

CABAS Parent Education: Increasing Child Compliance via Parental Emission of Unflawed Commands and Contingent Consequences During Play

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Abstract

This study examined the efficacy of the parent education/training program of the Comprehensive Application of behavior Analysis to Schooling (CABAS) model (Greer, 2000) in increasing rates of child compliance. Five parents of children attending a CABAS special needs preschool received both didactic instruction and home-based in vivo training in the use of unflawed antecedent commands and contingent consequences (including verbal and physical positive reinforcement, planned ignoring, and physical follow-through) during weekly toy playing, sharing and clean up sessions with their siblings. The study incorporated a multiple probe design using five parents who started receiving parent training on different days, resulting in a variation of a delayed multiple baseline across subjects design. Results indicated that rates of child compliance increased for all five children as a function of parental expertise in emitting unflawed commands and providing contingent consequences for their children. The collateral benefits of the parent program included (a) a reported increase in the frequency and duration of independent toy playing and sibling sharing repertoires and (b) an establishing operation effect for the target student whose increased rate of compliance may have been related to parental verbal and physical positive reinforcement of sibling compliance to parental commands. The effectiveness of the CABAS parent education component was discussed in relation to the comprehensive, perpetual, and interlocking school-home contingencies inherent in the entire CABAS model.

Keywords: CABAS, Compliance, special needs children and parent training.

Greer (2002) suggests that the key to more effective schooling requires the systematic and comprehensive application of behavior analysis to schooling (CABAS) to all parties involved in the instructional contingencies, including students, teachers, supervisors, and *parents*. CABAS incorporates features of direct instruction (Engelman & Carnine, 1982), precision teaching (Lindsley, 1990), the personalized system of instruction (PSI) (Keller, 1968), programmed instruction (Skinner, 1968), the consulting behavior analyst model (Greer, 1989), and an organizational behavior management approach to the supervision and administration of schooling (Reid & Shoemaker, 1984).

Several studies have demonstrated the effectiveness of the CABAS package in improving the performance of students, teachers, and supervisors in the school environment (Selinske, Greer, & Lodhi, 1991; Greer, McCorkle, & Williams, 1989; Ingham & Greer, 1992; Lamm & Greer, 1991). The efficacy of the parent education component of the CABAS package in the home environment has not yet been comprehensively and systematically studied. This line of research is imperative in light of the fact that "any changes brought about in the school environment are limited in their ability to *prevent* mental health problems. A complete attack must include changes in the *home* environment where the child spends most...of his early years" (Hawkins, 1972, p. 30). Given the importance of effective parenting in the *early* prevention of psychological and physical child abuse (Altepeter & Walker, 1992); juvenile delinquency (Wells & Forehand, 1985), special education placement, mental health and academic learning problems, and Ritalin usage, it is necessary to investigate and establish functional relationships between specific parenting (antecedent and postcedent) behaviors and child compliant responses.

Forehand (1977) noted that child non-compliance with parental commands and instructions is reported as the most frequent child problem in families. Non-compliant children have mothers who typically emit vague or flawed commands (Barkley, 1987; Forehand & McMahan, 1981) and provide fewer contingent consequences for their child's non-compliant behaviors (Meharg & Lipsker, 1992). The efficacy of instructing parents on how to give clear or unflawed commands and to use contingent praise, planned ignoring, and physical guidance to increase child compliance is well supported by the behavioral parent training literature (Graziano & Diamant, 1992).

Although there are numerous comprehensive behavioral parent training models in the form of commercially packaged programs (Becker, 1971; Patterson, 1975; Hall, 1981; Dangel & Polster, 1984), CABAS is the only model known to this experimenter which applies behavior analysis in a comprehensive manner to

everyone in the child's environment including teachers, supervisors, parents, peers, and siblings. Therefore, CABAS provides continuity of antecedent and postcedent contingencies both in the child's classroom and home environments. In other words, children who are educated and managed by the CABAS model are exposed to similar antecedent and postcedent contingencies by teachers as well as their parents. The CABAS parent training/education program teaches children to comply with parental unflawed commands during reinforcing play sessions while at the same time conditioning longer periods of independent toy playing which in turn produces more compliant behaviors. Additionally, CABAS utilizes siblings during play and clean-up sessions so they both receive parental verbal and physical positive reinforcement for compliance at the same time that parents are applying planned ignoring (during play and clean-up sessions) or physical guidance (during clean-up sessions only) for the target child's non-compliance. This study examines the efficacy of the CABAS parent education component in increasing child compliance rates in five different families.

