THE USE OF GOAL SETTING AND CONTINGENCY CONTRACTING FOR IMPROVING CHILDREN'S HOMEWORK PERFORMANCE

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We examined the effects of goal setting and contingency contracting on children's homework performance. Subjects were 4 parent-child dyads in which the child exhibited substantial homework problems. Using a combination of multiple baseline and reversal (ABAB) designs, goal setting and contingency contracting produced significant improvements in children's homework accuracy. Two of the 4 subjects showed substantial improvements in on-task behavior. Consumer satisfaction with the procedures was supported by parent ratings conducted posttreatment.

DESCRIPTORS: homework, behavior therapy, goal setting, contingency contracting

Declining achievement test scores in the United States and mediocre levels of academic achievement are sources of significant concern to parents and school personnel (National Commission on Excellence in Education, 1983; Stevenson, Lee, & Stigler, 1986; Stigler, Lee, & Stevenson, 1987; Walberg, 1984). In response, researchers have identified multiple factors associated with achievement, one of which is homework.

Homework has been examined as an independent, a dependent, and a mediating variable. For example, Keith and his colleagues (Keith, 1982; Keith & Page, 1985) investigated homework as a mediating variable in a path-analytic investigation. Their results suggested that time spent on homework was the second best predictor (after ability) of students' grades and achievement. In addition, increased homework time was positively associated with increased achievement for all ability levels (Keith, 1982; Keith & Page, 1985). Another study, in which homework was examined as an independent variable, investigated whether homework could be used to improve students' academic test grades

(Maertens & Johnston, 1972). Homework significantly improved test scores over a no-homework condition. Thus, homework is positively associated with academic achievement. Also, unlike other variables (e.g., ability or socioeconomic status), homework is a variable that can be manipulated to improve student achievement (Keith & Page, 1985).

Despite indications that homework is a valuable contributor to learning and achievement and that homework problems are common among school-aged children (Anesko & O'Leary, 1982), research examining interventions for improving children's homework performance has been limited (Cooper, 1989; Miller & Kelley, 1992). Several studies examined the effects of specific interventions on homework completion, thus targeting homework as a dependent variable. For example, school-home notes (Dougherty & Dougherty, 1977), response cost (Hall, Cristler, Cranston, & Tucker, 1970), and self-instruction training (Fish & Mendola, 1986) have all been shown to be effective interventions for increasing homework completion. In addition, Anesko and O'Leary (1982) evaluated the efficacy of a parent training program designed to remedy children's homework problems. Their multicomponent treatment package included development of a good homework routine, coping strategies, problem-solving skills, and behavioral contracting, and resulted in desirable changes in parent and child behavior that were maintained at a 6-month follow-up. However, several methodological shortcomings were noted for these studies, including failure to

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obtain treatment integrity data (Fish & Mendola, 1986), failure of control-group subjects to improve following treatment, and use of laboratory (vs. naturalistic) observations (Anesko & O'Leary, 1982). These problems limit the generalizability of results. In addition, none of these studies evaluated homework accuracy.

The importance of assessing homework accuracy was highlighted by Harris and Sherman (1974), in one of only two studies that targeted both homework completion and accuracy. In this study, teachers allowed students completing their homework at an accuracy level of 80% or greater to leave school 15 min early. This intervention increased the number of students completing homework and the accuracy of completed assignments. In a follow-up study, the same investigators demonstrated that only homework completed at a reasonable level of accuracy enhanced classroom performance (Harris & Sherman, 1974).

The other study targeting homework completion and accuracy examined the efficacy of training mothers to use contingency management techniques in a group format (Goldberg, Merbaum, Even, Getz, & Safir, 1981). Mothers trained to use operant conditioning procedures aimed at children's homework difficulties were compared to a control condition, a nonspecific psychotherapy condition, and a feedback condition. Relative to the other experimental conditions, only mothers trained to use operant conditioning techniques (e.g., positive reinforcement and contingency contracting) were able to effect significant quantitative and qualitative improvements in their children's homework performance (Goldberg et al., 1981).

