A Model for a Self-Contained Videotape Training Program

Theodore D. Apking
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A MODEL FOR A SELF-CONTAINED VIDEOTAPE TRAINING PROGRAM

by

Theodore D. Apking

A Dissertation Submitted to the Faculty of The Graduate College in partial fulfillment of the requirements for the Degree of Doctor of Philosophy Department of Psychology

Western Michigan University Kalamazoo, Michigan August 1982
Many organizations have a frequent need for employee training, and thus spend substantial sums of money on training. In an attempt to develop a model training program for use in such organizations, a self-contained videotape program was tested for its cost-effectiveness. It included rules describing the tasks, prerecorded videotapes showing correct and incorrect performance of those tasks, and score sheets for use by trainees while scoring the appropriateness of those performances.

The program produced significantly more task improvement than did lecture and discussion. The written and videotape components improved performance regardless of which was presented first. Once the skills were learned, they transferred from the training to the work situation. Furthermore, high levels of trainee performance maintained throughout a two-week follow-up phase. The tasks in this particular application were one-to-one tutoring techniques for working with handicapped pupils.
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Theodore D. Apking
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GENERAL INFORMATION

Many organizations have high training costs resulting from frequent turnover or changing job designs. Employees are not productive during the time they are in training; therefore, organizational productivity may suffer. Another problem with frequent training is the cost of the preparation and presentation of materials (Boylan, 1980). These "time and preparation costs" can be reduced by using a training program which quickly teaches skills and does so without the constant involvement of a professional trainer. The experimenter has developed a self-contained videotape training program in an attempt to demonstrate that training programs can be both effective and inexpensive. The program design was guided by several of the recommendations presented by Engelmann (Note 1) and Markle (1978).

This model program was designed to teach one-to-one tutoring techniques to human service workers who tutor handicapped pupils, but its design should be appropriate for any task for which instructions can be written. It includes a pamphlet with concisely written rules for one-to-one tutoring, a prerecorded videotape showing correct and incorrect application of those rules demonstrated in short teaching episodes, and score sheets for use by
trainees in scoring the appropriateness of each tutoring episode. In summary, this training program presents precise rules describing the skills to be learned, requires active participation by the trainees, shows correct and incorrect performance of the task, and provides trainees with knowledge of their progress. Tennyson and Park (1980), in a review of the instructional design literature, suggest that these components are important to include in instructional materials. It was reasoned that these components are also important in a skills training program to be used in an organizational setting.

Early reports on the use of videotape equipment in training were limited to descriptions of activities with little or no empirical evidence supporting their effectiveness (Roush, 1970). Typical of these reports is one by Bosley (1968) in which episodes of teacher behavior were shown to education students in a university classroom. Similarly, Bibberstine (1971) reported that the use of edited videotapes of specific teacher actions were found to be valuable by students surveyed in teacher education classes. Borg, Kallenback, Morris, and Friebel, (1968) added written materials to their videotape instructional packages leading others to test various combinations of videotapes, written materials, audiotapes, and lectures in the instructional packages (Shook, Note 2; Taber, Note 3; Horton, 1975; Koegel, Glahn, and Nienmen, 1978; Koegel,

Horton was the first to report the use of a discrimination training format in a videotape training program, showing correct and incorrect use of descriptive praise. And teachers learned to use descriptive praise appropriately in the classroom. Following Horton's success, Koegel et al., (1977) developed a videotape training program and taught generalized behavior modification skills with it. The program included exposure to written materials, videotapes showing correct and incorrect use of behavior modification techniques with autistic children, and feedback sessions at 5-minute intervals while working with the children. Koegel et al., (1978) taught parents a set of general behavior modification techniques with a videotape training program incorporating three 30-minute lectures and brief demonstrations of the techniques shown on the videotapes. All of these procedures successfully taught trainees, but were lengthy (up to 25 hours) and required the presence of a skilled trainer, which made them costly to use. Although the above studies were not conducted in business and industry, the training techniques evaluated in them are often found in such settings whereas controlled research is not.