Method

Subjects

Five parents (Parents B, H, M, F, and O) ranging in age from 30 to 38 with varying socioeconomic and educational backgrounds voluntarily enrolled in a CABAS Parent Education/Training Program affiliated with a CABAS preschool for special needs children. All five parents were concerned about their sons' noncompliant behaviors and, therefore, participated in the program in order to acquire the skills necessary to teach their sons to follow parental instructions and commands. All five children were four year olds who had been placed in a CABAS preschool to address language, social behavior, and learning problems. Their teachers had also described these five children as being noncompliant when they entered the school.

Setting

The CABAS program was conducted in the children's home for four of the families. Parent F received training in the conference room within the school building. The parent educator/experimenter met each parent (except for Parent H) once a week for approximately an hour session. Parent H received two sessions per week of parent training because of their son's intensive behavioral needs. All training sessions involved a play and sharing period with a sibling followed by a clean-up phase where children were instructed to put away their toys.

Definition of Variables and Behaviors

The independent variable consisted of the CABAS Parent Education/Training package which included (a) formal instruction in behavior analytic principles (e.g., elementary terminology) and (b) parent trainer's in vivo modeling, correction, prompting/cueing, and reinforcement of parental use of antecedent commands and contingent consequences for their child's compliant behaviors.

The dependent variables were (a) parental rates of contingent and noncontingent consequences, (b) parental rates of flawed and unflawed antecedent commands, and (c) rates of child compliance.

The definitions below were based on those provided by Williams (1992). A *contingent consequence* consisted of any discrete verbal or physical (e.g., a hug) positive response which the parent delivered to the child for beginning to comply within five seconds of a command. Any positive correction or prompting (e.g., pointing while saying, "It goes there."), modeling (e.g., demonstrating how to place a toy gently in the toy box), physical guidance or follow-through (i.e., fully physically assisting the child to pick a toy after the command was given and not followed), and planned ignoring procedure that was contingently emitted by a parent was recorded as a contingent consequence.

Non-contingent consequence consisted of any verbal disapproval, physical punishment, absence of correction, failure to respond appropriately to the child for non-compliance, the absence of positive reinforcement for compliance, and any verbal or physical reinforcement for non-compliance to both flawed or unflawed commands.

A *command* was counted as *unflawed* when it met the following criteria: (a) linguistically it consisted of a phrase with an observable, active, and an imperative verb with a specific object or an adverb, (b) the above phrase was not followed by a lengthy explanation, and (c) it was spoken in a normal volume of voice.

A *flawed command* included any command which was not understandable to the experimenter including (a) an omission of an observable, active, and imperative verb with a specific object or an adverb, (b) a rhetorical question, (c) an unflawed command confounded by a lengthy explanation, (d) a statement or question which left a particular response in doubt (e.g., "Stop doing that!"), (e) words such as "please" or "okay?" at the end of a command, and (f) any sentence with a rising inflection at the end of the statement making it a question.

Child compliance was defined as any appropriate behavior (e.g., touching sister gently, walking to the toy box) emitted by the child within five seconds of the parent's flawed or unflawed command including the child's correct or incorrect vocal responses to parental questions.

Design

The experimenter utilized a multiple probe design resulting in a variation of a single-subject delayed multiple baselines design across subjects involving five students from five different families.

Procedure and Data Collection

During the baseline (probe) phase, the experimenter videotaped parent-child interactions and then recorded (a) rate per minute of parental emission of antecedent flawed and unflawed commands, (b) rate of parental emission of contingent and non-contingent consequences, and (c) rates of child compliance to parental antecedent commands.

