data or throughout the course of the intervention phases of the study for all 3 participants. Observations in each student's target classroom were conducted following the students' lunch period, immediately after the ingestion of his or her second daily dosage of methylphenidate.

PRIMARY DEPENDENT MEASURE AND RECORDING PROCEDURE

The percentage of classroom preparation skills that were demonstrated in the targeted academic classrooms was the primary dependent measure used in this study. This percentage was calculated using a checklist, completed by the students' teachers, that identified classroom preparation behaviors (revised from Snyder & Bambara, 1997; see Appendix A). The students used the same checklist as the means to self-record their behavior; however, the participants were not informed that their teachers were completing the checklist. A list of the six classroom preparation behaviors and their operational definitions may be viewed in Table 1.

The teachers within the participants' targeted classrooms, who were not informed of the nature of the students' disorders or the intervention, collected data on a daily basis for each student. The occurrence or nonoccurrence of behaviors was recorded according to the classroom preparation behaviors on each specific student's checklist. To obtain interobserver agreement data, an observer who was also uninformed of the intervention procedures and the students' disorder collected data on randomly selected days for each student. The percentage of classroom preparation skills was computed by dividing the number of observed behaviors by the number of required behaviors for the day and multiplying the result by 100.

INTEROBSERVER AGREEMENT

Interobserver agreement was measured for 31% of the total observational sessions for all students in their targeted academic classroom (26 of 83 sessions). The interobserver sessions were selected randomly across all experimental phases. Data were collected independently by one observer and the teacher. The percentage of agreement (point-by-point) was computed by dividing the number of agreements

TABLE 1
Classroom Preparation Behaviors and Their Operational Definitions

<i>Behavior</i>	<i>Operational Definition</i>
Arrives on time for class instruction	Is in seat when the class bell rings
Is ready and prepared to begin class	Has eye contact with the teacher and terminates other activities such as talking when the teacher initiates class instruction
Has paper/notebook	Has notebook or paper on desktop
Has pen/pencil	Has pen/pencil (cap off) on desktop and open prepared for instruction
Hands in sufficiently completed homework on time	Homework is turned in as requested by the teacher
Completes homework	Responds (correctly or incorrectly) to each item in homework assignment

by the number of agreements added to the number of disagreements and multiplying the result by 100. Agreements were recorded when both the observer and the teacher recorded either an occurrence or a nonoccurrence of behavior as shown on the classroom preparation skills checklist. Agreement was 100% across all sessions.

PROCEDURAL INTEGRITY

Procedural integrity was checked once a week. An individual trained in the procedures of this study observed the training session in which the primary investigator trained the students. A checklist was established incorporating all the steps of the intervention. The number of steps that were instructed correctly were summed, and a percentage was calculated by dividing the number of correctly trained steps by the total number of steps and multiplying the result by 100. Procedural integrity during the training, monitoring, fading, and maintenance phases was very high (100% on all occasions).

EXPERIMENTAL DESIGN AND PROCEDURES

A multiple-baseline across participants design was employed to evaluate the effects of self-management of classroom preparation skills on adolescents with ADHD. Classroom preparation skills were the targeted behaviors of the self-management intervention. After stable responding had been demonstrated in baseline conditions in Barry's targeted classroom, the intervention was introduced for him while baseline conditions remained in effect for the other two students. After Barry displayed behavior change in his targeted, Language Arts class, the intervention was delivered to Seth. Once a stable intervention response was maintained for Seth, the intervention was applied for Kevin.

BASELINE

Baseline data were collected until a minimum of three data points were established in which the participant was engaged in less than 70% of the six identified classroom preparation behaviors. During baseline, teachers followed their customary routine. Teachers

prompted students, when necessary, to follow classroom requirements and intervened in their typical fashion (e.g., provided verbal reminders) during problematic situations.

SELF-MANAGEMENT

The self-management intervention incorporated two primary components: (a) student training of self-management skills and (b) monitoring the students' use of their newly acquired skills.

Training. Students met individually with the first author (hereafter referred to as the experimenter) during their homeroom period, in a small room located within the general office area, for 20 minutes on 3 consecutive days. During the first day of training, the experimenter gave the student an explanation and rationale for self-management. This provided students with (a) a description of their current classroom functioning based on observation results, (b) an explanation of the importance of responsibility for one's own behavior, and (c) the specific responsibilities one must maintain to be considered prepared for class instruction.

