Improving Instructional Skills of Special Education Teachers Using a Group Training Package

R. Thomas Arkwright Jr.

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IMPROVING INSTRUCTIONAL SKILLS OF SPECIAL EDUCATION TEACHERS USING A GROUP TRAINING PACKAGE

by

R. Thomas Arkwright, Jr.

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Master of Arts
Department of Psychology

Western Michigan University
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April, 1981
The objective of the present study was to develop and evaluate a training package which facilitates instructional skills of special education teachers in a practical, cost-efficient manner. After pretraining sessions of staggered baseline lengths, each teacher received sample program forms with written instructions and concise training on usage. As session performance stabilized, three teachers were taught specific performance feedback competencies and began giving verbal feedback during four other teachers' instructional sessions in a multiple-baseline across behaviors design. In addition to instructional competencies, generalization and maintenance effects were also assessed. Results indicate: 1) general training and program materials improved the instructional performance of teachers; 2) feedback given by teachers trained on observation-feedback techniques further improved the teaching performance of recipients; 3) observation-feedback training and duties beneficially affected the instructional skills of participating teachers; and 4) the teachers learned and maintained generalized instructional skills effective with a variety of students, procedures, and target behaviors.
ACKNOWLEDGEMENTS

Without the assistance and encouragement of many people this study would never have been initiated nor completed. The administrative support of Judy Gapp and Glenn Petersen enabled the project activities to occur concurrently with other educational services provided the students. Don Wornow's able conduct of much of the experiment was conscientious and influential in the development of the training package. In the initial phases of this project Brian Iwata provided much valuable input especially with respect to the early conditions and the experimental design. I am pleased to have experienced Jack Michael's stimulating presentations relative to behavior analysis and am in debt to him for suggestions specific to this project. Queenie Mills' helpful editorial review was both a learning experience for me and assured improved clarity in the project description. Terry Bradford's critiques, suggestions, and intermittent professional reinforcement were significant factors with respect to the perseverance of my efforts. My special thanks go to Dolores Rizzo who performed far beyond the call of duty in preparing the manuscript.

R. Thomas Arkwright, Jr.
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CHAPTER I

Introduction

In the past decade, the potential for application of behavioral techniques to facilitate student progress in special education programs has approached the level of a well-understood technology. Unfortunately, competent utilization of available techniques, especially with respect to the teaching of adaptive skills, is far from optimal in most special education classrooms. It seems evident that behavior analysts working in this area should place greater emphases on the development of instructional materials and training programs which might effectively lessen this discrepancy. Such attempts should focus on promoting positive changes in teachers' instructional behaviors so that the teachers will, in turn, condition and maintain improvements in students' behaviors.

Hall, Cristler, Cranston, and Tucker (1970) demonstrated that an university course on management of classroom behavior can be an effective way to modify teacher behavior. Unfortunately, however, such courses are not readily available to teachers. Exposure to behavioral approaches to classroom management is, at best, only a small part of most curricula preparing special education teachers. Furthermore, the long-term benefits of courses that may be available in this area remain to be assessed. The stature of behavior analysis in programs preparing special education teachers is perhaps best exemplified by the fact that the criteria for certification generally
do not include a behavioral assessment of the teachers' abilities to manage students or teach skills (Koegel, Russo, and Rincover, 1977).

Koegel, et al. (1977) empirically assessed teacher usage of designated behavior modification procedures and resultant student performance. Results indicate that improvements in student performance generally did not occur until the teachers had been trained to use the techniques to a high criterion. Other studies (Herbert and Baer, 1972; Parsonson, Baer, and Baer, 1974) have demonstrated that, even when people are already moderately competent in behavioral techniques, there can be value in further improving their performance.

There is now a growing body of literature devoted to training appropriate usage of behavioral techniques (Kazdin and Moyer, 1976; Becker, 1971; Patterson and Gullion, 1968; Wallace, Davis, Liberman, and Baker, 1973). As Koegel, Glahn, and Neiminen (1978, page 95) point out:

Several effective areas of diversified training techniques have been studied. Areas emphasized include instructional methods (Gardner, 1972; Hall, 1972; Katz, Johnson, and Gelfand, 1972; Paul, McInnis, and Mariotto, 1973); the use of verbal or written feedback (Cooper, Thomson, and Baer, 1970; Cossairt, Hall, and Hopkins, 1973; Gage, 1973; Panyon, Boozer, and Morris, 1970; McNara, 1971); the use of social reinforcement (Brown, Montgomery, and Barclay, 1969; McDonald, 1973); the use of token reinforcement (Breyer and Allen, 1972; Bricker, Morgan, and Grabowski, 1972; Katz et al., 1972; McNara, 1971; Pomerleau, Bobrove, and Smith, 1973); and the use of modelling procedures (Engelin, Knutson, Laughy, and Garlington, 1968; Ringer, 1973).

Kazdin and Moyer (1976) point out that training programs which combine a number of procedures may produce results that no one procedure would accomplish individually. Although research in this area has been increasing, the different combinations of training
procedures possible, together with intra-procedure variations, complicate comparative analyses of different approaches to improving instructional skills.

In most cases, facilitating appropriate usage of behavioral procedures by teachers has necessitated a special trainer or experimenter, who employed various training techniques. Cooper et al. (1970) showed preschool teachers increased attending to appropriate student responses subsequent to the onset of experimental feedback. However, the initial instruction and feedback were combined in the training procedures of this study. Unanswered is the effect of the initial instruction regarding defining the behaviors to which the teachers were to attend. Cossairt et al. (1973) investigated the effects of experimenter's instructions, feedback, and feedback plus social praise on teacher praise of elementary students. They concluded that experimenter feedback plus social praise was the most effective procedure and that a "package" using all three methods was also successful. Parsonson et al. (1974) found instructions plus discussion of behavioral definitions and goals were not sufficient to change teacher attending behavior significantly. Only after initiating feedback on performance was a significant and sustained increase noted in the proportion of attention to appropriate student behaviors. As Parsonson et al. (1974, page 427) point out:

The frequency of feedback (every 3 to 5 minutes) and the fact that it was given during training sessions may account for the relative effectiveness of the procedure in the current program, in contrast to the findings of Cossairt et al. (1973), who used feedback after 15 minute sessions.
In addition to validating improvements in teacher behavior by documenting corresponding improvement in student responding, the training procedure used in the Koegel et al. (1977) study was found effective in increasing teacher compliance with a number of instructional behaviors defined as correct. Furthermore, trained teachers generalized these behaviors when presented with new target behaviors and new students. In a later publication, Koegel et al. (1978) evaluated specific training procedures in terms of their possible differential effects on adult and child behavior. Brief demonstrations of how to teach an autistic child new behaviors were found sufficient to teach parents how to teach those children those behaviors, but generalization to new target behaviors did not take place. A different training program, based on teaching the use of general behavior modification procedures, was found effective at teaching parents how to teach new child-target behaviors. Analyses of the individual effects of several components of the generalized training program produced highly specific training results with respect to the adults' behavior.

Because most training programs described in the literature may be viewed as labor intensive in terms of specialist input required to achieve and maintain desired results, the present practitioner attempted to pursue more cost-efficient approaches to improving instructional skills in special education teachers.

In light of the apparently enhanced generalization obtained by training on general behavior modification procedures (Koegel et al., 1978), the training program used in this study was designed to
improve instructional skills within the framework of three general teaching procedures (shaping, fading, and discriminations). Program forms and instructions were intentionally concise.

Krumhus (1978) examined the effects of instructions, trainer modeling, and feedback on the appropriate use of social reinforcers by tutors of grade school and high school students. It was found that modeling produced the greatest improvement while instructions and feedback only slightly affected the tutors' performance. The present study attempted to develop and incorporate an instructional package which would effect teacher-student interactions in a manner maximizing compliance with important components of appropriate teaching. After exposure to the instructional package, feedback would then be implemented in an attempt to further improve teacher behaviors which deviate from preferred performance.

Increasing potential productivity of the training program was attempted through the use of teachers as feedback agents; thus freeing specialist personnel from this vital duty. Through formal instruction in classroom management procedures, Hall, Fox, Willard, and Goldsmith (1971) demonstrated that teachers in a variety of classroom settings could generate reliable observational records and successfully carry out experimental manipulations. If teachers can also be trained and effectively used to perform feedback functions, a means of improving the efficiency of group training programs may be available. Furthermore, if observation-feedback training results in improved instructional skills of teachers trained in these techniques, an additional benefit of employing
teachers as feedback agents may be evident.

Hay, Nelson, and Hay (1977) investigated the effects of observations of student behaviors by teachers on both student and teacher classroom behavior. The results indicate that observations by teachers may cause changes in the behavior of both the individuals observed and the individuals making the observations. Learning the observation procedure and in vivo observation duties apparently increased the frequency of prompts directed toward students observed by the teacher while not affecting praise or criticism. The authors attributed the specificity of this "observer-mediated reactivity" to the observation procedure employed by the teachers. In this case, the effect of teacher observation on teacher behavior was noted during periods when the teachers were observing students. The present training program attempted to train observation and feedback skills such that a phenomenon, similar to the observer-mediated reactivity noted by Hay et al. (1977), would beneficially effect trained teachers' compliance with specific behavioral techniques during instructional sessions with their students.