CABAS parent education was implemented on different days for each family. Each parent was given learning modules consisting of (a) reading assignments and completing quizzes on topics such as providing unflawed commands, verbal praise, planned ignoring, and physical guidance and (b) in vivo practice in emitting unflawed commands and appropriately using verbal praise, planned ignoring, and physical follow-through or guidance during play time or clean up activities.

The experimenter taught these skills to parents during the intervention phase by using modeling, shaping, correction, prompting, role-playing, and positive reinforcement procedures during and/or after (e.g., videotaped playback/feedback) each training session. The experimenter's prompting and reinforcement of parental use of antecedent unflawed commands and contingent consequences (for child compliant behaviors) were gradually faded during the intervention. The experimenter continued to record (a) rate per minute of parental use of antecedent flawed and unflawed commands, (b) rate per minute of parental use of contingent and non-contingent

consequents, and (c) rate per minute of child compliance throughout the treatment phase.

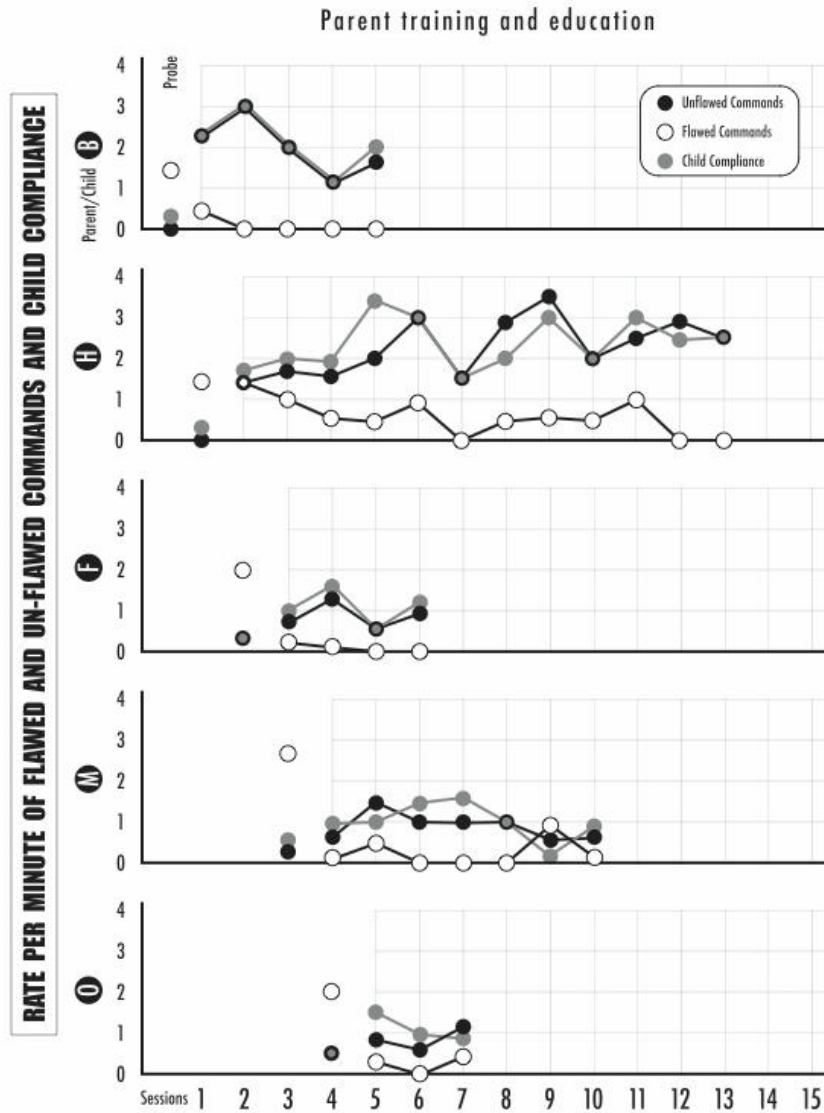


Figure 1- The rate/minute of parent flawed and unflawed commands compared to the rate of child compliance/session for parent child dyads B,H,F,M, and O during probe phase.

