# A Behavioral Approach to Training Day Care Workers

*Jonathan W. Ivy & Kimberly A. Schreck*

## Abstract

Day care workers are not only responsible for meeting the needs of the children they care for but creating an enriched and friendly environment as well. Few daycare centers require any specific in-service training for their staff members. When provided, training typically occurs as a didactic workshop. For this study a multiple baseline design across participants was used to evaluate the effects of didactic training, goal setting, and feedback on day care staff members'(n=7) use of "quality" interactions with the children in their care. The results showed that although didactic training marginally increased the level of interactions, the day care workers' interactions were highly variable and susceptible to decay over time. For the majority of the participants individualized goal setting and feedback produced higher, more stable levels of interactions.
Keywords: Day care, adult-child interaction, staff training

Parents expect day care workers to engage in a wide range of child care behaviors. Day care workers must perform a variety of skills effortlessly and accurately, despite lack of formalized training. In quality day care centers, staff must provide general supervision and behavior management, care for children's daily health needs (e.g., diapering, feeding, etc.), provide safe environments, manage group behavior, teach language and preschool educational skills, and interact through play with the child.

Organizational Behavior Management (OBM) has provided research supporting the effectiveness of methods for training some of these skills in other settings, such as a) combinations of didactic staff training goal setting and performance feedback for safety (Alavorius, & Sulzer-Azaroff, 1986; Chhokar, & Wallin, 1984; Grindle, Dickinson, & Boettcher, 2000; Hickerman, & Geller, 2003; Reber, Wallin, & Chhokar, 1990; Reber, & Wallin, 1984; Sulzer-Azaroff, Loafman, Merante, & Hlavacek, 1990); b) increasing interactions and behavior support plans through performance feedback (Brown, & Sulzer-Azaroff, 1994; Codding, Feinberg, Dunn, & Pace, 2005; Kelly, Wilder, Rodriguez, & Wine, 2005). Unfortunately, most day care centers do not implement these methods when training their staff. In fact, if training is provided, it typically takes the form of a didactic workshop sessions.

The purpose of this study was to evaluate the commonly used and possibly cost-effective didactic training model for teaching day care workers. OBM training techniques, didactic training, goalsetting, and performance feedback, were used to increase the level of verbal praise, individualized attention (i.e., "Hank, you are holding a red truck") and appropriate commands provided to students by day care staff.

## Method

### *Participants*

Direct care workers were recruited through a non-profit day care. Participants received an informed consent document stating the general purpose of the study and a letter of invitation requesting their participation in the study. Seven day care staff met the following criteria to participate in the study: a) informed consent was signed and returned; b) primary job responsibility was the direct-care of children; and c) full-time employment hours occurred in the AM hours (8:00 A.M – 12:00 P.M). Five

participants completed the entire study; two participants left the center for personal reasons, providing only partial data.

Table 1 Demographic Information of Teachers

| Participant | Age | Years of Experience | Education Level |
|---|---|---|---|
| 1 | 21 | 1 | Some College |
| 2 | 21 | 1 | Some College |
| 3 | 23 | 4 | Not Available |
| 4 | 21 | 2 | Some College |
| 5 | 36 | 9 | Not Available |
| 6 | 56 | 2 | Not Available |
| 7 | 52 | 13 | Some College |

*Day Care Settings*

All experimental conditions were conducted in the primary classrooms, gymnasium, outdoor playground, and all-purpose room of a non-profit day care.  Primary classrooms were furnished with tables, chairs, toys, and any age-required furnishings such as cribs, changing tables, and high chairs.  The sizes of the primary classrooms were 497 sq. ft. (3-12 month old room), 495 sq. ft. (12-24 month old room), 663 sq. ft. (2-3 years old room), 598 sq. ft. (3-4 years old room), 1,162 sq. ft., and 814 sq (6 years old and older room).

The outdoor playground was a fenced in 1,830 sq. ft. area equipped with two small slides, small riding vehicles, lawn furniture, a small picnic table, a small jungle gym, and outdoor toys (e.g., balls, trucks, and plastic food). The gymnasium was a full sized basketball court with 2 basketball hoops. The gymnasium was used when the weather prevented outside play.  The all-purpose room contained several bean bag chairs, couches, tables, screen, and overhead projector.