In addition to program objectives, the present study specifically attempted:

1) to assess the effect of a general instructional package on specific teaching behaviors;

2) to assess the effect of feedback given by teachers trained in observation-feedback techniques on instructional behaviors of teachers utilizing the program forms;
3) to assess the effect of feedback training on instructional behaviors of participating teachers; and
4) to assess generalization and maintenance effects produced by the training program.
Subjects and Setting

Six teachers and one teacher-program administrator participated in this study. They ranged in age from 23 years to 34 years. All were certified to teach severely mentally/multiply impaired students in the State of Michigan and, at the time of this study, five teachers had at least two years of previous teaching experience with this population. All of the participants worked at Anderson Center in Wayne County Intermediate School District. None of the teachers had any formal training in behavior modification but four teachers had been inserviced in behavioral techniques in workshops sponsored by the Behavior Specialist Project of Wayne County Intermediate School District. None of the seven teachers had received systematic training on the use of instructional techniques in their classrooms. Selection of teachers was not random, however, in that only volunteers participated and all teachers indicating interest in participation generally appeared eager. All teachers signed the participant’s agreement contained in Appendix A before taking part in the study. No teacher was denied participation.

Ten students also participated. Each of the six regular teachers picked one of their students to work with during experimental sessions and the teacher-program administrator picked a student from a non-
participating classroom. Three of the teachers picked an additional student to work with during maintenance-generalization probes. In all cases, written parental permission for the student to participate in this study was obtained before sessions began. The letter and consent form used for this purpose are contained in Appendix B. The students ranged in chronological age from 6 to 25 years. All of the students had been diagnosed as severely mentally or severely multiply impaired by agencies not associated with this study. Their handicaps and behavioral skills varied greatly but in all cases self-help behaviors were at least slightly evident. Four students were essentially non-vocal, with the remaining students displaying varied verbal skills. One student was visually impaired. All students were ambulatory.

All sessions were conducted in the students' home classroom. During each session, the teacher sat across a table from the student. All task stimuli and program materials were present on the table. Videotape equipment was positioned for session recording. One trainer, who operated the videotape equipment and scored the sessions in vivo, was seated in clear view of the teacher and student. During sessions in which the teacher received feedback, an additional teacher was seated next to the trainer to perform this function. Each session was approximately 15 minutes in duration.

Goal Behaviors

Teachers selected goal behaviors for each student from those specified in the students Individual Educational Plan. Depending
on the complexity of tasks and estimated instructional time allotted each, from one to three goal behaviors were selected for each student. In those cases where two or three goal behaviors were taught, the same Skill Acquisition Program (SAP) type was utilized.

Participating teachers held regular instructional sessions in their classrooms throughout all conditions of this study. In addition to videotaping each session, the trainer serving as primary observer also recorded teacher behavior in vivo. The following instructions, adapted from Koegel et al. (1977), were used to record teacher behavior:

Observation and Recording Instructions

Use cassette player with interval tape, ear piece, and an observation form. When the session begins, start the cassette player. Use the following definitions to make a decision about the adequacy of each category being assessed.

Contact: The beginning of each task

For contact to be considered correct, the teachers' presentation of the task instruction must be properly contingent upon student behavior. To be properly contingent, the task instruction should only be presented when the student has been on task for at least two seconds. A student will be considered on task when not emitting behaviors considered nonconducive to learning (e.g., inappropriate verbalizations, self stimulation, inappropriate posture, etc.) and, if relevant, the student is performing responses that may have been stated as prerequisites for task presentation (e.g., eye contact,
hands on materials, etc.). Unless specified by the teaching procedure, no teacher verbalizations should occur and no responding should be required of the student during this two second interval. Data recording for a previous trial may occur during this inter-trial interval.

**Task $S^D$: The teacher's instruction to the student**

Appropriate teacher presentation of the task $S^D$ must be:

1. Clear - For the task $S^D$ to be considered clear it must be discriminable by the observer, be presented only once per trial (except for representation for correcting a student's response), have a distinct onset and offset, and it must be uninterrupted and unambiguous.

2. Consistent - The task $S^D$ should be consistent with previous similar trials (e.g. not "Show me the blue card" followed by "Point to the blue card"), and it should be appropriate to the task (e.g. not "Show me the blue card" when no blue card is present).

3. Distinct - Other instructional activities (e.g. data recording for a previous trial) should not be done while presenting the following task's instructions.

**Consequation: The teacher's response to student performance**

Correct consequation must be:

1. Consistent with procedurally delineated consequation. A reinforcement procedure should follow each correct response,
and an extinction or correction procedure (whichever is designated by the teaching procedure) should follow no responding and/or incorrect responses.

2. Properly conducted.

A. Reinforcement procedures must:
   1. be initiated within two seconds after correct responses;
   2. not be initiated during student responding on tasks requiring a chain of responses (e.g. if the teacher says "good" while the student is counting a particular sequence of numbers, consequation should be scored incorrect);
   3. be unambiguous (e.g. social reinforcement given with a smile and friendly tone of voice).

B. Correction procedures must:
   1. be initiated within two seconds after the incorrect response (when used for incorrect responding) or be initiated between 4-10 seconds after presentation of the task $S^D$ (when used for no responding);
   2. include a verbal "no" (for incorrect responding only), and either modeling or effective prompting (whichever is designated by the teaching procedure) of the correct response, unless the correct response is emitted by the student before the correction prompt has time to occur. Also, if representation of task instructions is specified by the teaching procedure, then correction procedures must contain task instructions consistent with the task
C. Extinction procedures must:

1. be initiated within two seconds after incorrect responses (when used for incorrect responding), or be initiated between 4 to 10 seconds after presentation of the task $S^D$ (when used for no responding);
2. last at least four seconds;
3. consist of the instructor turning and holding face sideways - no eye contact with the student and no teacher verbalizations should occur.

Data: The teacher's recording of student performance

Data recording consists of the teacher marking the data form indicating the student's performance. Correct data recording occurs when the teacher records performance after the student response, but before presentation of the task instructions for the next trial. Correct data recording is defined as scoring the data sheet within 10 seconds after the initiation of the consequence procedure. Instances of presentation of the following trial's instructions without data recording for the previous trial will be defined as incorrect.

The cassette recording will signal the beginning of each observation interval by a voice stating the interval number. The end of each observation interval (30 seconds later) will be signaled by the work "record" on the tape. After every interval, observers should score each category by marking C, I, or N in the appropriate box on
the observation form. C (correct) should be used to indicate that all occurrences of the category during the interval conformed with the category definition. I (incorrect) should be used to indicate that one or more deviations from the definition of a particular category occurred. N (not applicable) should be used to indicate categories that did not occur during the interval. All essential components of a category for at least one trial must be contained within the interval for the category to be considered to have occurred.

After every second observation interval additional time will be allotted for writing comments. Comments should stress discrepancies between the teacher's performance and the category definitions.

Continue observing and recording for the entire session.

**Design**

Staggered AB replications together with a multiple-baseline across behaviors design was used. After pretraining sessions with baselines of varying lengths, each teacher received the same materials and training. One group of teachers was then trained to give feedback while the other group received the feedback on instructional categories in a multiple-baseline fashion.

**Baseline**

Before baseline sessions began a meeting was held between the trainer and the teacher. The teacher was prompted to tell the trainer: 1) what goal behavior(s) would be taught during the
sessions; and 2) the general procedure the teacher intended to use to teach the goal behavior(s). During baseline, the trainer simply observed and scored sessions in which the teacher attempted to teach the goal behavior(s) to the student.

**Format Instruction**

After the last baseline session but before the first session in Format Instruction, teachers received copies of SAP cards and written instructions contained in Appendix C. Each teacher was asked to take these materials home, study them, note any questions they may have, and attempt to prepare a SAP program for each goal behavior being taught during sessions. After the teacher had read the SAP materials, another meeting was held between the trainer and teacher. During this meeting: 1) the trainer addressed all of the teachers' questions concerning the SAP format; 2) the trainer and teacher discussed possible advantages and disadvantages of adjusting teaching procedures to the SAP format; 3) the trainer assisted the teacher in correctly preparing a SAP program for each goal behavior being taught during sessions; and 4) the trainer assumed the role of the student for the purpose of role-playing situations with the teacher. This meeting terminated when the teacher correctly complied with the SAP format at least once for each possible student response (e.g. correct response, incorrect response, and no response) for each program to be used during instructional sessions.

Format Instruction sessions then began. During Format Instruction the trainer observed and scored sessions. In addition, any
questions concerning the use of the SAP programs were answered by the trainer before or after sessions.

Feedback Training

Teachers who participated in Feedback Training were taught specific observation and feedback competencies with respect to distinct categories of instruction in a multiple-baseline fashion. With the exception of Teacher 1, each teacher had to demonstrate specific competencies for trained categories before training on additional categories was initiated. Observer Training for Teacher 1 consisted of Phase I and II as described below initiated simultaneously with the first two categories and then the second two categories in a multiple-baseline design. Feedback Duties for Teacher 1 consisted of Phase III and IV as described below, initiated simultaneously with the first two categories, and then in a multiple-baseline design across the remaining categories.