One intervention that seems appropriate for ameliorating children's homework difficulties is goal setting (Miller & Kelley, 1992). Goal setting consists of comparisons of performance goals against present performance level and may be viewed as a form of self-monitoring, in which children evaluate their own performance (Bandura, 1977). Goal setting has been applied in laboratory and classroom settings and is effective with children across a wide range of ages and abilities (Bandura & Schunk,

1981; Brownell, Colletti, Ersner-Hershfield, Hershfield, & Wilson, 1977; Schunk, 1983, 1985).

Certain properties of the goal may be manipulated to improve academic responding. For example, specific, stringent, and proximal goals produce enhanced performance (Bandura & Schunk, 1981; Morgan, 1985; Schunk, 1983). Also, the beneficial effects of goal setting are augmented by the addition of performance-contingent rewards (Schunk, 1984). Thus, a reward-based program, such as a contingency contract, should increase the efficacy of goal setting.

The combined use of goal setting and contingency contracting provides several advantages over other homework interventions. First, goal setting has been identified as an important step toward self-management of behavior (Brownell et al., 1977; Kelley & Stokes, 1984). When applied to academic tasks, goal setting has produced improved task engagement and academic achievement as well as enhanced motivation (Bandura, 1977; Schunk, 1985). In addition, programs incorporating goal setting and contingent rewards provide antecedent control over target behavior through the identification of goals and reinforcement contingencies, and consequent control via positive reinforcement of goal achievement (Kelley & Stokes, 1984; O'Leary & Dubey, 1979). Finally, many homework interventions target only the final homework product and do not address the manner in which children approach or complete homework. Goal setting, however, directly targets the homework process and provides a framework around which children can complete homework.

The current study was designed to assess the efficacy of goal setting and contingency contracting for augmenting children's homework performance. Although other researchers have included variations of goal setting and/or contracting in multicomponent treatment packages (e.g., Anesko & O'Leary, 1982; Goldberg et al., 1981), this was the first study to examine the combined effects of these procedures on children's homework performance. We hypothesized that these procedures would increase children's work accuracy and on-task be-

havior and improve their scores on a standardized checklist measuring homework problems.

METHOD

Subjects

Subjects were 4 parent-child dyads. Subject selection criteria included: (a) scores on the homework problem checklist (HPC; described below) (Anesko, Schoiack, Ramirez, & Levine, 1987) at least one standard deviation above the mean, (b) homework accuracy rates below 80% or on-task rates below 70% during baseline observations, and (c) average achievement in math and reading as measured by the Woodcock-Johnson Psycho-Educational Battery—Revised (tests of achievement). These criteria aided in selecting subjects who were having difficulties completing their homework and who were at risk for academic problems despite average or better academic skills. All subjects were white and of middle to upper middle socioeconomic status (Hollingshead, 1975). Two of the subjects' parents were divorced.

Adam was an 11-year-old sixth grader who typically failed to bring books or assignments home and frequently fought with his parents over homework. He often refused to complete homework and typically did not turn completed work in to his teachers. On the HPC, Adam's mother indicated that he exhibited the majority of these homework problems often or very often. He received a score of 51 (range, 0 to 60) on the HPC. Scores on the Conners Parent and Teacher Rating Scales (CPRS-48 and CTRS-28) (Goyette, Conners, & Ulrich, 1978) indicated that Adam's behavior was significantly problematic on all dimensions (i.e., conduct, learning, psychosomatic, impulsivity, hyperactivity, inattention/passivity) with the exception of anxiety.

Ann was a 9-year-old fourth grader who completed homework quickly but inaccurately. On the HPC, Ann's mother reported that Ann often had to be reminded to begin homework, responded poorly when told to correct homework, and was easily frustrated by homework assignments. Ann

received a total score of 28 on the HPC. Ann's mother and teacher rated her behavior as problematic on several dimensions on the CPRS-48 and CTRS-28, including conduct and learning problems, impulsivity, hyperactivity, and inattention/passivity.