The self-management plan was taught to the students to be used specifically in their targeted academic classroom. The students were instructed to begin self-managing their behavior on the second day of the training phase. The students were provided with two forms of the self-management plan: (a) the student log and (b) the self-monitoring checklist (Appendix A). Following the distribution of the log and the checklist, the experimenter guided the students through the process of self-management. First, the experimenter had the students identify their present problems with class preparation and write this information in their student log. If necessary, the experimenter aided the students in identifying their current problems by discussing specific incidences of inappropriate behaviors attained through teacher consultations. The next issue the experimenter addressed with students was setting goals. Students verbally stated their goals regarding their compliance with the six classroom preparation behaviors (i.e., I will complete at least four of the six preparation behaviors each day of the school week) and then wrote these goals down on their self-monitoring form. The students were then taught to self-monitor their

behavior by indicating the behaviors on the classroom preparation skills checklist that they have engaged in during their targeted class. Students were also required to specify the times on the form that they self-monitored.

In addition to identifying current classroom preparation problems and goal setting, the student log served the purpose of self-evaluation and self-reinforcement. Self-evaluation obligated the students to calculate the number of behaviors they had complied with on the self-monitoring form. The students also were required to write down what they did to accomplish their goals, what they did not do to achieve their goals, and what they could do to be more effective. This helped the students both recognize problematic areas and problem-solve how to correct and improve on these areas (Snyder & Bambara, 1997). A Likert-type scale (ranging from 0 = *no effort/total dissatisfaction* to 5 = *best effort/total satisfaction*) was used for the students to evaluate the satisfaction they had with their effort. This evaluation of effort was the self-reinforcement component of the self-management procedure. A procedural integrity checklist used by the experimenter during the training may be viewed in Appendix B.

Monitoring. During the monitoring phase of the classroom implementation of the self-management skills, the experimenter met with students daily to monitor and assess the students' implementation of their skills. These sessions required the students to critique their self-monitoring forms and write in their student log. After students completed writing in their log, the experimenter commended students on compliance with met goals and assisted them in areas in which their goals had not been met. The experimenter also commented on students' conformity to preparation skills using the data collected by the students' teachers. The intervention continued individually until the student demonstrated 100% of the behaviors on the checklist for 4 out of 5 consecutive days in his or her targeted class.

Each week the students established new goals for themselves. Weekly goal setting and daily monitoring continued until 100% of classroom preparation skills were met for 4 out of 5 consecutive days. A procedural integrity checklist used by the experimenter during the monitoring phase may be viewed in Appendix C.

Fading. The fading phase required the students to continue using the self-management plan. However, the students were now only required to meet with the experimenter every other day during their homeroom. During these meetings, the experimenter continued to provide students with feedback regarding their performance in their targeted class. After the student exhibited 100% of the classroom preparation behavior for at least 4 out of 5 consecutive days, he or she began the maintenance phase.

Maintenance. During this phase, the student proceeded to engage in self-management. However, during this phase, the student only met with the experimenter one time per week. Once the student engaged in 100% of the classroom preparation behavior for at least 4 out of 5 consecutive school days, he or she was given the choice to cease the writing portion of the self-management plan.

SOCIAL VALIDATION AND RECORDING PROCEDURES

Peer comparison. The first measure of social validation included behaviors of “average” peers (student not diagnosed with ADHD). During 20 randomly selected opportunities, the students’ teachers recorded the behavior of an average student in each of the targeted students’ general education classrooms. During each observational session, the teacher randomly selected a different student in the classroom to observe. To compare the average students’ behaviors with the targeted students’ behaviors, the same checklist was used to record behavior. Interobserver agreement was established by having the teacher record the average students’ performance simultaneously with the observer.