*Target Behaviors*

The targeted interactions were derived from the key components associated with quality adult-child interactions within the Child and Parent Game (McMahon & Forehand, 1983; 2003).  These quality interactions were developed to decrease coercive interaction patterns by increasing attention and verbal praise and by decreasing indirect commands.  Although The Child and Parent game were developed for children who engaged in problem behaviors, the following specialized forms of interactions can be generalized to an appropriate interaction style for day care workers:

*Attends.* An *attend* (i.e., "a high-rate form of positive attention in which the parent provides an ongoing verbal description of the child's activity", [McMahon & Forehand, 2003, p. 111]) was scored when day care staff were within 3 feet of a child and verbally imitated or specifically described the child's observable play behavior; for example, "Tom you put the red block on top of the blue block and then knocked them all down".  Each verbal description of child behavior was scored separately.  For example, in the statement "You put the corn in the pot, now your stirring the pot with a spoon", two attends would be scored, one for the staff description of both putting the corn in the pot and another for stirring the pot with a spoon.

*Verbal praise. Verbal praise* (i.e., "praise statements that specifically describe the particular child behavior", [McMahon & Forehand, 2003, p. 115]) was scored as a statement of praise such as, "good

job", "way to go", "you're super", and etc, used immediately before or after an attend (i.e., within 3 seconds) such as, "Greg, super job you tied your shoe laces."

*Direct commands.* A *direct command* (i.e., observable discrete instructions, [McMahon & Forehand, 2003]) was scored when day care staff were within 3 feet of the child, said the child's name, and gave a single observable behavior for the child to do such as, "Peggy, pick up the purple ball."

*Indirect command*. An *indirect command* (i.e., unclear and ambiguous instruction, [McMahon & Forehand, 2003]) was scored when day care staff was greater than 3 feet from the child when requesting a verbal and/or motoric response or gave a command with any of the following characteristics:

1. A question command (e.g. "Do you want to clean up?")
2. Vague command ("Be good")
3. Chain command (e.g. "Pick up your shoe, your hat, clean your room, and then do the dishes")
4. "Let's" command (e.g. "Let's line up")
5. Rational command (e.g. "Keep your hands to yourself, when you touch other people you hurt their feelings")
6. Global command (e.g. "Clean up the toys everybody").

All requests for verbal and/or motoric behavior that did not meet the criteria for a direct command were scored as indirect commands.

All target vocalizations were measured using event recording. Data sheets contained labeled column headings in which each respective target response was tallied. Rate per minute was calculated by dividing the number of vocalizations per target by the session length.

*Experimental Conditions*

A multiple baseline design across participants was used to examine the effects of training, goal setting, and feedback on target vocalizations.

*Baseline.* Data were collected by the first author after a one week habituation period, in which the primary observer spent 5-10 minutes per participant in each room for a period of a week with a clip board and stopwatch do reduce possible reactivity effects.

Data collection was conducted during scheduled free playtime when direct-care staff could interact with the children without need to instruct the entire group of children in an activity. Sessions ended once free time was over, typically signaled by day care staff instructing children to put toys away, or until 5-10 minutes of data collection. Data collection paused if day care staff left the room or transitioned the children from one area to another. Data collection was then resumed when staff returned to the room and free playtime continued. Data collection sessions occurred 1-5 times per day for each participant.

*Didactic Training.* Data collection sessions in the didactic phase were identical to that described above except at the start of the phase direct-care staff attended a 60-minute training session that was typical to the types of in-service/didactic training received in day care and educational settings. The training consisted of a) didactic 13-slide PowerPoint presentation illustrating attends, verbal praise, and commands (derived from McMahon & Forehand, 1983; 2003), b) role-playing of skills described in the presentation, and c) a question and answer session. Although not commonly implemented in in-service/didactic trainings, staff engaged in one role playing session to practice and simulate a typical play situation in their classrooms. Direct-care staff practiced the skills taught in the didactic training during simulated free time play situations in which one staff played the child and one the direct care staff. This

was done until all staff had at least one turn at each role. The primary and secondary author provided performance feedback to all direct care staff.

*Individualized goal setting and feedback probes.*

Individualized goal setting and feedback probes were conducted 4 weeks and 5 weeks after all participants finished the training condition. Sessions length and situation were identical to that described in baseline except the primary author set a behavioral goal for attends, verbal praise, and commands for each direct-care staff. This goal was calculated by determining the mean for attends and verbal praise during training phase and setting individualized goals at 75% above the mean for that day care worker. The goal for direct commands was set by calculating the mean of indirect commands and assigning a direct command goal lower than the level of indirect commands, based on each individual's data, to create the final behavioral goal. The goal for indirect commands was set using the identical method used for direct commands.