Training programs must be effective to merit use, so they must be carefully evaluated to see if they produce a change in behavior on the job (Tosti, 1980). Experiment 1
compares the self-contained videotape program with a more traditional lecture and discussion training program to determine the level of tutoring skill they each produce. Experiment 2 isolates the effect of the written and the videotape components of the self-contained videotape program.
EXPERIMENT 1

Introduction

The self-contained videotape training program was compared with an equal amount of time spent in lecture and discussion. After training, the experimenter measured the amount of improvement in each group's role-play tutoring performance.

Method

Trainees

Seventeen students in a freshman-level psychology class volunteered to participate in an experimental training program designed to teach one-to-one tutoring skills. Each student could earn the equivalent of one week's course credit for completing the assigned training activities, Table 1.
<table>
<thead>
<tr>
<th>Session</th>
<th>Duration</th>
<th>Discrimination</th>
<th>Lecture/Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30 min.</td>
<td>Review &quot;Guidelines&quot;&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td>10 min.</td>
<td>Questions and answers period over &quot;Guidelines&quot;</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td>50 min.</td>
<td>Quiz over &quot;Guidelines&quot; (Optional remediation and second quiz)</td>
<td>Same</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>15 min.</td>
<td>Review &quot;Guidelines&quot;</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td>5 min.</td>
<td>Questions and answers period over &quot;Guidelines&quot;</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td>10 min.</td>
<td>Individual role-play assessment</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>15 min.</td>
<td>Review &quot;Guidelines&quot;</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td>60 min.</td>
<td>View and score Training Videotape I twice</td>
<td>Lecture/Discussion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>15 min.</td>
<td>Review &quot;Guidelines&quot;</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td>45 min.</td>
<td>View and score Training Videotape II</td>
<td>Lecture/Discussion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>15 min.</td>
<td>Review &quot;Guidelines&quot;</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td>5 min.</td>
<td>Questions and answers over &quot;Guidelines&quot;</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td>10 min.</td>
<td>Individual role-play assessment</td>
<td>Same</td>
</tr>
</tbody>
</table>

<sup>a</sup>A pamphlet with definitions and examples of tutoring skills
Materials

Guidelines for One-to-One Tutoring

The experimenter wrote a 10-page pamphlet which described in nontechnical language the components of a one-to-one tutoring trial (Appendix A). The purpose of presenting the "Guidelines for One-to-One Tutoring" ("Guidelines") to the trainees was to give them definitions and examples of the tutoring skills they would learn during training. Study objectives (Appendix B) and a brief quiz which required the trainees to write each of the definitions accompanied the pamphlet (Appendix C).

One-to-One Tutoring Videotapes

The experimenter developed a two-part videotape training program to teach one-to-one tutoring skills to be used with low-performing or handicapped students. These videotapes were called Training Videotapes I and II. They were standard black and white 3/4-inch videotape cassettes, approximately 40 minutes in duration.

The videotapes began with a 2-minute introduction during which the experimenter described the purpose, design, and content of the training program, and they ended with a sequence of 15 training trials showing correct and incorrect use of the tutoring skills. Each training trial on the videotapes included a short (30-60 second)
role-play tutoring trial in which two actors worked through the activities in a tutoring trial, one actor playing the part of the tutor and the other playing the part of the handicapped student. One minute of silence with no image showing on the screen followed each trial on the videotape; then, a rolling graphic display without "voice over" appeared stating which rules the actor applied correctly and which ones he or she applied incorrectly. Also appearing with the graphic display were statements describing which parts of the rules stated in the "Guidelines" were not followed correctly during the trial. The arrangement of errors in the application of the rules followed strategies for teaching concepts extracted from the literature on instructional design (Engelmann, Note 1; Markle, 1978). As the videotapes progressed through the trials, the number of errors within each trial was more likely to increase than decrease, and the errors became more difficult to detect.