Along with phase activities, teachers received a series of written materials organized into Observer - Feedback Packages (OFP). A complete OFP is contained in Appendix D. The initial OFP contained four components: 1) instructions for use of the observer-recording-feedback system; 2) sample observation forms; 3) a written rationale of the significance of the first category to be trained; and 4) a complete definition of the first category. All following OFPs contained: 1) a rationale delineating the significance of the next category to be trained; and 2) a complete definition of the category.
Training on each category proceeded according to the following phases:

Phase I. The teachers received the initial OFP (if this was the first category being trained) or an OFP for a new, untrained category. The trainer asked the teachers to take the package home, study it, and note any questions. A 30 to 45 minute meeting for the following school day was then arranged. This meeting (Phase II) was only initiated if the teachers responded affirmatively when asked if they had thoroughly read the OFP. If the teachers had not studied the OFP, Phase II was postponed.

Phase II. This phase was divided into three parts.

Part I consisted of giving the teachers full opportunity to direct any questions to the trainer that may have arisen from studying the new OFP. All questions were addressed by the trainer. When no further questions were asked, part 2 was initiated.

In part 2 the teachers practiced scoring the new category, in addition to any previously taught categories. This was done by having the teachers view and score videotaped recordings of actual instruction sessions. In most cases the training tapes depicted session segments from the teacher-student pair whom the teacher in Feedback Training was preparing to observe in vivo. The teachers were allowed to stop or replay the recording at any time. The trainer addressed all questions that the teachers asked. Part 2 ended when the teachers scored the new category in agreement with the trainer for four unfamiliar, consecutive intervals; stopping the videotape recording
if necessary, but without trainer assistance. This contingency was explained to the teachers at the beginning of part 2.

In part 3, teachers were required to demonstrate accurate scoring of all trained categories simultaneously. They independently scored 10 uninterrupted intervals of taped instructional sessions. The observation form was then turned in to the trainer, and the teachers again had the opportunity to briefly discuss any questions. The teachers then watched as the trainer compared his pre-scored 10 intervals with the teachers'. Minimum criterion for progression to Phase III was 90% agreement for all categories being scored. If the advancement criterion was met, a Phase III session was scheduled and teachers were asked to re-read the feedback instructions prior to the Phase III session. If teachers did not meet the advancement criterion, they were informed of deficient categories and a review meeting was arranged. Review meetings focused only on deficient categories as evidenced by the test. Each interval where a disagreement occurred was played back on the videotaped recording for joint re-evaluation by trainer and teachers. Misunderstandings or misinterpretations were discussed until verbal agreement was reached. When all disagreements had been remediated, the review meeting was terminated and another 10-interval observer-recording test was initiated.

Phase III. During this phase the teachers observed, scored, and gave verbal feedback to another teacher on all previously taught categories during in vivo instructional sessions. In addition, the teachers shared the responsibility for giving verbal feedback on the new category with the trainer. Before Phase III sessions: 1)
the teacher and trainer reviewed the feedback instructions contained in the OFP; 2) the trainer informed the teachers that, if necessary, he would give verbal feedback for the first violation of the new category; thereafter the feedback teacher should provide all feedback; and 3) the trainer prompted the feedback teacher to review with the observee teacher previous categories and explain the correct definition for the new category.

During sessions the trainer recorded instances of appropriate, inappropriate, and neglected feedback by the feedback teacher. If, in the trainer's evaluation, feedback was being neglected by the feedback teacher, it was provided by the trainer. Five minutes were allotted after session for conversations among the observee teacher, feedback teacher, and trainer. After leaving the observee teacher's classroom the trainer and feedback teacher discussed the accuracy of their feedback. Feedback teachers advanced to Phase IV if their feedback accuracy was 80% or better for all categories. Feedback accuracy was calculated by dividing the number of incidents of appropriate feedback plus inappropriate feedback plus neglected feedback and multiplying by 100. Teachers remained in Phase III until this criterion was met.

Phase IV. Teachers were now expected to give independently the necessary feedback on all the trained categories. This was monitored by the trainer. Monitoring consisted of accuracy checks on feedback. If accuracy fell below 80% for any category, a Phase II review meeting was held between the feedback teacher and trainer. Monitoring continued during each session until a minimum of 80%
accuracy for every category occurred. If any categories remained to be trained, teachers received additional OFP materials after meeting this criterion. Phase I training for the new category then began. During training on new categories, in vivo feedback sessions with previously taught categories continued to be held. Monitoring of feedback accuracy was discontinued when teachers demonstrated a minimum of 80% accuracy for two consecutive sessions for all categories being taught.

Feedback teachers continued to have instructional sessions with their students throughout Feedback Training. The trainer scored and recorded these sessions on videotape. The first session after Phase I of Feedback Training for a specific category is represented on the feedback teachers' graphs as the first data point for that category in the Feedback Training condition.

Feedback

In this condition teachers received verbal feedback on their compliance with defined components of instruction. For Teachers 2, 4, and 6, most of the feedback was given by teachers undergoing Feedback Training. Exceptions, where the trainer gave feedback were: 1) the first instance of feedback on a new category; and 2) instances where the trainer believed the feedback teacher negligent in providing feedback. All feedback given Teacher 7 was given by Teacher 3 after she had completed all feedback duties for Teacher 4. Teachers received feedback on successive instructional categories in a multiple-baseline across behaviors arrangement.
Before beginning each session in which teachers received feedback on a category for the first time, the feedback teacher explained the definition of the new category to the teacher about to receive feedback. Also, review of any previous feedback categories may have occurred at this time. During sessions, teachers received verbal feedback on their performance as described in the feedback instructions of the OFP and Phases III and IV in Feedback Training (pages 18-20). After sessions, five minutes were allotted for the teacher receiving feedback, the feedback teacher, and the trainer to discuss the session. If necessary, the trainer attempted to prompt the feedback teacher to give positive feedback to the observee teacher at this time. Prompting was done by modelling verbal praise and asking the feedback teacher leading questions (e.g. "Did you notice how much more consistent the task S's were today?"). Due to the fact that it was only initiated when category violations occurred, the feedback given during sessions may be considered generally negative (e.g. "You did not wait long enough between task presentations."; "You neglected to reinforce that last response."). For this reason the trainers felt that the post-session, positive feedback period was very important.

Follow-Up

Follow-up sessions were conducted with five teachers at intervals ranging from six weeks to eight months after formal participation in the program had terminated. Teachers, students, and program types were chosen for follow-up sessions so that teacher performance could be measured during the following situations: 1) instruction of the
same student the teacher worked with during project sessions using the same SAP program type (Teacher 1); 2) instruction of the same student the teacher worked with during project sessions but using a different SAP program type (first follow-up session with Teacher 2); 3) instruction of a different student using the same SAP program type the teacher worked with during project sessions (Teacher 3); and 4) instruction of a different student using a different SAP program type than the teacher worked with during project sessions (Teacher 4 and second follow-up session with Teacher 2).

Reliability

The cassette recording played by the primary observer to signal observation intervals was also wired to the videotape recording equipment so that interval signals were simultaneously dubbed on the videotaped recording of every session. To assess the accuracy of the primary observer's in vivo recording of teacher behavior, frequent reliability checks with a second observer's score of randomly selected videotaped sessions were made. Session reliabilities were calculated for each of the four separate categories of behavior by dividing the total number of agreements by the total number of agreements plus disagreements. An agreement was scored for every interval in which both observers recorded the same occurrence of the category. A disagreement was scored for every interval in which the observers differentially recorded a category. This included differences in occurrence as well as differences in the correctness of occurrences. Instances in which both observers agreed that the category did not
occur were not included when computing reliabilities. The inclusion of such instances would result in spuriously high reliabilities, especially with regard to sessions with low-frequency behaviors. Table 1 shows the mean reliability scores and sessions assessed per subject, category, and experimental conditions.
| Table 1 |
| Mean Reliability Scores and Sessions Assessed Per Teacher Category, and Experimental Condition |