Consumer satisfaction. The second measure of social validity encompassed an evaluation of teacher and student satisfaction of the intervention package. Following the maintenance phase, the experimenter provided the participants with the Children’s Intervention Rating Profile (CIRP) (Elliot, 1986). This questionnaire evaluated whether the students were satisfied with the intervention and believed the intervention to be effective. The participants responded to this

seven-item questionnaire by circling a number between 1 (indicating *complete disagreement*) and 6 (denoting *complete agreement*). Of the seven questions, four were phrased positively, and thus a rating of 4 or higher would indicate that the intervention was deemed acceptable. The remaining questions were worded in a negative manner, and therefore, a rating of 3 or lower was considered to indicate acceptability.

The students' academic teachers, who were initially uninformed of the intervention that was applied, were also provided with a rating profile to assess the intervention package's effectiveness. The teachers completed the rating profile following a verbal explanation of the intervention that was used. An adapted version of the Intervention Rating Profile (IRP) (Martens & Witt, 1982) was used to assess the teachers' perceptions of the self-management package. The teachers completed the questionnaire containing 15 questions, which are scored on a 6-point Likert-type scale, with 1 representing *complete disagreement with an item* and 6 representing *complete agreement with an item*. The satisfaction ratings were estimated by calculating a mean score for all 15 responses. An average score of greater than or equal to 4 indicated that the intervention was acceptable to the teacher.

RESULTS

The percentages of classroom preparation behaviors across baseline and intervention phases for the 3 participants are displayed in Figure 1. The percentage of classroom preparation behaviors during baseline was moderately variable for each of the 3 participants, ranging from 33% to 67% ($\underline{M} = 50\%$) for Barry, 33% to 67% ($\underline{M} = 53\%$) for Seth, and 0% to 67% ($\underline{M} = 40\%$) for Kevin.

Barry. There was a decreasing trend during the baseline phase for Barry. The effects of the self-management training were slightly delayed, as indicated by the change in intercept from baseline to training. The first data point during the training phase indicated the same percentage of preparation behaviors as the last day of baseline. The second and third days of training demonstrated increases in preparation behaviors to 75% indicating an accelerating trend in the training

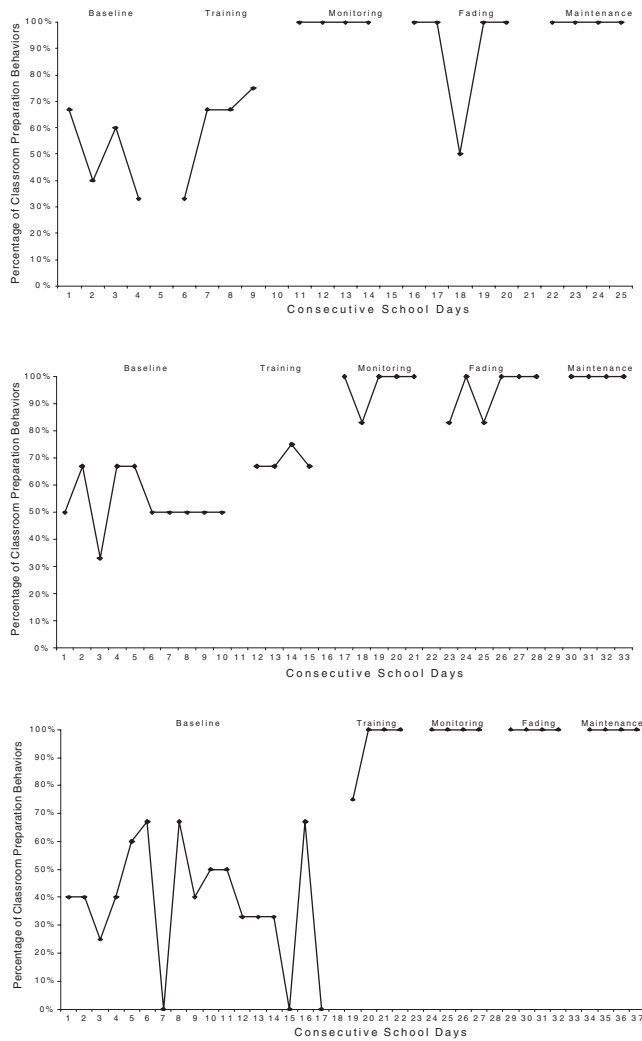


Figure 1. The percentage of classroom preparation behaviors exhibited by three adolescents with attention-deficit hyperactivity disorder (ADHD) across experimental phases.

phase. A difference in the level of functioning was evidenced immediately following the change from the training phase into the monitoring phase. During the last day of the training, Barry engaged in 75% of

classroom preparation behaviors. This percentage increased by 25%, reaching 100% beginning the first day of the monitoring phase. Continuous performance at 100% was maintained for 4 consecutive days, the entire duration of the monitoring phase. The progression from the monitoring phase into the fading phase did not indicate a difference in level, as Barry continued at 100% performance. One hundred percent performance during the fading phase was maintained for 4 out of 5 consecutive school days. Barry's 100% performance was maintained throughout the maintenance phase.