Jenny was an 11-year-old fifth grader with a history of poor school performance despite indications that she was capable of completing assigned work. Her mother complained that homework precipitated much conflict, because Jenny often requested help but subsequently criticized and argued with her mother. Her total score on the HPC was 38. Her mother's and teacher's responses to the Conners scales indicated difficulties with learning, expression of physical symptoms, and inattention/passivity.

Richard was a 10-year-old fifth grader who was easily frustrated and distracted during homework. Although he frequently asked his mother for help, he typically responded to her suggestions by whining, complaining, or yelling. He received a total score of 27 on the HPC. Although Richard's mother rated his behavior as problematic on several scales of the CPRS-48 (including conduct problems, hyperactivity, and psychosomatic), his teacher's ratings indicated that she did not perceive his behavior as problematic.

Measures

Homework problem checklist (HPC). The HPC (Anesko et al., 1987) is a parent-completed checklist designed to assess homework problems. Items were generated from interviews with clinicians, parents, and elementary school teachers and from reviews of parenting books (e.g., Dodson, 1970). On the HPC, parents rate the frequency with which their child has exhibited each of 20 homework problems over the prior 2 weeks. Representative items include "procrastinates, puts off doing homework" and "produces messy or sloppy work." All items are rated as occurring very often, often, at times, or never and receive a corresponding score of 3, 2, 1, or 0 points. Scores are then derived by summing the items and range from 0 to 60, with

higher scores representing more problematic homework behavior. The overall mean on the HPC is 10.33 ($SD = 7.91$), and norms have been established for second- through fourth-grade boys and girls. Because norms were not available for 3 of the 4 subjects in this study, this measure was used primarily for descriptive purposes. The HPC is internally consistent ($\alpha = .91$) and has been shown to be sensitive to treatment effects following group intervention that targets parental management of homework problems (Anesko et al., 1987). The HPC was administered before and after treatment.

Accuracy of completed homework. Accuracy of completed work was calculated on a daily basis by a parent. Incorrect and incomplete problems were scored as incorrect. Problems having more than one part were scored such that each problem part was counted independently. Parents recorded the total number correct and the total number of problems in each assignment. Scoring procedures were used consistently across students and days.

Interobserver agreement checks on homework accuracy were randomly conducted once weekly for each subject by a research assistant. Item-by-item comparisons of observers' records yielded 100% agreement for all subjects.

On-task behavior. Observations of on-task behavior were conducted on Monday through Thursday evenings when the subjects had homework. Observers were located approximately 1 to 3 m from the child such that they could directly observe both the child and parent, including their eyes and faces. In addition, observers were positioned so as to not obstruct the child's or parent's movement in the room. Observers used a hand-held stopwatch to determine the beginning and end of intervals. Observers were instructed not to interact with the parent or child in any way during observations, and families were informed of this condition. As soon as the child completed all homework or after 40 min, whichever occurred first, observers left the home and the child continued to complete homework, if necessary.

Observations were coded during continuous 15-s

intervals using partial-interval recording with a 5-s occurrence criterion for off-task behavior, and whole-interval recording for on-task behavior. Off-task behavior was coded if the child manipulated non-task-related objects (e.g., toys, desk), did not attend directly to the task, or left his or her seat without permission continuously for 5 or more seconds. On-task behavior was recorded if the child was completing his or her work with his or her eyes and head oriented towards work materials and if off-task behavior was not recorded during the interval.

Trained graduate and undergraduate students served as observers and were required to pass a test of written proficiency and demonstrate overall agreement of at least 80% before being assigned to home observations. Interobserver agreement for on-task and off-task behavior was assessed for 25% of all home observations. Agreement scores were calculated by dividing the number of agreements of occurrence by the number of agreements plus disagreements and then multiplying by 100%. Mean agreement between observers for on-task and off-task behavior averaged 97% (range, 95% to 99%) and 87% (range, 75% to 94%), respectively.