<table>
<thead>
<tr>
<th></th>
<th>Contact</th>
<th>Task SD</th>
<th>Consequence</th>
<th>Data</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>94% (1/2)</td>
<td>74% (1/2)</td>
<td>88% (1/2)</td>
<td>94% (1/2)</td>
<td>87%</td>
</tr>
<tr>
<td>T1</td>
<td>Format Instruction</td>
<td>85% (5/6)</td>
<td>89% (6/10)</td>
<td>76% (6/10)</td>
<td>86% (5/6)</td>
</tr>
<tr>
<td>Observer Training</td>
<td>79% (1/2)</td>
<td>81% (1/3)</td>
<td>82% (2/5)</td>
<td>83% (1/2)</td>
<td>81%</td>
</tr>
<tr>
<td>Feedback Duties</td>
<td>79% (2/6)</td>
<td>94% (1/9)</td>
<td>94% (2/6)</td>
<td>89%</td>
<td></td>
</tr>
<tr>
<td>Follow-up</td>
<td>87% (1/7)</td>
<td>94% (1/7)</td>
<td>87% (1/7)</td>
<td>89% (1/7)</td>
<td>89%</td>
</tr>
<tr>
<td>Overall</td>
<td>84% (10/19)</td>
<td>85% (10/19)</td>
<td>83% (10/19)</td>
<td>89% (10/19)</td>
<td>85%</td>
</tr>
<tr>
<td>Baseline</td>
<td>75% (2/4)</td>
<td>78% (2/4)</td>
<td>84% (2/4)</td>
<td>89% (2/4)</td>
<td>84%</td>
</tr>
<tr>
<td>T2</td>
<td>Format Instruction</td>
<td>80% (2/7)</td>
<td>76% (3/9)</td>
<td>76% (3/9)</td>
<td>78% (2/7)</td>
</tr>
<tr>
<td>Feedback</td>
<td>89% (2/5)</td>
<td>80% (1/3)</td>
<td>75% (1/2)</td>
<td>90% (2/5)</td>
<td>84%</td>
</tr>
<tr>
<td>Follow-up</td>
<td>92% (1/2)</td>
<td>93% (1/2)</td>
<td>77% (1/2)</td>
<td>100% (1/2)</td>
<td>91%</td>
</tr>
<tr>
<td>Overall</td>
<td>84% (7/18)</td>
<td>82% (7/18)</td>
<td>76% (7/18)</td>
<td>89% (7/18)</td>
<td>83%</td>
</tr>
<tr>
<td>Baseline</td>
<td>85% (2/4)</td>
<td>100% (2/4)</td>
<td>100% (2/4)</td>
<td>91% (2/4)</td>
<td>94%</td>
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<tr>
<td>T3</td>
<td>Format Instruction</td>
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<td>92% (3/9)</td>
<td>98% (2/6)</td>
<td>100% (4/10)</td>
</tr>
<tr>
<td>Feedback Training</td>
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<td>100% (1/1)</td>
<td>98% (2/4)</td>
<td>99%</td>
<td></td>
</tr>
<tr>
<td>Follow-up</td>
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<td>100% (1/1)</td>
<td>98% (1/1)</td>
<td>100% (1/1)</td>
<td>95%</td>
</tr>
<tr>
<td>Overall</td>
<td>91% (7/15)</td>
<td>98% (7/15)</td>
<td>94% (7/15)</td>
<td>97% (7/15)</td>
<td>95%</td>
</tr>
<tr>
<td>Baseline</td>
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<td>86% (1/1)</td>
<td>88% (1/1)</td>
<td>82%</td>
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<tr>
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<td>Format Instruction</td>
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<td>83% (1/2)</td>
<td>100% (3/9)</td>
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<td>Feedback</td>
<td>93% (2/6)</td>
<td>100% (1/3)</td>
<td>100% (2/7)</td>
<td>98%</td>
<td></td>
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<tr>
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<td>100% (1/1)</td>
<td>100% (1/1)</td>
<td>92%</td>
</tr>
<tr>
<td>Overall</td>
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<td>98% (5/11)</td>
<td>91% (5/11)</td>
<td>95% (5/11)</td>
<td>92%</td>
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<td>86% (1/3)</td>
<td>88% (1/3)</td>
<td>94%</td>
</tr>
<tr>
<td>T5</td>
<td>Format Instruction</td>
<td>85% (4/6)</td>
<td>100% (5/6)</td>
<td>98% (3/5)</td>
<td>100% (3/5)</td>
</tr>
<tr>
<td>Feedback Training</td>
<td>96% (2/4)</td>
<td>100% (1/2)</td>
<td>100% (2/5)</td>
<td>100% (1/1)</td>
<td>99%</td>
</tr>
<tr>
<td>Follow-up</td>
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<td>100% (1/7)</td>
<td>100% (1/7)</td>
<td>100% (1/1)</td>
<td>99%</td>
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<td>97% (8/14)</td>
<td>97% (8/14)</td>
<td>97%</td>
</tr>
<tr>
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<td>89% (1/3)</td>
<td>89% (1/3)</td>
<td>89% (1/3)</td>
<td>92%</td>
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<tr>
<td>T6</td>
<td>Format Instruction</td>
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<td>87% (3/6)</td>
<td>78% (1/3)</td>
<td>100% (3/7)</td>
</tr>
<tr>
<td>Feedback</td>
<td>91% (2/4)</td>
<td>100% (1/2)</td>
<td>98% (3/5)</td>
<td>100% (1/1)</td>
<td>97%</td>
</tr>
<tr>
<td>Overall</td>
<td>92% (5/11)</td>
<td>92% (5/11)</td>
<td>88% (5/11)</td>
<td>96% (5/11)</td>
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<td>90% (1/2)</td>
<td>100% (1/2)</td>
<td>90%</td>
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<tr>
<td>T7</td>
<td>Format Instruction</td>
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<td>90% (4/9)</td>
<td>86% (4/10)</td>
<td>93% (5/12)</td>
</tr>
<tr>
<td>Feedback</td>
<td>95% (3/7)</td>
<td>100% (2/4)</td>
<td>100% (2/3)</td>
<td>100% (1/1)</td>
<td>99%</td>
</tr>
<tr>
<td>Overall</td>
<td>90% (7/15)</td>
<td>90% (7/15)</td>
<td>93% (7/15)</td>
<td>98% (7/15)</td>
<td>93%</td>
</tr>
</tbody>
</table>
CHAPTER III

Results

Teachers were paired for participation in the Feedback and Feedback Training conditions of this study. Teacher 1 gave feedback to Teacher 2. Teacher 3 gave feedback to Teacher 4 and Teacher 7. Teacher 5 gave feedback to Teacher 6. Data for Teachers 1, 3, and 5 showing instructional performance during Baseline, Format Instruction, Feedback Training (divided into Observer Training and Feedback Duties for Teacher 1), and Follow-up sessions are presented in Figures 1, 3, and 5 respectively. Data for Teachers 2, 4, 6, and 7 showing instructional performance during Baseline, Format Instruction, Feedback, and Follow-up sessions are presented in Figures 2, 4, 6, and 7 respectively. In each Figure, the ordinates show the percent of intervals in which contact, task $S^D$, consequation, and data occurrences were correct. Sessions are presented on the abscissa.

To obtain measures of general instructional competencies of each teacher, composite scores were computed for each condition by averaging the mean performance scores for all four instructional categories. These data, along with category mean performance scores for each teacher during each condition of this study, are contained in Table 2.

Presented in Table 3 are the overall mean performance scores calculated for each instructional category by experimental conditions. This was done by averaging all teachers session scores of similar
Figure 1

The figure shows the percentage of intervals in which all category occurrences were correct across different tasks: Contact, Bata, Task 10, and Consolation. The data is presented in a series of line graphs, with each graph representing a different task, plotted against session numbers from 1 to 18. The x-axis represents the session numbers, and the y-axis represents the percentage of correct intervals. The graphs indicate fluctuations in performance across the observed training and feedback duties periods.
Figure 2
Figure 3

Percentage of intervals in which all category occurrences were correct:
- Baseline
- Format instruction
- Feedback training
- Follow-up

Sessions 1 to 15

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Figure 4

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Figure 5

[Graph showing percent of intervals in which all category occurrences were correct for conversation, contact, task 2D, and data over sessions.]
Figure 6

The figure shows a graph with the x-axis representing sessions and the y-axis representing the percentage of intervals in which all category occurrences were correct. The categories are labeled as 'Consequences', 'Contact', 'Task 3D', and 'Data'. The graph displays data points indicating changes in the percentage over different phases: baseline, format instruction, and feedback.
Figure 7

[Graph showing the percent of intervals in which all category occurrences were correct for different tasks and conditions, including baseline, format instruction, and feedback.]

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Table 2

Composite Scores and Category Mean Performance Scores per Teacher Category, and Experimental Condition

<table>
<thead>
<tr>
<th></th>
<th>Contact</th>
<th>Task 50</th>
<th>Consequation</th>
<th>Data</th>
<th>Composite</th>
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<tr>
<td><strong>T1</strong></td>
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<td>0</td>
<td>13</td>
<td>31</td>
<td>17</td>
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<tr>
<td></td>
<td>Format Instruction</td>
<td>33.5</td>
<td>63.3</td>
<td>98.8</td>
<td>67.5</td>
</tr>
<tr>
<td></td>
<td>Observer Training</td>
<td>92</td>
<td>94.7</td>
<td>98.8</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Feedback Duties</td>
<td>97.3</td>
<td>100</td>
<td>88</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>Follow-up</td>
<td>80</td>
<td>88</td>
<td>80</td>
<td>92</td>
</tr>
<tr>
<td><strong>T2</strong></td>
<td>Baseline</td>
<td>31</td>
<td>39</td>
<td>14.5</td>
<td>20</td>
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<tr>
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<td>Format Instruction</td>
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<td>55</td>
<td>23.5</td>
<td>60.7</td>
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<td>Feedback</td>
<td>91.2</td>
<td>66.7</td>
<td>55</td>
<td>90</td>
</tr>
<tr>
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<td>Follow-up</td>
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<td>80</td>
<td>52</td>
<td>100</td>
</tr>
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<td>10</td>
<td>77.5</td>
</tr>
<tr>
<td></td>
<td>Format Instruction</td>
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<td>94.7</td>
<td>86.7</td>
<td>100</td>
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<tr>
<td></td>
<td>Feedback Training</td>
<td>100</td>
<td>100</td>
<td>95</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Follow-up</td>
<td>100</td>
<td>100</td>
<td>65</td>
<td>100</td>
</tr>
<tr>
<td><strong>T4</strong></td>
<td>Baseline</td>
<td>6</td>
<td>45</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Format Instruction</td>
<td>10</td>
<td>98.3</td>
<td>75</td>
<td>97.9</td>
</tr>
<tr>
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<td>Feedback</td>
<td>66.7</td>
<td>100</td>
<td>97.1</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Follow-up</td>
<td>25</td>
<td>78</td>
<td>100</td>
<td>100</td>
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<td><strong>T5</strong></td>
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<td>0</td>
<td>10</td>
<td>13.3</td>
<td>18.3</td>
</tr>
<tr>
<td></td>
<td>Format Instruction</td>
<td>98.7</td>
<td>100</td>
<td>93.2</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Feedback Training</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Follow-up</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td><strong>T6</strong></td>
<td>Baseline</td>
<td>0</td>
<td>70</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Format Instruction</td>
<td>16.3</td>
<td>60.8</td>
<td>62</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Feedback</td>
<td>90</td>
<td>100</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td><strong>T7</strong></td>
<td>Baseline</td>
<td>33</td>
<td>100</td>
<td>7.5</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Format Instruction</td>
<td>14.2</td>
<td>97.1</td>
<td>86.5</td>
<td>86.7</td>
</tr>
<tr>
<td></td>
<td>Feedback</td>
<td>94.2</td>
<td>100</td>
<td>100</td>
<td>100</td>
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</table>