Seth. Similar positive effects of the intervention were demonstrated by Seth. However, a primary distinction between Barry's and Seth's performances was the somewhat more immediate effects of the self-management training for Seth. Seth's performance indicated a moderate increase in the baseline to the training phase as demonstrated in the change in intercept from 50% in baseline to 67% in the training phase. The baseline and training phase data for Seth had flat trends; however, there was a 16% increase in the means from baseline to training phases ($M_{bl} = 53\%$ to $M_{training} = 69\%$). On entering into the monitoring phase, Seth was performing at an average of 69% in the training phase. The phase change from training to monitoring resulted in an immediate increase from 67% on the last day of training to 100% performance on the first day of the monitoring phase. During the monitoring phase, Seth maintained criterion, with performance falling below 100% on one occasion. Seth was performing at 100% for the 3 final days of the monitoring phase. The first data point within the fading phase indicated a slight reduction in Seth's performance to 83%, which is a 17% decrease from that in the previous session. However, over the next 4 days of the fading phase, Seth's performance only dropped below 100% on one occasion. The final 3 days of the fading phase demonstrated consistent performance at 100%. Seth's perfect performance was maintained for 4 consecutive days during the entire maintenance phase.

Kevin. The baseline data for Kevin were somewhat more variable than the data for the other participants, ranging from 0% to 67%. The initial change from baseline to the training phase indicated immediate

effects. Kevin's performance increased from 0% on the last day of baseline to 75% performance on the first day of the training phase. The mean percentage of classroom preparation behaviors increased from 40% in baseline to 94% during the training phase. Following the first day of the self-management training, a completely flat trend of 100% performance occurred throughout each of the subsequent intervention phases.

SOCIAL VALIDATION

Peer comparison. There were no occasions in which the average students' classroom preparation behavior fell below 100%. The average students' performance was collected simultaneously by the teacher and another observer for the purpose of interobserver agreement. Interobserver agreement data were collected for all 20 sessions when peer comparisons were observed. Agreement was 100% across sessions. Classroom preparation behaviors of the students with ADHD compared favorably with peers' performance during the monitoring, fading, and maintenance phases of the intervention.

Consumer satisfaction. The acceptability of the self-management package was measured at the conclusion of the intervention by requesting that both the students themselves and the teachers respond to brief questionnaires. Table 1 displays the responses of the 3 participants on the CIRP. All 3 students indicated that the self-management method was fair and suggested that they liked the intervention. Students did not record that this intervention resulted in problems with their peers. All 3 students strongly agreed that the intervention would be a good one to use with other students, and they indicated that they believed the self-management strategy helped them do better in school.

Table 2 contains the results from the scores on the IRP completed by the participants' teachers. The average score on the 15-item questionnaire was above 4 for each of the participants' teachers, indicating that they consistently believed that the self-management strategy was, in general, acceptable for the students' behaviors. Specifically, the teachers reported that the students' behavior problems were severe

TABLE 2
Responses From the Intervention Rating Profile

Statement	Participant's Teacher	
	Barry's Teacher	Kevin's Teacher
1. Self-management was an acceptable intervention package for the student's problem behaviors.	5	4
2. Most teachers would find this intervention package appropriate for behavior problems in addition to the one described.	5	4
3. This intervention package was effective in changing the student's problem behaviors.	5	5
4. I would suggest the use of this intervention package to other teachers.	6	6
5. The student's behavior problem is severe enough to warrant the use of this intervention.	6	5
6. Most teachers would find this intervention package suitable for the behavior problems described.	6	6
7. I would be willing to use this intervention package in the classroom setting.	6	6
8. This intervention did not result in negative side effects for the student.	6	6
9. This intervention package was appropriate for a variety of students.	6	6
10. This intervention is consistent with those I have used in classroom settings.	6	5
11. This intervention was a fair way to handle the student's problem behaviors.	4	5
12. This intervention is reasonable for the problem behaviors described.	6	5
13. I liked the procedures used in this intervention strategy.	6	5
14. This intervention was a good way to handle this student's behavior.	6	5
15. Overall, this intervention was beneficial for the student.	6	6