Prior to each individualized goal setting and feedback data collection probe, the primary author provided individualized graphical and verbal feedback of the staff member's previous performance and progress on the target behaviors toward the goals. The primary author verbally praised staff who met the behavioral goals, and provided a brief review of the training for any participants who did not meet the behavioral goal.

Results

Figure 1 and 2 presents the rate of verbal praise and attends for all participants. The rate of indirect and direct commands for all participants is presented in Figure 3 and 4.

*Participant 1.* During baseline observations, rate per minute of attends and verbal praise remained stable at near zero levels ($M = 0.45$). Following a 60-minute training session, rate per minute of attends and verbal praise increased ($M = 1.25$) but remained highly variable throughout the phase. Individualized goal setting and feedback immediately increased the rate of attends and verbal praise ($M = 3.9$).

The rate of direct commands remained stable at near zero levels throughout baseline ($M = 0.22$), training ($M = 0.12$), and only increased slightly during individualized goal setting and feedback ($M = 0.65$).

Indirect command rates where highly variable throughout baseline ($M = 2.09$), training ($M = 1.20$), and individualized goal setting and feedback ($M = 1.30$) phases. Levels of indirect commands decreased modestly following the training phase.

*Participant 2.* During baseline conditions, rates of attends and verbal praise where stable ($M = 0.68$). After the 60-minute training, rates of attends and verbal praise immediately increased in level ($M = 2.02$). Although attends and verbal praise increased in frequency above free operant level following training, response rates gradually decreased for 5 consecutive sessions. The implementation of individualized goal setting and feedback drastically increased the rate of attends and verbal praise ($M = 4.43$).

The rate of direct commands remained stable during baseline sessions ($M = 0.63$). Training was effective at decreasing the rate of direct commands, to near zero levels ($M = 0.11$). Only with individualized goal setting and feedback did rates of direct commands ($M = 0.73$) exceed indirect command rates.

During baseline sessions rates of indirect commands where highly variable ($M = 3.18$). Following the 60‑minute training, rates of indirect commands decreased and became more stable ($M = 1.89$). Individualized goal setting and feedback was effective at decreasing the rate of indirect commands ($M = .367$) below direct commands.

*Participant 3.* During baseline sessions rates of attends and verbal praise remained low and steady ($M = .28$). Following the didactic training, rates of attends and verbal praise immediately increased ($M = 2.86$). During the implementation of individualized goal setting and feedback the rates of attends and verbal praise immediately increased ($M = 4.87$).

The rate of direct commands was stable at near zero levels throughout baseline ($M = 0.18$), training ($M = 0.0$), and individualized goal setting and feedback ($M = .25$) sessions.

A gradual increasing trend was evident during baseline sessions for indirect commands ($M = 4.01$). Training was effecting at immediate decreasing the rates of indirect commands throughout training ($M = 0.40$) and individualized goal setting and feedback ($M = 0.62$) sessions.

*Participant 4.* Participant 4 had to drop out of the study due to change in scheduled work hours. Consequently, results only illustrate rates of behavior change after training without goal setting and performance feedback. The rate of attends and verbal praise remained stable during baseline sessions ($M = .792$). Following training the rate of attends and verbal praise immediately increased but was highly variable ($M = 1.87$).

The rate of direct commands remained stable at low levels during baseline ($M = 0.43$) and near zero levels for training ($M = 0.06$) sessions.

Indirect commands were highly variable throughout baseline sessions ($M = 3.2$). Training immediately decreased the level of indirect commands ($M = 1.26$). Near the end of the training sessions, a rapidly increasing trend was evident in rates of indirect commands.

*Participant 5.* Participant 5 dropped out of the study following the initiation of the training phase due to occupational relocation. During baseline sessions the rate of attends and verbal praise remained stable at near zero levels ($M = 0.47$). The rate of attends and verbal praise immediately increased following a 60-minute staff training ($M = 3.16$).

The rate of direct commands during baseline ($M = 0.40$) and training ($M = 0.06$) sessions remained stable at near zero levels.