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Table 3
Overall Mean Performance Scores

<table>
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<th>Treatment</th>
<th>Contact</th>
<th>Task SD</th>
<th>Consequation</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>14.3%</td>
<td>40.9%</td>
<td>13.9%</td>
<td>40.7%</td>
</tr>
<tr>
<td>Format Instruction</td>
<td>40.8%</td>
<td>81.9%</td>
<td>69.4%</td>
<td>89.5%</td>
</tr>
<tr>
<td>Feedback Training</td>
<td>96.9%</td>
<td>98.2%</td>
<td>97.5%</td>
<td>97.4%</td>
</tr>
<tr>
<td>Feedback</td>
<td>84.4%</td>
<td>92.2%</td>
<td>92.9%</td>
<td>92.8%</td>
</tr>
<tr>
<td>Follow-up</td>
<td>84.2%</td>
<td>87.7%</td>
<td>74.8%</td>
<td>98.7%</td>
</tr>
</tbody>
</table>
conditions for each instructional category.

Table 2 and Table 3 depict generally low performance for all teachers during baseline. As evidenced by composite scores, category mean performance scores, and overall mean performance scores significantly higher than baseline, Format Instruction improved performance within the four distinct instructional categories and considerably increased the general instructional competency of all teachers.

As a result of Feedback Training, contact, task $S^D$, consequation, and data improved in every case, except in two instances for Teacher 5 where performance was already 100%. Teacher 1, who had the lowest Format Instruction scores, showed the greatest improvement. All teachers trained as feedback agents demonstrated near perfect performance in sessions with their own students by the end of training. It should be noted that this occurred without these teachers ever receiving direct feedback from others on their teaching skills.

During Feedback sessions, category mean performance scores, composite scores, and overall mean performance scores improved in every category for which Teachers 2, 4, and 7 were given feedback. Teacher 6 improved in all but the data category which was already 100% during Format Instruction. The many replications of this effect seen in the multiple-baseline designs of Figures 2, 4, 6, and 7 clearly indicate that verbal feedback by the trained teachers greatly improved the performance of recipients.

The Follow-up sessions conducted with Teachers 1, 2, 3, 4, and 5 reveal a large degree of maintenance of skills learned during this
program. Also, because of the good performance obtained during the different situations for which Follow-up sessions were conducted with Teachers 2, 3, 4, and 5 (see Design section, pages 21 and 22), it appeared the skills that the teachers learned generalized well to other students and program types. As may be expected, however, performances generalized least in those cases where both student and program type were different.
CHAPTER IV

Discussion

Concise training on the use of the SAP materials effectively increased teacher compliance with designated instructional techniques. Koegel et al. (1977) demonstrated that proficient use of instructional techniques similar to those in this study was necessary before measurable improvements in student behavior were noted. Although this study made no attempt to assess empirically the effect of improved teacher behavior on student performance, some indicators of student benefit were: 1) the acquisition of new skills by some students; 2) the general increase in percent of correct responses across sessions noted for most students; and 3) in many cases, a decrease in disruptive behaviors or an increase in behaviors precurrent to task presentation (apparently resulting from improved teacher compliance with the contact contingency).

In addition to improving instructional skills, statements by teachers on the post-project questionnaire shown in Appendix E pointed out possible advantages of the utilization of the SAP format in the organization of academic activities in their classroom. These were: 1) the simplification of training use of academic program materials to naive instructors made possible by the written SAP instructions and the explicit delineation of teaching procedures in the procedural flowchart section of the program forms; 2) the facilitation of procedural consistency by individual instructors.
and across different instructors working on the same goal behavior with the same student (The benefit here was hoped to increase both the acquisition and the generalization of skills being taught.); and 3) the graphic display of student performance along with the vital information section of each program which was thought to be useful as a record of individual student progress and as part of the students' performance profiles.

Koegel et al. (1978) found that a training program based on teaching the use of general behavior modification procedures apparently enhanced parents' ability to teach new child-target behaviors. In view of the findings of the present study, this researcher believes an additional advantage of the SAP format, which is based on three general behavior modification procedures (shaping, fading, and discriminations), is enhanced generalization of instructional abilities. Although teacher performance during Follow-up sessions demonstrated a high degree of competency maintenance and generalization to new procedures, goal behaviors, and students, this effect can not be exclusively attributed to the SAP format. It is likely that the various project activities which took place after Format Instruction contributed to the results obtained during Follow-up sessions. Unfortunately, assessment of maintenance-generalization effects of Format Instruction alone was not attempted in this study.

The practicality of the SAP format was further demonstrated by the fact that all teachers who participated in this study transferred most of their written academic programs to the SAP forms and began utilizing additional SAP programs with all or the majority of their
regular students. Permanent instructors in participating classrooms were taught by the participant teachers and regularly used the SAP forms during on-going classroom activities.

Unlike some previous studies (Krumhus, 1978; and Cossairt et al., 1973) the instructional package alone was found to effect great improvement in teacher behaviors. Most likely this is due to the explicit format of the instructional materials together with the behaviors the trainer and teacher engaged in during this condition. In her study, Krumhus (1978) suggested that feedback has a higher probability of improving performance because of the specificity and frequency of its occurrence. Also discussed was the reinforcing function and discriminative function of the feedback stimuli. Instructions, as employed in the present study, are designed to maximize both the reinforcing and discriminative function while at the same time allowing for specific, frequent feedback as the teachers may continually refer to these materials during sessions with students.

The present study extended the findings of Hall et al. (1971) by demonstrating that special education teachers can be taught specific observation and feedback competencies. Furthermore, the feedback given by trained teachers was found to improve the performance of recipients.

As described in the Feedback Training condition and the Feedback condition, teachers giving feedback during instructional sessions actually performed a number of activities. These included defining the appropriate behavior, providing verbal feedback when...
violations occurred, and socially reinforcing appropriate instructional behaviors. Contrary to results obtained by Parsonson et al. (1974), the immediate improvement in compliance with category definitions resulting in many instances when performance feedback was initiated may indicate that the discussion of behavioral definitions related to goal performance strongly influenced teacher behavior. Often times, verbal feedback was minimized; apparently the result of defining goal performance before sessions began. It should be noted, however, that although the total feedback package was found to improve teaching performance, component effects are only speculative since the various activities were combined in this study.

In addition to teaching feedback skills which improved performance of recipients, Feedback Training also appeared to affect beneficially the instructional skills of teachers who gave the feedback. As teachers were trained to observe and give feedback to another teacher with respect to successive categories, a general improvement in compliance with the categories was noted in the trained teachers' instructional sessions. The replicated correspondence between category improvements and Feedback Training on the categories indicates that the training procedure used in this study resulted in an "observer-mediated reactivity" similar to that obtained by Hay et al. (1977). The specificity of this effect appears due to the observation-feedback system itself. As with other conditions in this study, however, numerous activities comprised Feedback Training, and a component analysis, which might
have produced interesting results, was not attempted.

The significance of the effects of Feedback Training is two-fold: 1) Teachers can be trained to perform effectively feedback duties as part of a group training program, thus increasing the efficiency of the program by performing functions ordinarily done by specialist personnel; and 2) The Feedback Training used in this study improved instructional skills of trained teachers such that it does not appear necessary to provide them with direct performance feedback. By demonstrating acquisition of competent instructional skills while not having to provide direct performance feedback, an additional benefit of training teachers as feedback agents is evident.

In summary, this study demonstrated a training package effective at increasing and maintaining generalizable instructional skills in special education teachers. Special attention was paid to analyses of package conditions. The results document the effectiveness of training techniques which may allow for the design of more efficient group training programs.
FIGURE CAPTIONS

Figure 1. Percent of session intervals in which all occurrences of designated instructional categories were correct during Baseline, Format Instruction, Observer Training, Feedback Duties, and Follow-up conditions for teacher 1.

Figure 2. Percent of session intervals in which all occurrences of designated instructional categories were correct during Baseline, Format Instruction, Feedback, and Follow-up conditions for teacher 2.