Results

Parent B increased child compliant behaviors from a baseline rate of near zero to an average rate of 2 compliant behaviors per minute during treatment. Parental emission of flawed commands decreased from a baseline rate of 1 per minute to zero during treatment. Unflawed commands increased from a baseline rate of zero per minute to an average rate of 1.5 per minute during treatment. Parental emission of contingent consequents increased from zero to an average rate of 2 per minute. Non-contingent consequents decreased from a baseline rate of 1.5 to zero during the intervention phase.

Parent H increased child compliant behaviors from zero during baseline to an average rate of 2.5 compliant behaviors per minute. Parental use of unflawed commands increased from zero during baseline to an average rate

of 2.5 unflawed commands per minute during treatment. Flawed commands decreased from a rate of 2.5 during baseline to near zero during treatment. Contingent consequences increased from once every two minutes to an average of 5 contingent consequences every two minutes. Non-contingent consequences decreased from one per two minutes during baseline to zero per minute during intervention.

Parent M increased child compliance from a baseline rate of near zero to an average rate of 1 per minute during treatment sessions. Parental emission of unflawed commands increased from a baseline rate of near zero per minute to an average of 1 per minute. Parental use of flawed commands decreased from about 3 per minute to near zero. Contingent consequences increased from near zero per minute to an average of 1 per minute whereas non-contingent consequences decreased from about 3.5 per minute to an average of 1 per two minutes.

Parent F increased compliant behaviors from near zero during baseline to an average rate of 1 per minute. Parental emission of flawed commands decreased from a baseline rate of 2 per minute to near zero during treatment. Flawless commands increased from near zero to an average rate of 1 per minute. Parental use of contingent consequences increased from near zero to slightly over 1 per minute whereas the emission of non-contingent consequences decreased from near 1 per minute to zero during treatment.

Parent O increased the rate of child compliance from near zero during baseline to an average rate of 1 per minute during intervention. The use of flawless commands increased from zero to near 1 per minute whereas flawed commands decreased from a rate of 2 per minute during baseline to near zero per minute. Parental emission of contingent consequences increased from zero to slightly over 1 per minute whereas the use of non-contingent consequences decreased from 2 per two minutes during baseline to 1 per two minutes during intervention.