Treatment integrity checklist. Observers completed a brief checklist following each observation throughout all experimental phases to evaluate the integrity of treatment implementation. Checklist items assessed whether the goal-setting worksheet and a timer were used, the child remained seated or answered the telephone, nonfamily members were present, the child asked for help more than once during completion of any one goal, and the parent was present during goal setting.

Interobserver agreement was assessed on the treatment integrity checklist for 20% of all observations. Agreement between observers was 100%. Overall compliance scores were 97% for Adam, 94% for Ann, 98% for Jenny, and 100% for Richard. The following examples of noncompliance were recorded: Adam received a phone call during one observation, and Jenny left her seat for brief periods during two observations. Ann asked for help more than once during a goal-setting period on four occasions but never asked for help more than three

times. Therefore, parents and children followed treatment recommendations closely, with few omissions.

Parent's consumer satisfaction questionnaire (PCSQ). Parents completed a version of the PCSQ (Forehand & McMahon, 1981) adapted specifically for this study. The PCSQ is a nonstandardized measure of consumer satisfaction that includes ratings of satisfaction with the overall treatment program, teaching methods, treatment procedures, and therapist behavior. Total scores are derived by summing the scores of these four dimensions and range from 20 to 147, with higher scores indicating greater degrees of satisfaction.

Follow-up interview. The parent's and child's perceptions of treatment were assessed via an unstructured interview conducted by the experimenter. They were asked to identify the strengths and weaknesses of goal setting and contingency contracting and to specify any way in which they would have changed treatment implementation. Both the parent and child were asked what they perceived to be the positive and negative effects of the treatment procedures.

Design and Procedures

A combination of reversal (ABAB) and multiple baseline designs was used to evaluate the effects of goal setting and contingency contracting on subjects' homework performance (Barlow & Hersen, 1984; Kazdin, 1982).

Intake interview. Assessment of children's homework and school performance was conducted via an interview with the parent and child. At this time, the parent completed the HPC, the CPRS, and a demographic questionnaire. Also, the parent and child ranked the child's academic subjects from least to most difficult. In all cases, the parent and child agreed on this ranking. Teachers were interviewed to assess their perceptions of the child's homework performance and completed the Conners Teacher Rating Scale.

Baseline. During baseline, the parent and child conducted homework as usual, except that they were seated in a quiet, secluded location with all

pertinent materials (e.g., paper, pencils, calculator, dictionary, etc.) made readily accessible. Throughout the study, all observations were conducted on the same academic subjects in the same order, with the most problematic assignments being completed first. The parent recorded the amount of time spent on homework problems completed in all academic subjects. He or she also recorded the type of problems completed (e.g., multiple choice questions, copying spelling words), the number of each type completed, and the number of problems completed correctly.

Goal setting and contingency contracting. Following baseline, the parent was provided with a treatment rationale and instructions for goal setting and contingency contracting. Parent training was conducted individually for each family by the experimenter and consisted of the provision of written materials (available from the first author), discussion, practice, and performance feedback. The experimenter reviewed the written materials with the parent and provided examples of how to implement treatment procedures. In the experimenter's presence, the parent explained the treatment procedures to the child. The experimenter was also present during the initial goal-setting session to answer questions and provide performance feedback to families. For example, family members were given corrective feedback if they were not implementing procedures correctly or if they were setting goals that appeared to be too easy or too difficult. Families were given the experimenter's telephone number should further questions arise.