During baseline sessions, the rate of indirect commands was highly variable ($M = 3.95$). After a 60-minute training the rate of indirect commands immediately decreased ($M = 1.63$).

*Participant 6.* The rate of attends and verbal praise during baseline session was stable at near zero levels ($M = 0.03$). The rate of attends and verbal praise immediately increased following a 60-minute training but was highly variable ($M = 1.13$). Individualized goal setting and feedback resulted in more stable rates of attends and verbal praise ($M = 1.60$).

The rate of direct commands remained stable at near zero levels throughout baseline ($M = 0.13$) and training ($M = 0.20$) sessions. Following individualized goal setting and feedback the rate of direct commands immediately increased ($M = 1.20$).

During baseline sessions the rate of indirect commands was highly variable ($M = 2.92$). Following a 60-minute training the rate of indirect commands immediately decreased ($M = 1.73$). Individualized goal setting and feedback increased the rate of indirect commands slightly ($M = 2.10$).

*Participant 7.* During baseline session the rate of attends and verbal praise varied slightly but remained low ($M = 0.129$). Following a 60-minute training attends and verbal praise immediately increased in rate but remained low ($M = .655$). Individualized goal setting and feedback was effective at immediately increasing the rate of attends and verbal praise ($M = 1.40$).

The rate of direct commands remained stable at near zero levels throughout baseline ($M = 0.18$), training ($M = 0.0$), and individualized goal setting and feedback ($M = 0.20$).

An increasing trend was evident in the rate of indirect commands during baseline sessions ($M = 2.60$). Following a 60-minute training the rate of indirect commands remained stable ($M = 2.50$). The rate of indirect commands immediately decreased following individualized goal setting and feedback ($M = 1.10$).
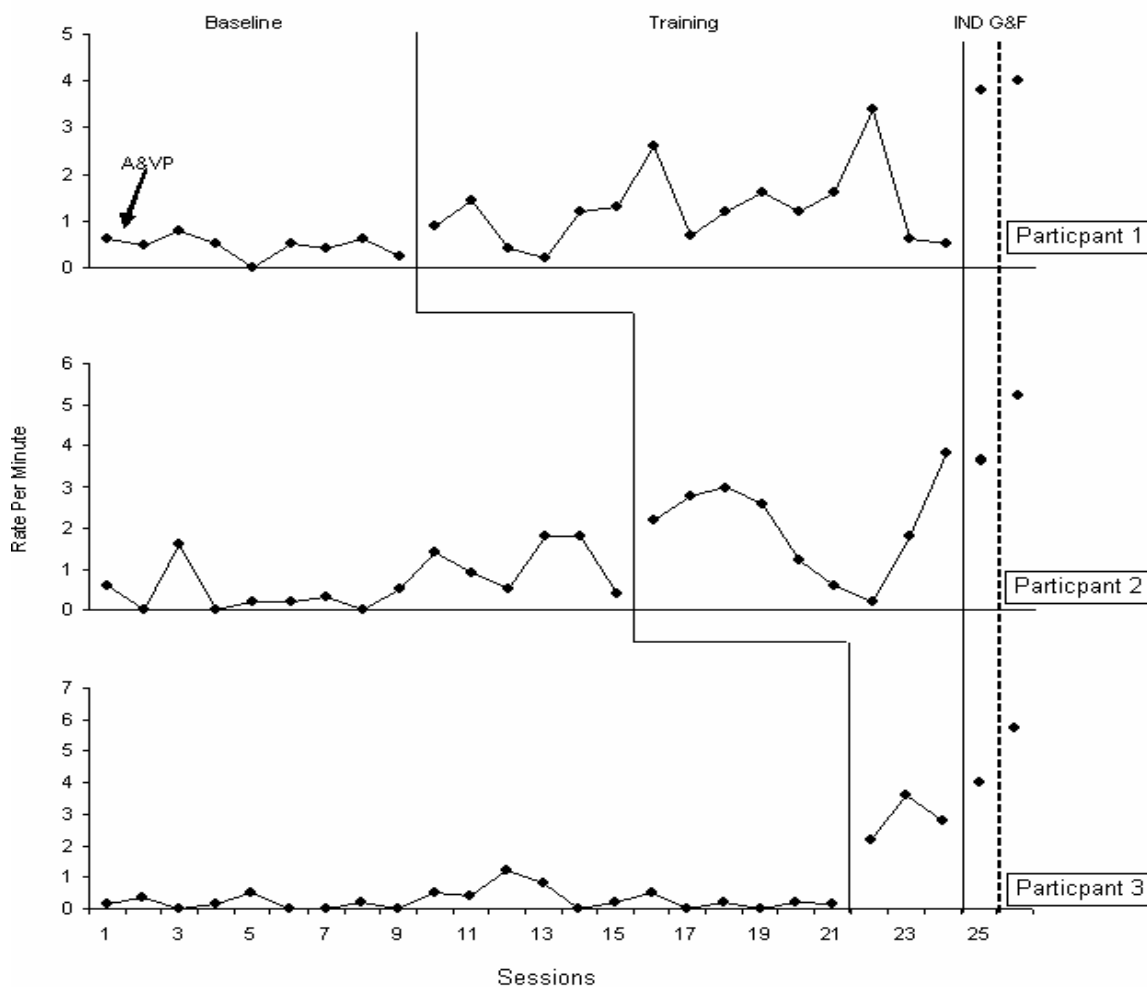