Score Sheets

During the sessions in which the trainees viewed and scored the videotapes, they used a score sheet to mark whether the application of the instructional techniques by the actor was appropriate in each trial. These score sheets listed abbreviations for each of the subcomponents of the rules stated in the "Guidelines." The trainees
wrote either "+" (correct) or "-" (incorrect) next to each corresponding subcomponent of the one-to-one tutoring model during each training trial on the videotapes (Appendix D).

**Role Player Scripts**

Trained role players acted as handicapped pupils during role-play assessment sessions. The role players followed scripts to ensure that the trainees would be exposed to a variety of pupil behavior. These scripts specified whether the role players should attend to the tutor before the delivery of each instruction, and whether to respond correctly, incorrectly, or in a nontarget fashion. Fifty scripts were written with randomly determined combinations of behaviors, and ten scripts were randomly selected for use during each assessment sessions (Appendix E).

**Experimental Conditions**

The experiment took place for five consecutive days. Each of the five sessions lasted from 60-90 minutes (see Table 1). The trainees received the "Guidelines" in their psychology classes the day before the first experimental session. The instructor of the class announced that they should read and study the "Guidelines" before that session, and he reminded them that unsatisfactory performance on the quiz would result in their being dropped from the
study.

Daily activities remained the same for all trainees until the third experimental session when they were randomly assigned to groups. During the third and fourth days, trainees participated in their respective training activities. These manipulations met the requirements of a between-groups comparison experimental design with a pretest and a posttest.

Videotape Discrimination Training Group

During the third experimental session, the trainees in the discrimination training group viewed and scored Training Videotape I twice. In the following session, they viewed and scored Training Videotape II once. While the videotapes were running, an assistant walked around the room, and occasionally, after the trainees had seen the statements indicating correct scoring, he asked those who had scored the entire trial correctly to raise their hands and praised them. The subjects were permitted to discuss the videotape and "Guidelines" quietly among themselves but not with the experimenter while the videotape was running.

Lecture/Discussion Control Group

The control group activities were concurrent with the discrimination training. The experimenter lectured over
the history, theory, and the application of the one-to-one model of tutoring and answered questions about it. Tutoring techniques were not modeled for the trainees. In the second lecture, the experimenter discussed the technical terminology found in the "Guidelines" and described the prerequisite skills for conducting successful one-to-one instruction. During the last 30 minutes of this session, the experimenter asked each of the trainees to recite specific rules that were written in the "Guidelines"; also, each trainee was asked to describe the tutor's correct actions in a hypothetical tutoring trial after being given an instruction and the pupil's response to the instruction.

Evaluation of Training

Pretest and posttest measures of the trainees' tutoring performances were obtained in the role-play assessment sessions which were videotaped. These sessions took place in two rooms concurrently with a role player (handicapped pupil), camera assistant, session supervisor, and trainee present in each room. The session supervisors began the sessions with a short explanation of the activities that would occur during the ten-trial assessments. The trainees each sat at a small table across from the role player and received a written description of the behavior they were to teach. The trainees were randomly assigned to a starting time and a role player for the two assessment sessions.
sessions.

After training and assessment were completed, the experimenter and assistants scored the assessment videotapes for compliance with the rules stated in the "Guidelines." Then, the experimenter calculated the gain scores for each group.

Reliability of observations

A second observer viewed and scored 24% of the videotaped-assessment sessions to establish the reliability of the pretest and posttest measures. Reliability was defined as agreement between independent observers on the occurrences and nonoccurrences of appropriate tutoring behavior as written in the "Guidelines." Observer agreement was calculated by dividing agreements by agreements plus disagreements, and multiplying by 100. The mean percent agreement was 92%.