FIGURE 2, NEXT PAGE

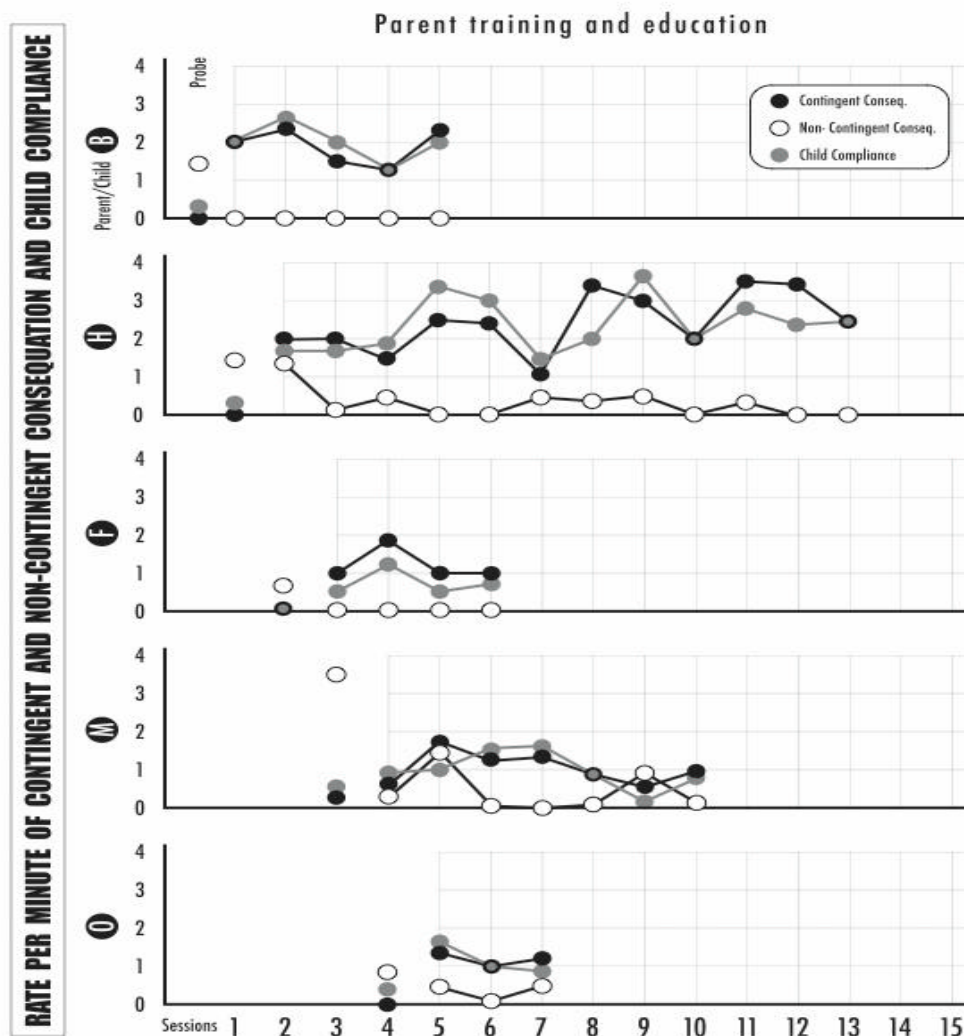


Figure 2. The rate/minute of parent contingent and noncontingent consequences compared to the rate/minute of child compliance/session for parent child dyads B,H, F, M and O during the probe phase.

Discussion

There are a number of explanations for the increase in the rate per minute of child compliant behaviors in this study aside from the documented efficacy of parental use of (a) verbal antecedents (i.e., unflawed commands) and (b) contingent consequences (including verbal and physical reinforcement, planned ignoring, and physical follow-through) (Merrell, 1987; Meharg & Lipsker, 1992; Graziano & Diament, 1992). The comprehensive nature of CABAS continuously monitors and controls antecedent presentations and consequences by teachers as well as by parents thereby providing continuity of behavior management principles in both home and school settings on a sustained basis (Greer, 1991; Greer, 1992). The CABAS parent education package is also comprehensive in its diversity of behavior analytic content as well as variety of instructional methods (including didactic instruction, videotaped presentations, and in vivo modeling, shaping, correction, role-playing, and feedback) which incorporate features of precision teaching, PSI, programmed instruction, direct instruction, the consulting behavior analyst model, and an organizational behavior management approach to the supervision of parent trainers/educators.

CABAS parent education teaches (conditions) children to comply to parental unflawed commands during toy playing and sharing sessions (e.g., "Please hand your sister this car.") thereby increasing the probability of future child compliance to parental commands in non-play settings. These play and sharing situations also provided an opportunity for parents to practice using verbal and physical reinforcement and planned ignoring while clean-up situations allowed them to practice the very difficult skill of physical guidance or physically following through to assure compliance to a parental command (e.g., "Please put this car in the toy box."). Although separate data were not collected on the duration and frequency of sibling sharing and independent toy playing in the absence of the parent educator, all five parents reported significant increases in their child's ability to share and play on their own for longer periods of time possibly as a function of the frequent verbal and physical reinforcement provided by parents to both the target child and sibling for toy playing and emitting prosocial behaviors during toy playing sessions (Greer et al., 1985). The establishing operation effect (Keller & Schoenfeld, 1950), created by the verbal and physical reinforcement of a sibling for compliance to parental commands (while at the same time systematically ignoring the target child for non-compliance), was an extremely powerful technique for increasing child compliance.

