

*TEACHER ACQUISITION OF FUNCTIONAL
ANALYSIS METHODOLOGY*

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The current study examined methods for training teachers to use functional analysis methods. Teachers first received written and verbal instructions detailing attention and demand conditions. They then received training that included modeling, rehearsal, and performance feedback. Finally, probes were taken during ongoing class instruction. Results indicate that teachers acquired the skills and used them in classroom settings.

DESCRIPTORS: functional analysis, teacher training, consultation

Iwata et al. (2000) evaluated the effects of a training protocol that included lecture, readings, and video instruction to teach functional analysis skills to undergraduate psychology students. Although the students demonstrated their acquired skill in role-play analyses, no measures of performance in applied settings were conducted. The training of functional analysis skills is not limited to psychologists-in-training. Given recent federal legislation mandating functional assessment before a student's placement may be changed (Individuals with Disabilities Education Act, 1997), school personnel now find themselves involved in this process. Limited research to date has systematically evaluated protocols for training teachers to conduct functional analysis, although a much larger body of literature has evaluated training teachers in behavior-analytic methods. Several studies utilizing behavioral interventions have suggested that teachers require direct training in order to implement

behavioral protocols with an adequate degree of integrity (e.g., Noell et al., 2000). In this study, we attempted to extend the findings of Iwata et al. by training 3 elementary school teachers to use functional analysis methods.

METHOD

Participants, Setting, and Student Target Behavior

Three teachers and 3 students participated in the study. All teachers had very limited prior experience with behavior-analytic procedures. Teachers 1 and 2 taught regular fourth- and first-grade classes, respectively, and Teacher 3 taught a fifth-grade inclusion classroom. One male student from each classroom participated. The student referred by Teacher 3 had been diagnosed with specific learning disabilities, whereas the other 2 students appeared to be developmentally normal. Each student was referred for yelling out inappropriately during class, which included any vocalizations above a normal tone of voice that did not correspond with teacher permission to talk. All training procedures were conducted in the teacher's classroom during a planning period. Classroom probes occurred in the same classrooms during ongoing instruction.

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Simulated Functional Analysis

During training, teachers implemented two analysis conditions (attention and demand) with a graduate student playing the role of the target student. Teachers reported that the typical control condition (i.e., play) did not accurately describe naturalistic situations in their rooms. Eight scenarios were created (four attention, four demand) and implemented in a random order. Each script contained the same number and distribution of target behaviors (i.e., yelling) and other student behaviors (e.g., appropriate behaviors, nontargeted problem behaviors, compliance) to equate the opportunity for teachers to respond across sessions.

Target Teacher Behaviors, Data Collection, and Experimental Design

The primary behavior of interest was the percentage of correct teacher responses (PCTR). Teacher behaviors were scored as either correct or incorrect based on their occurrence or nonoccurrence in relation to the scripted student behavior. During the demand condition, five components were evaluated: (a) presentation and timing of instructional trials, (b) prompting student behavior with a gestural cue if the student did not perform, (c) physical guidance if gestures were not effective, (d) implementation of the escape period contingent on yelling, and (e) teacher praise. During the attention condition, four components were evaluated: (a) correctly initiating the condition (i.e., providing leisure activities, removal of attention), (b) delivery of contingent social disapproval, (c) ignoring appropriate behavior, and (d) ignoring nontargeted problem behavior. PCTR was calculated by dividing the correct number of teacher responses by the total possible opportunities for teacher behavior (based on student behavior and protocol requirements), and multiplying by 100%. A multiple baseline across subjects

design was employed to study the effects of training on PCTR. All sessions lasted for 5 min and were videotaped. Interobserver agreement data on the occurrence of PCTR were collected for 27% of the sessions. Mean agreement for PCTR was 94% (range, 83% to 100%).

Phase 1: Initial Training

During this initial phase, teachers were provided with written and verbal information regarding the conditions. The teachers had 1 day to read the protocols, and then the experimenter asked specific questions to ensure that all teachers entered this phase with equivalent knowledge of the procedures. Each teacher answered the questions with 100% accuracy. The teachers then implemented the simulated functional analysis conditions described above. The teachers were not provided with any information regarding their performance.