Regarding homework materials, each parent and child discussed what materials were generally needed to complete homework. For example, most families identified textbooks, workbooks, and homework assignments as necessary materials. Each night before homework began, the parent and child evaluated whether all of these materials had been brought home. If the child failed to bring home even one item, the parent recorded that the child was unsuccessful in bringing home all materials. A monitoring sheet was provided by the experimenter for this purpose. Although they were not directly

Table 1
Goal-Setting Worksheet

Job	Academic subject	Child's goal	Parent's goal	Compromise goal	Time to complete	Achieved goal?
1						
2						
3						
4						

Total number of goals set: _____

Number of goals achieved: _____

Percentage of goals achieved (number achieved/number set): _____

involved, teachers were informed of this expectation and were asked to notify the parent or the experimenter if a child was not completing homework or if assignments were not being taken home. Homework and observations were conducted as usual, whether or not all materials had been brought home. None of the subjects ever forgot so much of their homework that observations could not be conducted in full.

Each parent and child were taught to divide homework assignments into specific, small goals. The homework goals worksheet, presented in Table 1, was used as the format by which the goal-setting process was organized. Initially, the parent and child each suggested a goal. Then, a compromise homework goal was recorded (e.g., the child will complete six math problems in the next 10 min). The parent and child were instructed to set challenging yet attainable goals. If the child completed goals in significantly more or less time than allotted, subsequent goals were adjusted accordingly. Once a goal was determined, a timer was set for the amount of time specified. The child was told that he or she could request help only once during each goal period and was reminded of this if help was requested more than once (although there were no further consequences for doing so). At the end of each goal period, the child determined whether the goal had been achieved, and the parent confirmed the child's judgments. Incomplete or inaccurate problems were incorporated into the next goal. This process continued until homework was complete.

Each week, the parent and child negotiated contracts that specified daily and weekly rewards con-

tingent on achievement of homework goals and bringing all necessary materials home. A sample contract is presented in Table 2. The parent was instructed to identify several rewards from which the child could choose and to change the rewards occasionally to prevent the child from becoming bored with reward choices. Rewards were different for each child and included special snacks, small amounts of money (e.g., 25¢), stickers, and late bedtime as daily rewards, and renting a videotape, having a friend spend the night, or a trip to a shopping mall as weekly rewards. Also, the contract specified a sanction to be implemented should the child not bring home all necessary homework materials. Sanctions included early bedtime or no bedtime snack.

Each parent was encouraged to include the child in the contracting procedure and to practice good communication when negotiating contracts. For example, the parent was encouraged to listen carefully, offer a variety of solutions, avoid criticism, be willing to compromise, and consistently provide promised rewards. The parent recorded the daily and weekly rewards the child earned on a monitoring sheet provided by the experimenter. According to these sheets, each parent consistently provided contracted rewards, a report that was corroborated by the child.

RESULTS

On-task behavior. Figure 1 presents on-task data for all 4 subjects in the reversal within multiple baseline across subjects design. Richard was on-task

Table 2
Sample Contingency Contract

The following materials need to be brought home every day: homework pad, workbooks, text books, pencils.

If Ann remembers to bring home all of these materials, then she may choose one of the following rewards: gumballs, 10¢.

However, if Ann forgets to bring home some of her homework materials, then she: does not get a snack before bed.

Ann may choose one of the following rewards if she meets 90% to 100% of her goals: late bedtime (by 20 minutes), 2 stickers or one of these if she meets 75% to 89% of her goals: soda, 1 sticker.

If Ann meets 80% or more of her goals on at least 3 days this week, she may choose one of the following BONUS rewards: renting a videotape, having a friend from school over to play.

Child's signature

Parent's signature

for a mean of 68% of intervals during the initial baseline phase and increased his on-task behavior to 97% of intervals when treatment procedures were implemented. The percentage of on-task behavior decreased to a mean of 67% upon withdrawal of treatment and again increased to a mean of 97% when goal setting and contingency contracting were reintroduced. Richard's performance during treatment phases was consistent and exhibited little variability.

Jenny's level of on-task behavior during baseline averaged 74% of the intervals. Percentage of on-task behavior improved to a mean of 91% during treatment and decreased to an average of 65% during the return to baseline. With reintroduction of treatment, percentage of on-task behavior improved to 95% of the intervals.