Figure 3. Percent of session intervals in which all occurrences of designated instructional categories were correct during Baseline, Format Instruction, Feedback Training, and Follow-up conditions for teacher 3.

Figure 4. Percent of session intervals in which all occurrences of designated instructional categories were correct during Baseline, Format Instruction, Feedback and Follow-up conditions for teacher 4.

Figure 5. Percent of session intervals in which all occurrences of designated instructional categories were correct during Baseline, Format Instruction, Feedback Training, and Follow-up conditions for teacher 5.

Figure 6. Percent of session intervals in which all occurrences of designated instructional categories were correct during Baseline, Format Instruction, and Feedback for teacher 6.

Figure 7. Percent of session intervals in which all occurrences of designated instructional categories were correct during Baseline, Format Instruction, and Feedback for teacher 7.
INSTRUCTIONAL TECHNIQUES TRAINING PROJECT
Agreement to Participants

The Behavior Specialist Project of WCISD is offering an instructional training program to teachers of Anderson school. The focus of this program is to provide teachers with intensive practice in the use of powerful instructional techniques. Furthermore, the program is designed to familiarize teachers with a systematic approach to facilitating proper usage of instructional techniques by others working with their students.

Part of this program involves participating teachers working with their students in daily instructional sessions. During some of these sessions project staff and other teachers will observe and record the performance of both the teacher and student. The purpose of these records is fourfold: 1) to help him/her become a more effective teacher, 2) to provide teachers with practice implementing a system designed to sharpen and maintain the instructional skills of other staff in their classes, 3) to assess the progress of the student, and 4) to evaluate the program.

In pursuit of these goals, the cooperation and consent of participating teachers is sincerely requested. Because records will be collected in participating teachers and students, and these records may later be disseminated in the form of a project evaluation or summary, the consent of participants appears warranted. Your professional integrity and confidentiality are of great importance to us. The primary function of these records is to provide you with the feedback information necessary to acquire certain instructional competencies. No permanent, identifying information will be retained.

If you would like to participate in this program please read and sign the following statement. Feel free to voice any comments or ask any questions concerning this program. Thank you for your cooperation.

Sincerely,

Judith A. Gapp
Program Administrator

Tom Arkwright
Project Specialist

I, __________________________ agree to participate in the instructional techniques training project at Anderson School. I understand and consent to the collection of videotaped and anonymous written records for the purposes explained. In giving consent I indicate I have not been forced, in any way, to make this agreement or to give this permission and consent. Likewise, I understand that I can request at any time that participation be terminated.

Witness __________________________ Teacher __________________________

Date __________________________
Dear

This letter is to inform you of a new project at Anderson School which will attempt to help teachers learn new and better ways to teach your child.

Part of this project involves individual teachers working with their students in daily instructional sessions. During these sessions, project, staff and other teachers will observe and record the performance of both the teacher and student. The purpose of these records is threefold: 1) provide the teacher with information which will help him/her become a more effective teacher, 2) assess the progress of the student, and 3) evaluate the project.

In the pursuit of these goals, we sincerely need your cooperation. Because records will be collected on participating teachers and students, and these records may later be disseminated in the form of a project evaluation or summary, permission for your child to participate in this project is needed. If you would like your child to participate in this project, please read the attached statement, sign it, and return to Anderson School as soon as possible. Feel free to call us at 381-1330 if you have any comments or questions.

Thank you for your cooperation.

Sincerely,

Judith Gapp
Program Administrator

Thomas Arkwright
Project Specialist

TA/cmc
Attachment
INSTRUCTIONAL TECHNIQUES TRAINING PROJECT

Participant's Consent Form

I/We agree to have ________________________________
(Student's name)
participate in the instructional techniques training project at
Anderson School. I/We understand and consent to the collection
of videotaped and anonymous written records for the purpose
explained. In giving consent, I/we indicate I/we have not been
forced in any way to make this agreement or to give this per-
mission and consent. Likewise, I/we understand that I/we can
request at any time that participation be terminated.

Witness ________________________________ Parent/Guardian ________________________________

Date ________________________________ Parent/Guardian ________________________________
Effective instruction of SMI-TMI students requires very good teachers (V.G.T.s). Even what is considered good teaching is quite inadequate for substantially contributing to these students' progress. Being a V.G.T. is not easy. If these children were easy to teach there would be no need for V.G.T.s - good teachers would suffice. V.G.T.s are identified by the special attention and care they give to three primary components of their instruction: 1) the presentation of tasks, 2) the students' performance, and 3) their reaction to the students' performance.

These program forms provide teachers with a format which promotes instructional techniques consistent with principles of learning. They are intended to maximize the effectiveness of teachers by providing standardized approaches to instruction. They are designed to help instructors sharpen their teaching styles to conform with proven, effective techniques within each of the three primary components of instruction. Finally, they provide a tool by which teachers can systematically assess the progress of their students.

Each program contains four sections:

1. THE VITAL INFORMATION SECTION

This section is located in the upper area of the side with SKILL ACQUISITION PROGRAM printed at the top of the card. Immediately under SKILL ACQUISITION PROGRAM is the name of the program type (shaping, fading, or discrimination). In all three programs, certain vital information is consistently required.

Student: The student's name

Materials and Position: The materials to be presented to the student and their position at the beginning of the task.

If the task being taught involves the manipulation of objects, both the objects and their position at the beginning of the task should be described here.

Presentation Contingency: The criteria for presentation of the task instructions.

This category is intended for use if you want to strengthen specific pre-task responses like eye contact or hands on table. For example, if student attention is bad, the teacher may want to wait to present the task instructions until the student establishes eye contact with the instructor. If this contingency is followed consistently and the opportunity to respond is reinforcing to the student, eye contact (a las, attention) will increase. If you decide to use this category, make sure you initially set the presentation criteria low enough to allow for much student success. As the student progresses, you can use successively larger criteria in an attempt to shape the pre-task behavior to some desired level.
Reinforcers: The consequence for correct responding
A reinforcer should follow every correct student response. Examples of reinforcers are exchangeable tokens, praise, hugs, smiles, bits of edibles, and certain activities or free time. Reinforcers should be chosen individually for each student. Those things found most effective in motivating the student should be listed in this area of the vital information section.

Correction: The teacher's consequence of incorrect student responses
In this area the correction procedure to be initiated following every incorrect response should be stated. In some cases it may be appropriate to extinguish incorrect responses, but usually it is better to correct mistakes by prompting the right answer. The essential components of common correction procedures are: 1) saying "no" (to provide the student with immediate feedback on his/her mistake), 2) representing the task instructions (this is optional; in some cases it is not necessary), and 3) effectively prompting the correct response. It is important that the correction procedure actually results in the student correcting his mistake by emitting the correct response. For example, if a student with a good modeling repertoire is being taught to demonstrate a discrimination skill by pointing to the object named by the instructor, the teacher may want to specify that the correction procedure include the instructor pointing to the answer. However, if you choose to use corrective prompts which may not evoke the correct answer, always state graduated guidance as a back-up. The objective here is to make sure the student performs the correct response, but attempt to use as little prompting as possible. For purposes of consistency, it is important for the teacher to state the exact procedure by which this should be done.

Goal Behavior: The goal of the program in terms of the behavior you intend to teach the student
A general rule to remember when picking behavioral goals is to "think small" in order to insure much student success. If you intend to teach the student to perform a behavior in the presence of some type of instructions, only the goal behavior and not the instructions should be entered here. For example, if you are using the fading procedure to teach the student to match objects according to some physical dimension, the goal behavior may be pointing to the correct object while the verbal command "point to the same" would be part of the task instructions.

Task Instruction(s): The cue(s) for the student to attempt a correct response
Task instructions should present the problem to the student. To aid the student in understanding what is being asked of him, the task instruction(s) for each task being taught should be consistent (eg. "point to the same" should not be used interchangeably with "show me the same"). During acquisition of a skill, it is important for everyone working with the student to use the same task instructions. The likelihood of everyone using the same instructions will be increased if the exact words and/or physical cues that will serve as the task instruction are specifically stated as part of the procedure. Also, remember every different task should have its own task instruction(s) (eg. a different task instruction for each goal behavior when using the discrimination program).
Acquisition Criteria: Student performance desired in order to consider the skill learned or the phase completed

For every goal behavior or program phase, an acquisition criteria should be stated. Generally, percentages of current responses across successive days or sessions is a good way to state acquisition criteria (for example, at least 90 percent correct answers for two successive sessions).

Some vital information is specific to the type of program being used.

Shaping: When shaping new responses, successive approximations to the goal behavior should be reinforced. Each phase of the shaping procedure requires a minimum of some level of the goal behavior for the response to be considered correct. The response approximation for the first phase should be some level of the goal behavior the student already demonstrates at least 50 percent of the time. During the last phase, the response approximation will actually be the same as the program goal behavior. Again, the key to picking your response approximations is to think small - each phase should only be a small jump for the child. Some shaping programs require far more than four phases, in which case simply continue the program on successive forms.