*Figure 1.* Rate per minute of attends (A) and verbal praise (VP) during baseline, training, and individualized goal setting & feedback (IND G&F) sessions for participants 1-3.
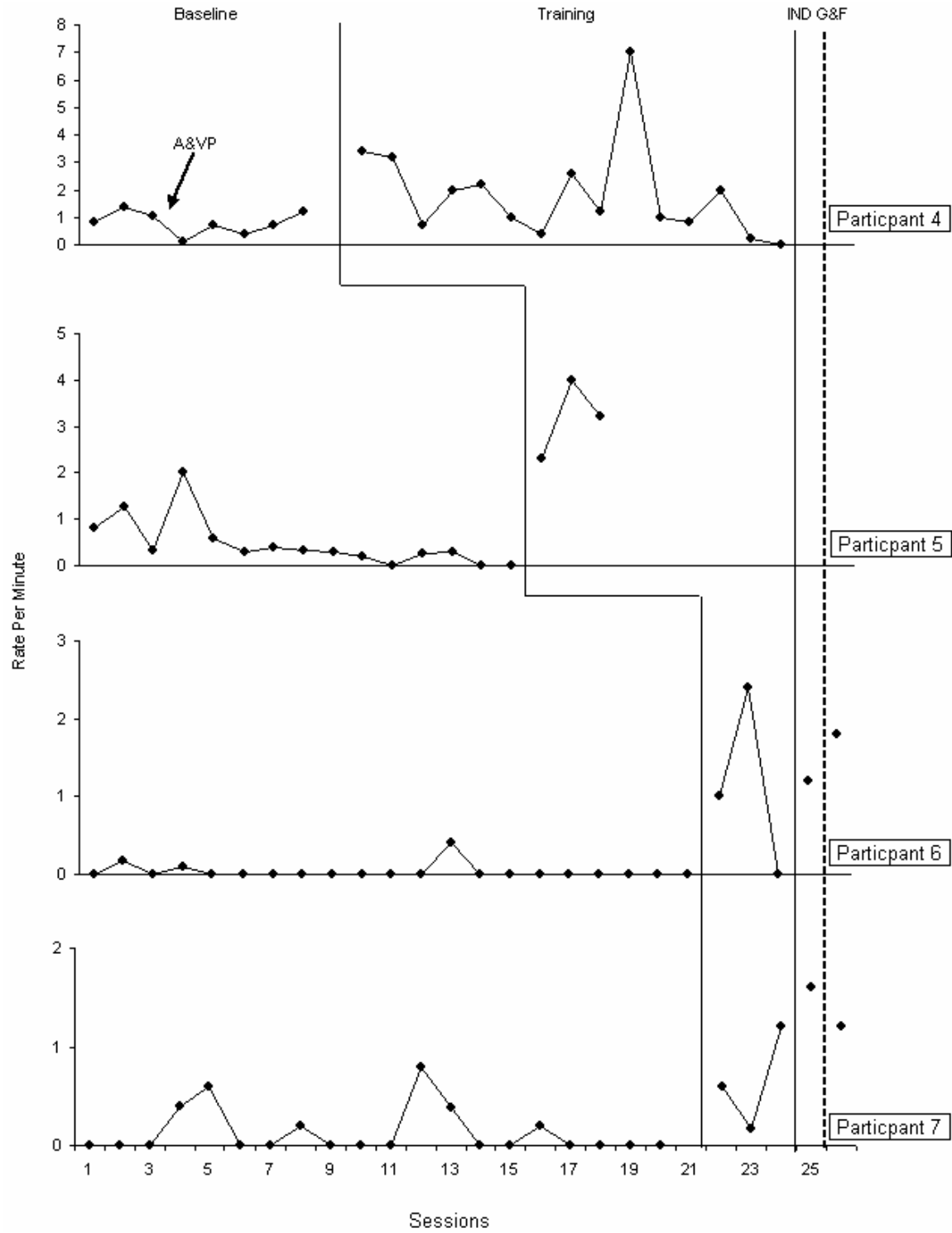
*Figure 2.* Rate per minute of attends (A) and verbal praise (VP) during baseline, training, and individualized goal setting & feedback (IND G&F) sessions for participants 4-7.
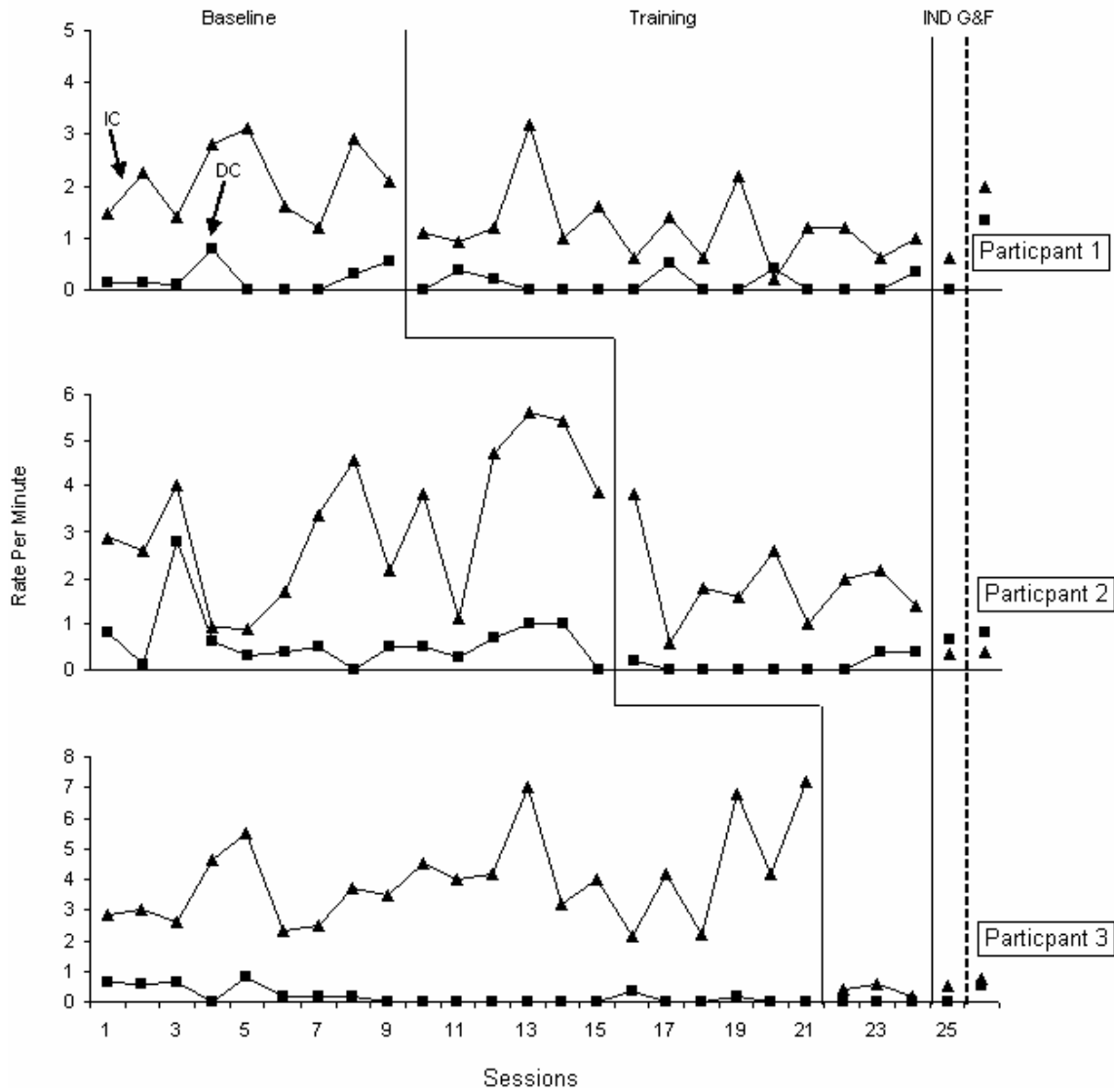
*Figure 3.* Rate per minute of direct (DC) and indirect commands (IC) during baseline, training, and individualized goal