Adam's level of on-task behavior averaged 60% and was variable during baseline (range, 21% to 85%). Introduction of treatment conditions produced an increase in on-task behavior to a mean of 88% of intervals; this percentage remained stable throughout the subsequent experimental conditions.

Ann was on-task for an average of 83% of the intervals during baseline. This percentage increased to a mean of 94% with treatment implementation. Her levels of on-task behavior remained high throughout subsequent experimental conditions.

Figure 1. Percentage intervals of on-task behavior during baseline and treatment conditions across subjects. Sessions correspond to sequential school days (i.e., Mondays through Thursdays) on which subjects were assigned homework. Data were not collected on days on which homework was not assigned.

Accuracy. Figure 2 presents accuracy data for all 4 subjects. Richard's accuracy was 64% during baseline and increased to 85% during treatment. Accuracy decreased to a mean of 45% during the return to baseline and again increased to a mean of 92% during the final treatment phase.

During baseline, Jenny achieved a mean accuracy level of 64%, which increased to 92% when treatment was implemented. Return to baseline resulted in a decrease in accuracy to a mean of 75%, which

Figure 2. Percentage of homework completed accurately during baseline and treatment conditions across subjects. Sessions correspond to sequential school days (i.e., Mondays through Thursdays) on which subjects were assigned homework. Data were not collected on days on which homework was not assigned.

again increased to an average of 90% when treatment was reinstituted.

Accuracy of Adam's completed work averaged 71% during baseline and was also variable (range, 60% to 86%). Accuracy increased to 91% with the implementation of treatment and decreased to a mean of 70% with the subsequent withdrawal of treatment conditions. When treatment was reintro-

duced, Adam's accuracy again increased to a mean of 91%.

Substantial changes were observed with respect to the accuracy of Ann's work across experimental conditions. Baseline levels of accuracy averaged 64% and were quite variable across the condition (range, 40% to 92%). Implementation of treatment increased the mean accuracy level to 88% and withdrawal of treatment conditions decreased mean accuracy to 69%. Accuracy increased to a mean of 92% when goal setting and contingency contracting were reinstituted.

Homework materials. Neither Richard nor Adam exhibited difficulties bringing homework materials home, so this behavior was not targeted for intervention for either of them. Jenny brought home necessary materials on only 40% of baseline days but brought these home on 89% of treatment days. During both the return to baseline and reintroduction of treatment, Jenny brought required materials home every day (100%). Ann brought pertinent materials home on only 55% of baseline days, on 75% of the days during the initial treatment phase, and on 100% of the days during both treatment withdrawal and treatment reintroduction.

Although parents monitored total time spent completing homework, no differences were observed across experimental phases for any of the subjects. That is, homework did not take any more or less time with the implementation of goal setting and contingency contracting.

Homework problem checklist. Richard's homework behavior improved markedly; his pretreatment score of 27 improved to a posttreatment score of 9. However, despite observed behavior changes, parents' HPC scores did not all reflect notable improvement. For example, Ann's mother's score decreased from 28 to 26, an improvement of only 2 points from pre- to posttreatment. Jenny's mother's score decreased from 38 (pretreatment) to 21 (posttreatment). Adam's mother indicated a change of only 4 points, with a pretreatment score of 51 and a posttreatment score of 47.

Consumer satisfaction. Parents' scores on the adapted PCSQ (Forehand & McMahon, 1981) are

presented in Table 3. Parents indicated that they were satisfied with the overall program, teaching methods, treatment procedures, and therapist behavior. In general, parents evaluated goal setting and contingency contracting as highly useful procedures that were easy to implement; they also expressed confidence in their ability to manage homework difficulties.

DISCUSSION

The present study examined the effects of goal setting and contingency contracting on the homework performance of children who exhibited substantial homework difficulties. Results of the reversal within multiple baseline across subjects design showed increased work accuracy for all subjects, and, for 3 of 4 subjects, increased stability of responding across treatment phases. This is an important treatment effect in light of research demonstrating that accuracy of completed homework is necessary to promote enhanced classroom performance (Harris & Sherman, 1974).