Fading: Fading procedures are so named because they incorporate systematic withdrawal of prompts. Here, the response required of the student remains the same across the different phases, but the level of assistance is decreased until the prompt is completely withdrawn. The first phase of a fading procedure should include a prompt which evokes the correct response in at least 50 percent of the trials. As the student progresses through the program, the prompt level should be reduced until, in the final phase, no prompt is required for the student to perform the task.

Discriminations: It should be noted that discrimination procedures differ from fading and shaping procedures in that more than one task instruction is presented and the student is being taught to make a different response to each. The discrimination program provides for two types of teaching procedures:

A) Without Prompts (Continuous Testing)

This approach should be used if the student makes response attempts when given the task instruction, but does not yet make enough right answers. For example, if you are teaching the students to discriminate colors by pointing to an appropriate example when given the verbal task instruction, no prompts are needed if the student already consistently makes pointing responses (although many responses may be incorrect). In a case like this, many trials with differential reinforcement should result in improved performance.

B) With Prompts (Test Probes)

If the student does not consistently initiate response attempts, prompts may be helpful. One way to use prompts with discrimination procedures is to conduct many training trials in which the task instructions are paired with a prompt which is highly effective at evoking the correct response. Test trials during which the task instructions are presented alone are then interspersed to test the student's ability to respond without the prompt. If this type of procedure is employed, you should state the approximate schedule of test trials in the area
2. **THE PROCEDURAL FLOWCHART SECTION**

This section is located immediately under the vital information section. The flowchart presents step-by-step directions for conducting sessions with the student. The format is consistent for each type of procedure, but, of course, the particulars of the task being taught will effect the actual things the instructor should say and do. The vital information section contains those parts of the procedure that are particular to the task being taught.

Progress through the flowchart by following the arrows. Exit diamonds by following the arrow labeled with the answer to the question. Do what is instructed in the rectangles. Refer to the vital information section if you're not sure of the particulars called for in the flowchart.

Consistency is of paramount importance to student progress. The procedural flowcharts are intended to increase the consistency with which their user instructs the student. They should also provide a vehicle which will facilitate consistency across different instructors working with the same student on a particular skill.

3. **THE DATA SECTION**

This section is located at the bottom of the reverse side of the card. Its purpose is to provide instructors with space to record the trial by trial performance of the student. The date which each session is conducted should be entered in the far left column. The next column to the right is for the behaviors being taught or the current program phase. For the shaping and fading programs, the current phase should be listed in this column. For the discrimination program, each goal behavior being taught should be listed separately for every session. The next 10 boxes are for recording the performance of the student.

Each box corresponds to one trial. Indicate the student’s performance by marking the corresponding box according to the scoring system (C for correct responses, I for incorrect responses). As you probably suspected, the next column entitled "Notes" is for notes. Finally, at the end of the session, the last column should be entered with the percentage of correct responses for each response being taught. This is obtained by dividing the total number of trials by the number of correct responses and multiplying by 100 \( \frac{\text{total trials}}{\text{correct trials}} \times 100 \).

4. **THE GRAPH SECTION**

This section is located immediately above the data section. This is where the labors of your work should be demonstrated.

After each session, you should figure the percentage of correct responses for each response being taught (last column in data section). Then this score should be represented on the graph above the date corresponding with the session. For the fading and shaping procedures, only one behavior will be represented on the graph. For the discrimination procedure, each behavior being taught should be represented according to the coding system of the graph (using a color coding system in addition to the shapes will further help interpretation).
An ongoing record of student progress will be generated by connecting the data points representing successive session scores for each response. Indicate phase advancement for shaping and fading procedures by drawing a vertical dotted line between the sessions when the phase changed. Do not connect data points across this vertical line.

These program forms may be used for instruction of students in one-to-one or group situations. By grouping students of similar ability and with similar program goal, it is possible for one instructor to teach a number of students concurrently. The program forms should still be used, however, to increase consistency of instruction and to generate individual performance records for each student.
SKILL ACQUISITION PROGRAM

Discriminations

Student: | Behavior 1 | Behavior 2 | Behavior 3 | Behavior 4
---|---|---|---|---
materials and position: | Goal | Behavior |
presentation contingency: | Task | Instructions |
reinforcers: | Acquisition | Criteria |
correction: | Prompt | (optional)*

*If prompts will be used state approximate Test schedule.
Test schedule = Training Trials to Test Trials

START

Are presentation criteria met? yes no

Are prompts being used? yes no

Is this a test trial? yes no

Present a Task Instruction

Did student respond accurately? yes no

Did student not respond? yes no

Represent Task Instructions and Effectively Prompt

Reinforce the correct response

Is this a test trial? yes no

Record Data

Are all acquisition criteria met? yes no

FINISH

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DIRECTIONS: Follow procedure on back. Indicate correct student response by C, and incorrect student response by I.

% correct = \( \frac{C}{C+I} \times 100 \)
SKILL ACQUISITION PROGRAM

Shaping

Student:
materials and position:
good behavior:
presentation contingency:
task instructions:
reinforcers:
correction:

<table>
<thead>
<tr>
<th>reinforcers</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response Approximation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acquisition Criteria</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A SHAPING PROCEDURE

START
Are presentation criteria met?

Yes

No

Present Task Instructions

Did student meet phase criteria?

Yes

Reinforce the correct response

No

Correction

Record Data

Is phase acquisition criteria met?

Yes

No

Advance to next phase

FINISH

To: Meow
Back

Indicate phase advancement by a vertical dotted line. Label phases.

**DIRECTIONS:** Follow procedure on back. Indicate correct student response by C, and incorrect student response by I.

| Date | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 | Phase 6 | Phase 7 | Phase 8 | Phase 9 | Phase 10 | Notes | % correct | Date | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 | Phase 6 | Phase 7 | Phase 8 | Phase 9 | Phase 10 | Notes | % correct |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|-----------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|-----------|
|      |         |         |         |         |         |         |         |         |         |         |       |           |      |         |         |         |         |         |         |         |         |         |       |           |

% correct = \( \frac{C}{C+I} \times 100 \)

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Front

SKILL ACQUISITION PROGRAM

Fading

Student:

materials and position: goal behavior:
presentation contingency: task instructions:

reinforcers:

correction:

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prompt Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisition Criteria</td>
<td></td>
<td></td>
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</tbody>
</table>

A FADEING PROCEDURE FOR TRANSFERRING CONTROL OF STUDENT RESPONDING FROM PROMPTS TO TASK INSTRUCTIONS
**DIRECTIONS:** Follow procedure on back. Indicate correct student response by C, and incorrect student response by I.

```
| Date | Phase 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Name | % correct | Date | Phase 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Notes | % correct |
|------|---------|---|---|---|---|---|---|---|---|---|-----|-----------|------|---------|---|---|---|---|---|---|---|---|---|---|--------|-----------|
|      |         |   |   |   |   |   |   |   |   |   |     |           |      |         |   |   |   |   |   |   |   |   |   |   |        |           |
|      |         |   |   |   |   |   |   |   |   |   |     |           |      |         |   |   |   |   |   |   |   |   |   |   |        |           |
|      |         |   |   |   |   |   |   |   |   |   |     |           |      |         |   |   |   |   |   |   |   |   |   |   |        |           |
|      |         |   |   |   |   |   |   |   |   |   |     |           |      |         |   |   |   |   |   |   |   |   |   |   |        |           |
|      |         |   |   |   |   |   |   |   |   |   |     |           |      |         |   |   |   |   |   |   |   |   |   |   |        |           |
|      |         |   |   |   |   |   |   |   |   |   |     |           |      |         |   |   |   |   |   |   |   |   |   |   |        |           |

where: % correct = \( \frac{C}{C+I} \times 100 \)
```
O. F. P.
Observer - Feedback Package
OBSERVER-RECORDING INSTRUCTIONS

MATERIALS
1 - Cassette Tape Recorder
1 - Interval Cassette Tape
1 - Earphone
1 - Observation Form
1 - Pencil

The Interval Tape should be ready to start at the beginning with the earphone placed in the observer's ear. The observer should be positioned to allow clear visibility of the teacher-student pair. The observers should be seated, have a pencil and observation form ready for recording, and be as unobtrusive as possible. Push play button when session begins. The first sound you hear will be "number one". These numbers correspond directly to the small interval numbers throughout the Observation form (1-24). The number signifies the specific 30 second interval of the session you should be watching. Watch until you hear the word "record". You should then write in the appropriate letter code (either C, I, or N) in the box corresponding to the interval observed.

Although you will need to become familiar with definitions of all categories you will be scoring, the code for each category is the same. I (incorrect) should be used to indicate that one or more deviations from the definition of that particular category occurred. C (correct) should indicate that all occurrences of the category during the interval conformed with the category definition. N should be used to indicate any category being scored that did not occur during the interval. That is, it's not incorrect and it's not correct, it's merely non-applicable.

Sometimes the observation interval may begin or end during the occurrence of an instructional category which is being scored. In such cases, the observer must decide if the essential component(s) of the category occurred during the interval. If the essential components occurred during the interval, then that occurrence should be included in the scoring of the category for that interval. An example of such a case would be when a teacher initiates reinforcement by saying "good working", the interval tape signals "record", and then the teacher goes on with more verbal praise, tokens, etc. Since the
essential component of the reinforcement procedure ("good working") occurred during the observation interval, that occurrence should be included in the scoring of consequence for that interval.