setting & feedback (IND G&F) sessions for participants 1-3.
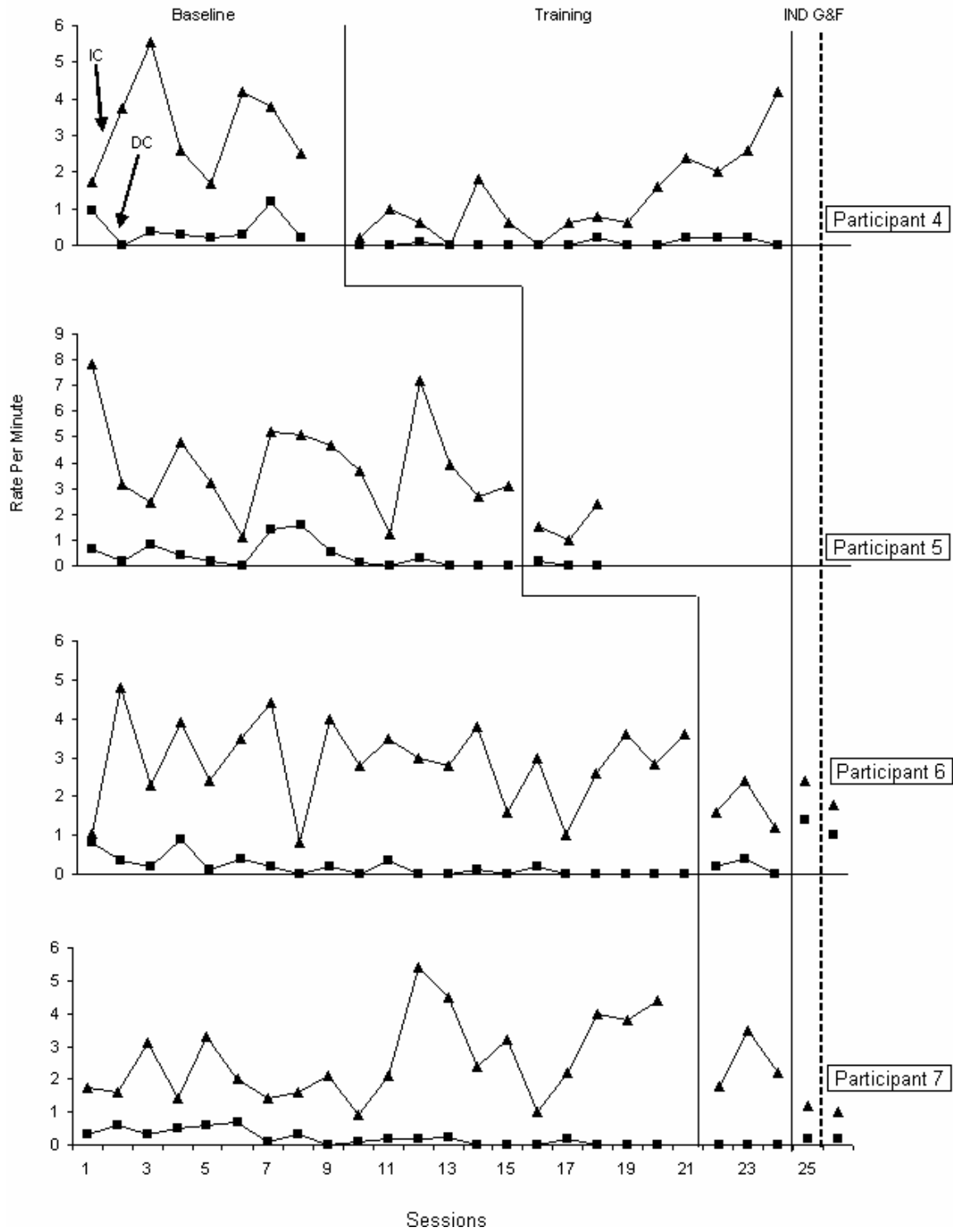
*Figure 4.* Rate per minute of direct (DC) and indirect commands (IC) during baseline, training, and individualized goal setting & feedback (IND G&F) sessions for participants 4-7.