Results and Discussion

The discrimination training procedure produced significantly larger improvements than the lecture and discussion procedure in the level of tutoring skill from pretest to posttest, Table 2. These improvements were consistent across all components of the tutoring model. No systematic pattern of errors could be discerned across trainees or components. However, when trainees failed to perform
Table 2
Pretest and Posttest Scores by Group

<table>
<thead>
<tr>
<th>Role-Play</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Gain</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discrimination Training</td>
<td>43.04%</td>
<td>77.27%</td>
<td>34.23</td>
<td>5.27*</td>
<td>6</td>
</tr>
<tr>
<td>Lecture/Discussion (Control)</td>
<td>53.81%</td>
<td>67.29%</td>
<td>13.48</td>
<td>1.23**</td>
<td>7</td>
</tr>
</tbody>
</table>

*P < .01
**P > .01

according to the "Guidelines" they simply missed the opportunity to respond. In addition to producing larger gains in individual performance, the discrimination training procedure resulted in higher post-training performances in 7 of the components comprising the instructional model. It is clear that discrimination training is superior to the more traditional lecture and discussion training format characterized by the control procedure which did not produce significant improvements in tutoring skill.
EXPERIMENT 2

Introduction

The findings from the first experiment suggested that videotape discrimination training was a reasonable alternative to the lecture and discussion method for teaching one-to-one tutoring skills. The purpose of the second experiment was to (1) determine the relative contribution to tutoring performance of reading and studying rules and viewing and scoring the training videotape, (2) establish the effect of extended training time in each condition, (3) test for maintenance of training effects in the absence of training and review, and (4) test for transfer of the training effect from the role-play to regular teaching situation.

Method

Trainees

Five junior-level psychology students volunteered to serve as trainees. The experimenter selected them from a group of students attending an advanced behavior modification internship at a school for the handicapped. Instead of attending the regular internship, these five students who had missed the introductory internship and thus had

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Experimental Conditions

The trainees were exposed to the various conditions in a multiple-baseline across subjects design. They advanced from one condition to the next after their performances stabilized or time limitations required movement. The experimental conditions were Guidelines, Videotape Discrimination Training, Maintenance, and Generalization. All trainees began the experiment in Baseline and then moved to either Guidelines or Videotape Discrimination Training. Three of the five then moved to Maintenance after completing both training activities. Three of the five trainees moved on to Generalization. While one of the other two stayed in Discrimination Training for the duration of the experiment, one stayed in Maintenance. Sessions lasted from 30-60 minutes and occurred five days a week.

Baseline

During Baseline, all the trainees participated in role-play tutoring sessions similar to those described in Experiment 1. These sessions were called assessment sessions. The trainees did not receive written material pertaining to tutoring before or during Baseline. On the first day of Baseline, they were asked individually
to teach two different behaviors to the role player, "arms up" and "point to the red pen." The experimenter told them they had five trials to teach each behavior, and that they should say "stop" when each trial was over. As in Experiment 1, the experimenter gave each trainee written descriptions of the behaviors they were to teach. All other aspects of the assessment sessions were the same as in Experiment 1. The trainees were not told in advance about the next day's activities.

**Guidelines Condition**

While the trainees were in the Guidelines Condition, they read and studied the pamphlet, "Guidelines for One-to-One Tutoring," and took daily quizzes over their reading (Appendices A and B). After taking the first quiz, which was the same quiz used in Experiment 1, the trainees conducted their first daily, role-play assessment session in this condition. On subsequent days, the trainees reviewed the "Guidelines" for approximately 10 minutes, returned them to the experimenter, and took a 5-minute quiz with one question from their first quiz (Appendix C) before conducting their assessment sessions.

**Videotape Discrimination Training Condition**

The activities in the Discrimination Training Condition were the same as those in Experiment 1, except that
the duration of the condition varied according to the performance of individual trainees and Training Videotape II was used. This more advanced training videotape was used because the trainees were upper-level students. Following the training activities each day, the trainees participated in role-play assessment sessions like those in Baseline.