The best approach when observing is to look for violations. Once you see a violation occur during the interval for any category, mark it immediately so you won't forget, then resume observing. When "record" is heard, finish marking the categories. An extra 10 seconds record time is allotted after every even numbered interval. This is for noting comments and giving feedback. (This extra time corresponds to the "comments" part of the observation form).

When observing and recording, it's important to consider each session as consisting of learning trials. Each learning trial may include various instructional components. The first component, its definition, and its rationale is included in this package.
FEEDBACK INSTRUCTIONS

Feedback, as we use it here, consists of verbalization the nature of any I's the observer recorded. It is only to be given during the extra 10 seconds record time after every even numbered interval. Due to the short time allotted, feedback should always be concise, to the point, and explain the specific violation recorded. Obviously, all feedback should be directed to the teacher you are observing.

The enclosed form, in addition to the actual observer form, should help clarify the procedure. It is a blow-up version of part of the actual form.
<table>
<thead>
<tr>
<th>INTERVAL 1</th>
<th>INTERVAL 2</th>
<th>INTERVAL 3</th>
<th>INTERVAL 4</th>
</tr>
</thead>
</table>

**Categories to be observed and recorded**
(definitions enclosed)

- **INTERVAL 1**: 30 seconds are allotted to observe the categories.
  (Watch for violations).
- **INTERVAL 2**: 10 seconds are allotted here to record C, I, or N.
- **INTERVAL 3**: 30 seconds to observe
- **INTERVAL 4**: 20 seconds are allotted here for recording C, I, or N.

The additional 10 seconds are for giving verbal feedback if necessary.

(Repeat procedure)
1. Mark every box under Rec. with one of the following three codes:
   - C = All instances of that category were correct for that interval.
   - I = At least one instance of that category was incorrect for that interval.
   - N = Not Applicable (This category was not observed during the interval.

2. Place a slash across the D if any instance of descriptive praise occurred during the interval.

The table below shows a sample of the data collection process for different categories:

<table>
<thead>
<tr>
<th></th>
<th>Rec</th>
<th>Rec</th>
<th>Rec</th>
<th>Rec</th>
<th>Rec</th>
</tr>
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<tbody>
<tr>
<td>Discrete</td>
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<td>Task SD</td>
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<tr>
<td>Data</td>
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<td></td>
</tr>
</tbody>
</table>

The table continues with similar entries for other intervals.
<table>
<thead>
<tr>
<th>TIME BEGAN</th>
<th>TIME ENDED</th>
</tr>
</thead>
</table>

Box under Rec. with one of the following three codes:
- I = At least one instance of
- N = Not Applicable
- (This category was not observed during the interval.)

Check across the D if any instance of descriptive praise occurred during conversation.
CONTACT DEFINITION: The Beginning of Each Task

For contact to be considered correct, the teacher's presentation of the task instruction must be properly contingent upon student behavior. To be properly contingent, the task instruction should only be presented when the student has been on task for at least 2 seconds. A student will be considered on task when not emitting behaviors considered nonconducive to learning (e.g. inappropriate verbalizations, self stimulation, inappropriate posture, etc.) and the student is performing responses that may have been stated as prerequisites for task presentation (e.g. eye contact, hands on materials, etc.). Unless specified by the teaching procedure, no teacher verbalizations should occur and no responding should be required of the student during this 2 second interval. Data recording for a previous trial may occur during this inter-trial interval.
RATIONALE FOR CONTACT

Most of us are already aware of the importance of this category, unfortunately, we often forget to look for it. It consists of exactly what the student is doing when the teacher presents the instructions. If the student is engaging in non-compatible or non-attending behaviors, (looking elsewhere, fingers in mouth, chewing, humming, etc.) it may interfere with learning. In some cases it may be important to have the student looking at you before initiating task instructions, and in other cases it may be important for the student to be looking at the task itself. In any case, it should be consistent across trials. Although it may appear as though the student isn't cooperating, eventually he should learn that the task presentation won't come until proper "contact" is established. On the Skill Acquisition Form, this category is referred to as "presentation contingency". The two second inter-trial interval is important for two reasons:

1) it strengthens good pre-learning behaviors, and

2) it helps students discriminate the beginning of each trial and thus be more prepared and aware of the forthcoming expectations placed upon him.
**TASK $SD$ DEFINITION:** The Teacher's Instruction to the Student

Appropriate teacher presentation of the task $SD$ must be:

1. **Clear** - For the task $SD$ to be considered clear, it must be discriminable by the observer, be presented only once per trial, (except for representation for correcting a student's response), have a distinct onset and offset, and it must be uninterrupted and unambiguous.

2. **Consistent** - The task $SD$ should be consistent with previous similar trials (e.g. not "Show me the blue card" followed by "Point to the blue card"), and it should be appropriate to the task (e.g. not "Show me the blue card" when no blue card is present).

3. **Distinct from other instructional activities** - e.g. data recording for previous trial should not be done while presenting the following task's instructions.
RATIONAL FOR TASK $S^D$

To these special students, little differences in the way an instruction is given could make a big difference to them. They get their cues from not only the words you use, but the inflection in your voice, your physical position, whether you're pointing or gesturing, as well as other subtle cues. For students to meet our expectations, we should meet theirs by being consistent.

An example of a confusing task $S^D$ is pointing to an object with one finger and holding up something else with your other hand. This is not considered a good task $S^D$ because it calls for the student to look at two things at the same time.

A good task $S^D$ is one that the student can easily understand, because along with it being consistent, it is simple, nonambiguous, and consists of one demand at a time.
Correct consequence must be:

1. Consistent with procedurally delineated consequence. A reinforcement procedure should follow each correct response, and an extinction or correction procedure (whichever is designated by the teaching procedure) should follow no responding and/or incorrect responses.

2. Properly conducted.
   A. Reinforcement procedures must:
      1. be initiated within two seconds after correct responses.
      2. not be initiated during student responding on tasks requiring a chain of responses (e.g. if the teacher says "good" while the student is tacting a particular sequence of numbers, consequence should be scored incorrect).
      3. be unambiguous (e.g. social reinforcement given with a smile and friendly tone of voice).
   B. Correction procedures must:
      1. be initiated within two seconds after the incorrect response (when used for incorrect responding) or be initiated between 4 to 10 seconds after presentation of task $S^D$ (when used for no responding).
      2. Include a verbal "no", (for incorrect responding only), and either modeling or effective prompting (whichever is designated procedure) of the correct response, unless the correct response is emitted by student before the correction prompt has time to occur. Also, if representation of task instructions specified by the teaching procedure, then correction procedures must contain task instructions consistent with the Task $S^D$ definition.
   C. Extinction procedures must:
      1. be initiated within two seconds after incorrect responses (when used for incorrect responding), or initiated between 4 to 10 seconds after presentation of task $S^D$ (when used for no responding),
      2. last at least four seconds, and
      3. consist of the teacher turning and holding face sideways — no eye contact with the student and no teacher verbalizations should occur.
CONSEQUATION RATIONALE

'We may best understand this category by examining all possible alternatives that follow the instructor's task instruction to the student. Then examine all possible counter responses (conseuation) the teacher could make.

<table>
<thead>
<tr>
<th>Student Response</th>
<th>Teacher Consequation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
<td>Reinforcement (e.g. say &quot;good&quot;, give edibles and/or pat on back).</td>
</tr>
<tr>
<td>Incorrect</td>
<td>Correction (&quot;no&quot;, represent task instructions-optional, and effect­ively prompt).</td>
</tr>
<tr>
<td>No Response</td>
<td>Extinction or Effective Prompt.</td>
</tr>
</tbody>
</table>

Consistency in conseuation of students' performance is of paramount importance. The SAP forms provide space for teachers to specify the exact conseuation procedure to be used for each instructional program. If the student's performance is consistently conseuated, they will learn quicker and also have a greater tendency to generalize acquired skills to different situations.
DATA DEFINITION: Teacher's recording of student performance.

Data recording consists of the teacher marking the data form indicating the student's performance. Correct data recording occurs when the teacher records data after the student response, but before presentation of the task instructions for the next trial. Correct data recording is defined as scoring the data sheet within 10 seconds after the initiation of the consequence procedure. Instances of presentation of the following trial's instructions without data recording for the previous trial will be defined as incorrect.
DATA RATIONALE

This category could prove to be very important for you. Its usefulness includes a record of your work with your students, as well as an essential tool in determining the effectiveness of various settings, people, reinforcers, times, etc.
Appendix E

I.T.T.P. EVALUATION

1. Do you feel this program is a valuable experience for instructors of SMI students?

2. Do you think the Skill Acquisition Program forms are useful for the types of skills being taught in your class?

3. Any suggestions for improvements?

4. Do you intend to continue using these forms?

5. Do you think learning the observer-feedback system is beneficial? Why?

6. Do you think the observer-feedback system is of any practical use in your class?

7. Any suggestions for improvement?

8. Did you find the activities required of this program exceedingly disruptive to your class?

9. Any suggestions for improvement?

10. Would you recommend participation in this program to other SMI classrooms?

11. Circle the one that you feel most appropriate and applicable, whichever the case may be.

   A) True (most of the time)        D) Both A and C
   B) False                        E) A hammer
   C) Occasionally true            F) None of the above (except E)
BIBLIOGRAPHY


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