Treatment efficacy with regard to on-task behavior was less clear. Two subjects demonstrated clear increases in the percentage of on-task behavior during treatment phases and marked decreases during baseline phases. Thus, for those 2 subjects, treatment procedures clearly exerted control over this dependent variable. However, experimental control of on-task behavior for the remaining 2 subjects was less clear. Ann did not exhibit noticeably different levels of on-task behavior across experimental conditions. Adam, on the other hand, initially exhibited low and variable levels of on-task behavior that increased with treatment implementation but did not decrease on return to baseline.

In an effort to understand the failure of the treatment procedures to demonstrate clear control over on-task behavior, several hypotheses must be considered. First, the treatment may not have exerted control over this target behavior. However, examination of the multiple baseline suggests that on-task behavior did not improve for any subject until treatment was implemented; it is therefore

Table 3
Parents' Consumer Satisfaction Questionnaire Scores

	Adam	Ann	Jenny	Richard
Overall program (range, 10 to 70)	51	45	56	62
Difficulty (range, 3 to 21)	14	16	16	20
Usefulness (range, 3 to 21)	14	17	17	18
Therapist (range, 5 to 35)	33	29	30	34
Total score (range, 21 to 147)	112	107	119	134

Note. Higher scores indicate greater degrees of satisfaction.

unlikely that some other variable was responsible for observed behavior changes. Also, if the second baseline phase had been extended for Adam and Ann, clearer trends may have developed. One consideration is that the combined multiple baseline and reversal design contributed to the short duration of the second baseline condition, whereas use of a multiple baseline design alone would have permitted a longer baseline phase and obviated the need for an additional baseline phase. Finally, on-task behavior may have generalized more readily for these 2 subjects, and failure of the data to reflect treatment withdrawal may represent maintenance of behavior change. Further research is necessary to clarify the effects of goal setting and contingency contracting with regard to on-task behavior.

The concurrent measurement of time on-task and work accuracy merits discussion. On-task behavior is often assessed because students must be oriented to their work to engage in and complete that work (Lentz, 1988). However, measures of academic responding, such as accuracy and problems attempted, are often more strongly associated with academic achievement than is on-task behavior (Hoge & Andrews, 1987). For example, a child exhibiting a skill deficit would be unable to complete academic tasks regardless of his or her level of orientation to materials. For a child exhibiting a performance deficit, however, on-task behavior may be more closely associated with academic performance. That is, the child exhibits the requisite skills to complete the academic task at hand, but

off-task behavior competes with work completion. This raises the question of which variable(s) to target for intervention: on-task behavior, academic responding, or both (Lentz, 1988; Shapiro & Lentz, 1986). Targeting either on-task behavior or academic responding typically produces improvements in both, although academic responding is generally considered to be a more efficacious target (Hoge & Andrews, 1987; Ruggles & LeBlanc, 1985). Indeed, Maag, Reid, and DiGangi (1993) reported that self-monitoring academic outcomes was superior to monitoring on-task behavior in terms of academic productivity, accuracy, and consumer preference.

All of the subjects in this study exhibited a performance deficit in that they exhibited average academic achievement and thus should have possessed the skills necessary for homework completion. During baseline, Ann and Jenny exhibited relatively high percentages of on-task behavior, indicating that something other than this variable was contributing to their low rates of work accuracy. For these subjects, continued assessment of work accuracy alone might have been sufficient, because their on-task behavior was acceptable and there was little room for improvement (i.e., a ceiling effect). However, for Richard and Adam, the relevance of on-task behavior was less clear. Certainly, off-task behavior may have contributed to low accuracy rates, because work accuracy and on-task behavior concurrently improved with treatment implementation.