Phase 2: Training with Rehearsal, Modeling, and Performance Feedback

The experimenter presented the PCTR data from Phase 1 to the teacher. The experimenter praised the teacher for correct implementation of various components and reviewed aspects of the protocol that the teacher had not implemented consistently. The experimenter then randomly selected one attention and one demand scenario and modeled each step of both analysis protocols while the role-play student acted out a script in the same manner as described earlier. Each teacher then practiced both analysis conditions while receiving direct feedback regarding her performance in implementing the analysis conditions. Teachers implemented simulated functional analysis conditions in the same manner as in Phase 1, but received performance feedback at the completion of each session.

Classroom Probes

All sessions occurred during ongoing instruction in periods reported by the teacher as associated with the occurrence of problem behavior. The teachers continued to receive performance feedback following every session. During the attention condition, the teachers provided target students with a variety of leisure activities (e.g., reading textbook, coloring sheets) and stated "You may work with these things, I have some work to do." The teachers then removed all attention from the student and implemented the attention protocol used in Phases 1 and 2 of training. The other students were given worksheets selected from the current lesson plans. The teacher was instructed to respond to other students as she typically would, but respond to each occurrence of target and other behavior from the target student in the manner in which she was trained. For example, if the target student engaged in the targeted behavior while the teacher was answering another student's question, she briefly stopped answering the other student's question to deliver a statement of disapproval to the target student such as, "Stop that, you are disturbing the class." In the demand condition, the teachers presented work to the target students from a lesson plan that corresponded with the problematic periods. The target student was given work that was difficult, and the other students were given work that was consistent with the lesson plans but easy enough to allow them to work without teacher assistance. Every 30 s, the teacher instructed the student to do a specific problem on the worksheet. If the student did not start working after 5 s, the teacher presented a gestural prompt such as, "pick up the pencil and get to work like me, you do it" while picking up the pencil and orienting it toward the problem. If the student still did not start working after 5 s more, the teacher implemented physical

guidance. Yelling produced escape for the remaining time in that instructional trial. The teacher timed instructional trials with a handheld stopwatch. The teacher was told to attend to other students when necessary as long as she implemented the analysis protocols as accurately as possible.

Unlike in Phases 1 and 2, the rate of student behavior was not controlled. During the simulated functional analysis, yelling occurred 15 times per session. In the classroom, all three students engaged in higher levels of yelling during the demand condition (mean frequencies of 19, 13, and 17 for Students 1, 2, and 3, respectively) compared to the attention condition (mean frequencies of 5, 3, and 9 for Students 1, 2, and 3, respectively).

RESULTS AND DISCUSSION

Figure 1 displays PCTR during the role-play functional analysis sessions as well as PCTR when teachers implemented functional analysis in their own classrooms. Performance during Phase 1 was generally low. Each teacher improved her accuracy dramatically during Phase 2, as shown by the means for all 3 teachers exceeding 95%. During the in-class analysis, all teachers implemented the procedures with a high degree of integrity. The results suggest that, with adequate training, teachers can learn to implement functional analysis conditions accurately, thus extending the results of Iwata et al. (2000). The current results help to extend past research by examining how accurately trained teachers implemented functional analysis with actual students.

Several limitations must be noted. First, in-class functional analysis data are not directly comparable to data from simulated sessions. During simulated sessions, the behavior of role-play students was scripted in a way that produced an approximately equal number of behaviors across both attention