The results achieved by the sole techniques of unflawed commands, verbal and physical reinforcement, planned ignoring, and physical follow-through are noteworthy because parents did not have to rely on dispensing tangible or edible reinforcers nor were they taught cumbersome and time-consuming programs such as time out and token economy during the time of this study. The success of the CABAS parent training/education program is remarkable considering the fact that the experimenter as parent educator spent an average of only one hour per week with each of the five families. Considering the finding that "...the more Teacher Performance Rate/Accuracy observations done by supervisors, the more accurate were teachers and this led, in turn, to more correct responding from students" (Greer, 2002), one wonders how many more three-term contingency trials or learn units (Albers & Greer, 1991) teachers in CABAS classrooms receive from their supervisors than parents receive from parent educators on an average week.

With the advance of video technology, the CABAS parent education program may consider the possibility of installing on-going home videotaping of parent-child interactions in the absence of parent educators in the home in order to (a) increase correct antecedent and postcedent (i.e., learn unit) presentations for parents during videotaped playback/feedback training sessions and (b) solve the long-standing problem of the reliability and validity of parent data.

The CABAS parent education program can be improved by expediting the feedback given to parents during in vivo training sessions via bug-in-the-ear electronic devices. The current CABAS parent training practice of (a) waiting until the end of each session or observing videotaped playbacks do not provide the immediate feedback crucial to skill acquisition and (b) giving verbal feedback to parents in the presence of their young children during in vivo training may undermine parental authority and efficacy.

The limited baseline data obtained prior to the implementation of the CABAS parent program was a major weakness of this study because of ethical (i.e., parental right to prompt treatment) and practical (i.e., trainer time constraint) considerations. The lack of reliability data during non-videotaped treatment sessions constituted another major shortcoming.

Careful analysis of the data revealed that rates of child non-compliance increased during periods when (a) the CABAS school was not in session, (b) parent trainers did not visit homes, and (c) parents cancelled parent training sessions. The critical issue of long-term maintenance and generalization of parenting skills (Webster-Stratton, 1990; Powers, Singer, Stevens, & Sowers, 1992) may be addressed by the CABAS parent education program via the use of a bug-in-the-ear immediate parental feedback system, increasing learn unit opportunities for parents by trainers, and *continuous* videotaping of in vivo parent-child interactions (when the trainer is not present in the home) during baseline, treatment with prompting, treatment without prompting, and post-treatment follow-up phases.

As noted earlier in this paper, there are several excellent comprehensive commercially available behavioral parent training programs. The CABAS model, however, is different because it applies behavior analysis on an on-

going school-wide as well as home-wide basis continuously monitoring the responses of all of the players in a child's life including his parents, teachers, school administrators, and parent trainers. CABAS exemplifies the type of educational research advocated by Slavin (1990) and Fuchs and Fuchs (1990) which helps develop and test *systemic* school-based *models* offering robust solutions instead of studying discrete, isolated, or decontextualized *variables*.

Childhood non-compliance and oppositional behaviors are generally considered to be (a) among the most commonly seen problems referred to child guidance clinics (Meharg & Lipsker, 1991) and (b) precursors to childhood aggression, psychological and physical child abuse, juvenile delinquency, special education placement in classes for the "emotionally disturbed," Ritalin usage, and mental health problems. In light of the increase in the rates of child compliance reported in the present CABAS home study along with the encouraging results of previous CABAS school studies (Greer, 2002; Selinske, Greer, & Lodhi, 1991; Greer, McCorkle, & Williams, 1989; Ingham & Greer, 1992; Lamm & Greer, 1991), the entire CABAS model *including* its parent education component should continue to be replicated in various special and regular schools and communities across this country in spite of a widely cited educational psychologist who insists that the effect of applied behavior analysis "in the schools is limited *and always will be*" (Brophy, 1983, p. 12). This experimenter agrees with Brophy only in the sense that since children spend most of their time with their parents, applied behavior analysis *must* also be systematically, comprehensively, and continuously applied at home as well as in school so that its effects will not be limited. The data reported herein provide a beam of optimism that applied behavior analysis is not a piecemeal approach (Brophy, 1983) but rather a complex and pervasive one requiring sophisticated practitioners to carefully arrange and measure the antecedents and postcedents for children both in their school and *home* environments.

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