NOTE: Judgments were made on a 6-point Likert-type scale (1 = *strongly disagree*, 6 = *strongly agree*).

enough to warrant the use of the self-management intervention. The participants' teachers asserted that they would suggest the use of the intervention package to other teachers and that the intervention was appropriate for a variety of students. In addition, the teachers indicated that they would be willing to use the current intervention in their classroom again. The teachers noted that the intervention did not result in negative side effects for the students and was consistent with other interventions that they had previously used.

DISCUSSION

This investigation evaluated the efficacy of a self-management intervention package used to enhance the classroom preparation behaviors of 3 adolescents diagnosed with ADHD. Treatment integrity scores were found to be high, demonstrating that the self-management training, monitoring, fading, and maintenance procedures were implemented as intended. A multiple baseline across participants design demonstrated positive results, indicating that the self-management intervention was successful in improving classroom preparation behaviors. Furthermore, the participants' classroom preparation skills were maintained as the intervention was systematically faded over time. Measures of social validation indicated that following the implementation of the self-management intervention, the participants performed as well as their "typical" classmates. In addition, the students and teachers rated the intervention to be acceptable and effective in enhancing the participants' classroom behavior.

The results of this study are consistent with the findings of Snyder and Bambara (1997) who evaluated the effects of a self-management intervention on secondary students with learning disabilities in a learning support environment and one mainstream classroom. Both studies indicate that the self-management procedures were effective in enhancing classroom preparation behaviors.

This study extended the literature on ADHD by positing self-management as a potential intervention technique to alleviate symptoms of the disorder. Previous research regarding self-management procedures and ADHD has emphasized the efficacy of these proce-

dures in treatment facilities and laboratory settings rather than in classrooms where these interventions will primarily be used (Hall & Kataria, 1992; Hinshaw & Melnick, 1992). This study, however, evaluated the self-management intervention within the general education classroom setting (i.e., the most common placement for children with ADHD). In addition, this study differed from prior studies evaluating self-management on adolescents with ADHD by targeting classroom preparation skills and preparation behaviors rather than self-control.

Although this study determined that the self-management intervention produced positive effects, limitations exist. The 3 students that participated in this study had combined type ADHD; therefore, the use of this intervention with other subtypes (e.g., predominantly inattentive type and predominantly hyperactive-impulsive type) is open to question. Prospective investigations should include participants with other subtypes of ADHD to evaluate the efficacy of this intervention across variants of this disorder. This study was also limited by the fact that academic productivity was not evaluated. Future researchers may consider extending this study by examining the intervention effect on the amount of classwork completed, as well as the accuracy of work completed. This investigation was also limited in that a school-based resource (i.e., school psychologist) did not implement the intervention. Ideally, students would be trained to use this intervention by school personnel, such as a school psychologist, with education and training in behavior management techniques. Although the experimenter was not specifically affiliated with the school, the intervention training and implementation, as well as the classroom observations, were conducted within the school environment. Thus, the experimenter was acting in the role of a school-based clinician in terms of the intervention training, organization of meetings, and monitoring treatment efficacy.

The self-management procedures applied in this investigation served as an adjunctive intervention strategy representing the effects of pharmacological treatment combined with a cognitive-behavioral technique. Therefore, it remains unclear as to whether the self-management procedures would be effective if used with individuals not on medication. Future studies should select participants not receiving

pharmacological therapy to evaluate the efficacy of the self-management procedures in isolation.