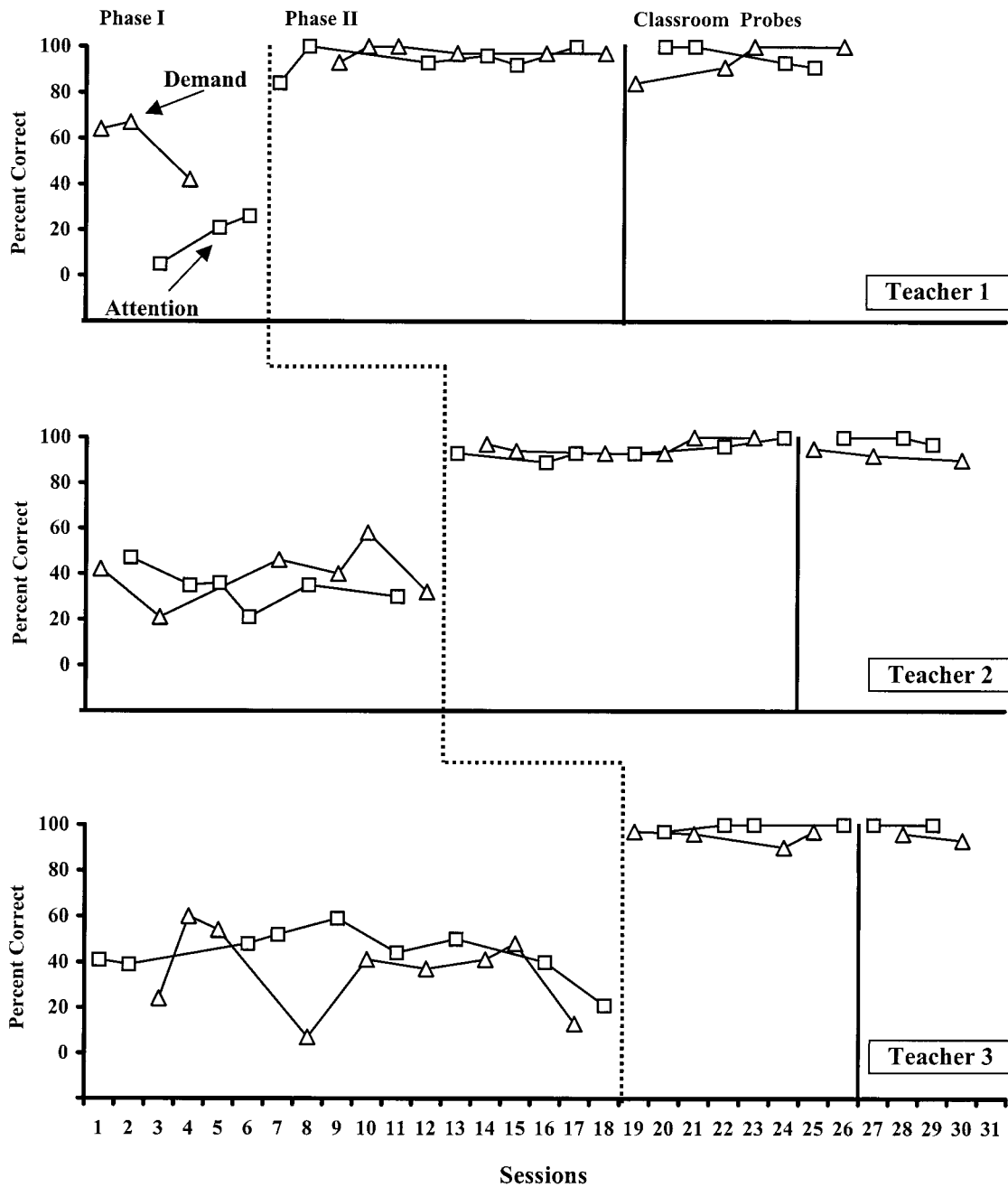


Figure 1. Percentage of correct responses for Teacher 1 (top panel), Teacher 2 (middle panel), and Teacher 3 (bottom panel) during simulated functional analysis sessions across Phases 1 and 2 and during classroom probes.

and escape conditions. Upon moving to actual functional analysis with target students, the same level of behavioral control was not guaranteed. Second, the current study did

not evaluate the teachers' ability to implement a control condition. Given that the absence of a control condition may hinder the clear interpretation of functional analysis

outcomes, it could be argued that it is still unknown if teachers can implement a full functional analysis during ongoing instruction.

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