Parent responses to the HPC clearly improved for only 1 subject. Parent perceptions of problematic homework behavior did not change for the other children, despite increases in work accuracy and, to a lesser extent, time on task. In another study investigating intervention effects on homework performance, parents reported little or no change on the HPC, despite having positively evaluated the intervention (Anesko & O'Leary, 1982). Because treatment was implemented during the last 4 weeks of the school year, Anesko and O'Leary hypothesized that parents had little opportunity to practice newly acquired skills and thus could not fully evaluate the program. The current study is

similar, in that the treatment occurred during the final weeks of school.

Treatment outcome may also have been associated with children's overall behavioral functioning. Children who exhibited the greatest number of significant behavior problems, as rated by their parents and teachers, were those whose HPC scores did not improve. Prior research supports this conclusion: Anesko (1987) reported that 4 children exhibiting learning and/or behavior problems did not respond as favorably to a homework intervention as did children without those problems. Perhaps children whose parents perceive them to have more severe behavior problems are more resistant to behavior change and require more intensive or comprehensive treatment. Conversely, parents of children with behavior problems may be less likely to alter their perceptions of their children's behavior following treatment, particularly when treatment focuses on a discrete behavior like homework. In some cases, adjunctive therapy focusing on behaviors other than homework performance (e.g., compliance, self-control) may be indicated.

Consumer satisfaction with the procedures was supported by questionnaire and interview data. Parents evaluated goal setting and contingency contracting as fair and appropriate interventions for homework difficulties and expressed satisfaction with their children's progress. However, the failure of some parents' HPC scores to reflect these responses is puzzling and calls into question the social validity of the results.

One way in which to view these results is that consumer ratings of satisfaction and treatment outcome represent a second opinion rather than an actual validation (Hawkins, 1991). That is, consumer ratings are subjective and should be viewed as supplementary to objective measures of dependent variables. Thus, social validation serves to evaluate the acceptability and feasibility, rather than the efficacy, of a treatment program and as such is a desired, but certainly not sufficient, measure of treatment efficacy (Hawkins, 1991; Schwartz & Baer, 1991).

For targeting homework performance, the combined use of goal setting and contingency contract-

ing offers several positive, unique features. Specifically, these procedures provide a heuristic for completing homework and introduce increased structure into the homework routine. Dividing assignments into several small goals required parents and children to evaluate the parameters of each assignment carefully (i.e., number of problems, type of problems) as well as expectations for the child's performance. Parent feedback was delivered in a more timely and specific manner during treatment and thus may be another benefit of goal setting, because immediate and specific feedback is a potentially important factor in developing attentiveness and skills (Drabman & Lahey, 1974; Pellegrino & Goldman, 1987). Also, children were required to evaluate their own behavior during goal setting by determining whether they had achieved their goals. In this manner, children learned to monitor their own behavior, which is an important step toward self-control and is associated with increased accuracy in many curricular areas (Ballard & Glynn, 1975; Koegel, Koegel, & Ingham, 1986).

In addition, the overall tone of parent-child interactions during both homework and goal setting appeared to be positive. Anecdotally, parents and children reported that the procedures helped them remain more calm and objective than was typical. This is important when considering parents' initial complaints that homework was unpleasant and resembled a battleground.

There are a number of methodological limitations in the current study. Final treatment phases were generally brief due to the use of a combined research design and subsequent time constraints. Therefore, conclusions about the efficacy and generalizability of these procedures are limited. In addition, as a result of the design used, it is not possible to determine whether either treatment component would have been effective in isolation. Finally, the inclusion of teacher ratings of homework performance would have provided stronger evidence for the clinical significance of goal setting and contingency contracting.

The next step in the evaluation of goal setting and contingency contracting as an intervention package for homework problems would be to ex-

amine whether these procedures produce a concurrent improvement in academic achievement. The present study confirms that parent involvement in homework can be helpful, but the effects of the intervention on achievement remain to be determined. Future research investigating whether parent involvement can be faded such that children are able to complete homework independently is also needed. Parents may not be willing to implement an intervention on a long-term basis if they perceive it to be time consuming without contributing to the child's independence. In addition, research examining the degree to which homework and behavior problems coexist and whether their relation affects treatment outcome would be useful.

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