Discussion

The present study investigated the utility of training, individualized goal setting, and direct performance feedback, to change the rate of attention, verbal praise, and appropriate commands of day care workers. The results suggested that in-service/didactic training was minimally effective at teaching new behaviors. The didactic training resulted in nominally increased rates of attends and verbal praise, and decreased rates of direct and indirect commands. Without natural contingencies to reinforce appropriate adult-child interactions, the effects of training were transitory. This was evident in the high variability of target vocalizations observed following the training.

The highest rate of attends and verbal praise for the majority of the participants was obtained under the individualized goal setting and feedback conditions. The results suggested that goal setting and feedback were effective at not only immediately increasing the rate of attends and verbal praise above levels observed directly after the didactic training, but also in maintaining the rates of attends from week to week during probes. Rates of inappropriate commands were also influenced more directly by the use of goal setting and feedback. The gap between the rate of indirect and direct commands narrowed during individualized goal setting and feedback across most participants.

These results indicated that the typical methods of requiring teachers to attend didactic workshops did not directly relate to a generalization of the skills to the teachers' classrooms. Even with the addition of a role-playing practice session during the training, teachers only minimally implemented the instructed techniques. However, when over time goal setting and graphical feedback (with no additional training on techniques) were provided for the teachers, their use of the instructed techniques were observed more frequently than immediately after the didactic training. This phenomenon may indicate that the teachers learned the instructed techniques during the didactic training; however, they did not use the techniques.

Although the study indicated that the combination of training, goal setting, and performance feedback were effective at increasing appropriate staff-child interactions in a day care setting, several limitations to the study were worth noting. For example, the study's failure to show an increase in the use of direct commands over indirect commands following training maybe explained as a byproduct of discussions during training. During the training sessions, the authors suggested that direct commands should be reserved only for situations in which a child must perform a specific behavior. Situations in which a specific behavior must be performed could be subjectively interpreted by the participants.

The absence of inter-observer reliability (IOR) provides another significant limitation of the current study. Due to environmental limitations in the day care setting and guidelines set by the board of human regulatory compliance, the use of IOR data collection methods such as, videotape, audiotape, and independent observers, was prohibited. A possible solution for future researchers would be to recruit and train individuals working in the day care setting to collect IOR data. This would not only eliminate the ethical concern of unknown individuals entering the day care setting, but also provide a possible naturalistic reinforcer for the use of the techniques directly after didactic training.

One could also consider a limit to the study the possible re-activity during the goal setting and feedback phase. Participants were given graphical feedback pertaining to their performance just prior to the observation sessions. Although this may have may maximize the effectiveness of individualized goal setting and feedback one should be cautious in interpreting these results. The presentation of individualized goal setting and feedback (not the feedback itself) just prior to observations may set the occasion for the targeted interactions to occur. Future research should evaluate the effectiveness of feedback on temporally distant observations.

Although the study had limitations, it provided preliminary information concerning the necessary procedures that behavior analysts should use when training day care and educational staff.  As our field extends into day care and other educational environments, behavior analysts must consider that the education in-service training model of a workshop/didactic training may not be adequate for teachers' observable and maintained behavior change.   Only when combined with goal setting and performance feedback will generalized and maintained behavior change be evident.  If behavior analysts' didactic trainings fail to provide the behavior change that day care and school administrators expect, behavior analysts will not be invited back and children may suffer.  Future researchers should expand and generalize this study to determine how the field of behavior analysis can train educators while providing acceptable rates of behavior change, generalization, and maintenance.

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**Author Contact Information:**

**Jonathan W. Ivy, M.A., BCBA**
**148 East High St. Apt 3**
**Elizabethtown PA, 17022**
**Phone: (717) 367-8529**
**Email: Jonathan_ivy@iu13.org**

**Kimberly A. Schreck, Ph.D. BCBA**
**Penn State University - Harrisburg**
**777 W. Harrisburg Pike**
**W311 Olmsted Building**
**Phone: (717) 948-6048**
**Email: Kas24@psu.edu**