Although the intervention in this study was intended to teach students to assume complete responsibility for their behavior without involving any significant environmentally controlling factors, it is possible that the nature of the intervention, involving meetings with the experimenter, did create some external influence. In a critical review paper of self-management interventions used with adolescents, Gross and Wojnilower (1984) concluded that most studies purporting to demonstrate the success of self-management strategies did, in fact, have external contingencies that may have affected the outcomes. This study may have reduced peripheral contingencies by continuing to collect data following the cessation of the experimenter/student meetings. Prospective research should consider evaluating the effectiveness of self-management procedures while minimizing environmental factors.

Self-management interventions, such as the one used in this study, may encourage generalization, which is especially important during junior high school and high school when students change teachers and classrooms for different academic subjects. Secondary students may apply self-management skills in all classes to enhance preparation behaviors. In addition, these strategies require students to be accountable for their actions, which again is important at the secondary education level. During junior high school and high school, teachers' expectations of student behavior most often include classroom preparation skills.

Training in the self-management procedures used in this study may be conducted by school personnel, such as school psychologists, school counselors, or teachers who have knowledge of behavior management techniques. Instructing students in self-management skills initially requires time for the instructor to train, monitor, and evaluate the intervention to promote successful outcomes. Subsequent to initial efforts and time requirements, the instructor's responsibilities for managing the intervention are diminished, placing accountability on the student. A school psychologist is well suited to assume the role of

training students in self-management procedures. In addition, school psychologists may consult with teachers, providing them with the necessary instruction to train students in the application of these skills.

This study demonstrated that the self-management intervention package improved the classroom preparation behaviors of the 3 adolescents identified with ADHD who participated in this study. The results lend support for the use of self-management as an intervention in secondary classrooms for students who exhibit organization and classroom preparation difficulties. Further research is required to more specifically delineate the scope and limitations of this intervention for addressing the organizational skills of students with ADHD.

APPENDIX A Self-Monitoring Checklist

<i>Classroom Preparation Behaviors</i>	<i>Yes</i>	<i>No</i>
Was I in my seat when the bell rang?	_____	_____
Did I have eye contact with my teacher and stop my other activities when the teacher began class instruction?	_____	_____
Did I have my pen/pencil (cap off) on my desk?	_____	_____
Did I have my notebook or paper and textbook on my desk and open at the beginning of the lesson?	_____	_____
Did I turn in my homework as requested by my teacher?	_____	_____
Did I respond to each item in my homework assignment?	_____	_____
Day: _____		
Time: _____		

APPENDIX B Procedural Integrity Checklist for the Training Phase

____ 1. Gave the student an explanation and rationale for self-management.

- ___ 2. Told student their current classroom functioning and the results of their functioning.
 - ___ 3. Told student salience of self-responsibility of action.
 - ___ 4. Informed students of their specific responsibilities that they must maintain for class preparation.
 - ___ 5. Taught students to use procedures in their targeted classroom.
 - ___ 6. Provided students with two forms of the self-management plan: (a) the student log and (b) the self-monitoring checklist (see Appendix A).
 - ___ 7. Had students identify their present problems with class preparation.
 - ___ 8. If necessary, aided students in identifying their current problems by discussing specific incidences of inappropriate behaviors.
 - ___ 9. Had students verbally asserting their goals regarding behaviors concerning classroom preparation.
 - ___ 10. Told students to write these goals down on their self-monitoring form.
 - ___ 11. Taught students to self-monitor their behavior by checking off the behaviors on the self-monitoring checklist.
 - ___ 12. Taught students to specify the times on the form that they self-monitored.
 - ___ 13. Told students to write down what goals they accomplished.
 - ___ 14. Told students to write down what they did that caused them not to achieve their goals.
 - ___ 15. Told students to write down ideas that would be effective in achieving their goals.
 - ___ 16. Taught students to evaluate the satisfaction they had with their effort to attain their goals in their log using a Likert-type scale (ranging from 0 = *no effort/total dissatisfaction* to 5 = *best effort/total satisfaction*).
-

APPENDIX C

Procedural Integrity Checklist During Monitoring Sessions

After students have completed writing in their log:

- ___ 1. Commended students on compliance with met goals.
- ___ 2. Assisted students in areas where they have not met their goals.

According to the data teachers collect:

- ___ 3. Commented on students' conformity to targeted classroom skills.
 - ___ 4. When a new week began, students were told to establish a new behavioral goal.
-

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