Maintenance Condition

On the first day of the Maintenance Condition, the experimenter returned the "Guidelines" to the trainees, and told them that they were no longer required to review the "Guidelines" before their daily assessment sessions as they had been in both the Guidelines and Discrimination Training Conditions. Further, he stated that there were no more daily quizzes, but the trainees could review their "Guidelines" whenever they desired.

Generalization Condition

In the Generalization Condition, trainees moved to a secluded area in a public school for the handicapped. A 9-year old handicapped male student replaced the role player in the assessment sessions. This handicapped student was diagnosed as learning disabled. He displayed a variety of disruptive behaviors, one of which was running away from tutors.
Before the trainees taught the student in the assessment sessions, they were given a complete tour of the school, and the opportunity to meet and play with several of the handicapped students including the boy they would be teaching. A school psychology intern conducted the tour and explained some of the characteristic disruptive behaviors displayed by the student participating in the assessment sessions. Specifically, the intern told the trainees to be firm whenever the student attempted to run away from the session and to physically restrain him, if necessary. Finally, the experimenter provided the trainees with written descriptions of the two behaviors they were to teach during the assessment session, "block-building" and "puzzle-solving." Each of the trainees taught the same behaviors using the same procedure, which followed the tutoring model they had learned.

The sessions began when the trainee and the handicapped student sat facing one another at a small table. The experimenter and the intern viewed each session on a video monitor, and were prepared to intervene if necessary. Occasionally, it was necessary for them to stop the session and constrain the handicapped student who had run away from the trainee. As during the role-play assessment sessions in the previous condition, all of the trainees worked with the same individual during the assessment; the order in which they worked was random. All other

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details of the assessment sessions were the same.

Results and Discussion

Reading and studying written instructions in combination with viewing and scoring videotapes produced effective tutoring skills regardless of the order of presentation. But trainees who read and studied the written instructions before viewing and scoring the videotape learned faster than those who worked with the videotape first. Furthermore, once the trainees learned the tutoring skills, the skills persisted in the absence of training and review in all three cases. The skills also transferred to a regular teaching environment in two of three cases, Figure 1.

Trainees 1 and 2 showed marked improvement over Baseline performance after they had read the "Guidelines." Trainee 3 stayed at her already acceptable level of performance above 80%. Her experience teaching normal preschool children may explain her high level of performance during Baseline, and why simply reading and studying the written materials did not greatly improve her tutoring.

After the Guidelines Condition, Trainees 1, 2, and 3 moved to the Videotape Discrimination Training Condition in which all three improved their tutoring skills attaining 94.33%, 86.33%, and 96% compliance with the "Guidelines" over the last three sessions in the condition.
Figure 1. Percent compliance with "Guidelines" in one-to-one sessions
The three trainees then moved to the Maintenance Condition where they continued to perform at approximately the same levels they had achieved in the Discrimination Training Condition. Trainee 1 remained in this condition for two weeks and performed at an acceptable level throughout that time.

Trainees 4 and 5 improved their tutoring gradually when they moved to the Videotape Discrimination Training Condition after Baseline without reading and studying the "Guidelines." Although their tutoring improved, they did not achieve the high levels during the Discrimination Training Condition achieved by the others who had worked through the Guidelines Condition first. Trainees 4 and 5 obtained 72% and 81.6% compliance with the "Guidelines" during their last three sessions in the Videotape Discrimination Training Condition. After working through both components of the training program, however, Trainees 4 and 5 eventually achieved the same high level of performance as Trainees 1, 2, and 3 after they had completed both components of the training program.

Reading and studying the "Guidelines" before viewing and scoring the videotape appeared to produce effective tutoring more quickly than working with the videotape before learning the "Guidelines." The two trainees who worked with the videotape before learning the rules for one-to-one tutoring spent between 7 and 10 hours with the
videotape before their performance in the tutoring sessions approached the level of the others, who spent three or four hours less with the videotape. In addition, they made more errors scoring the videotape and complained more about the rigors of the daily training sessions. After several days of videotape training, Trainee 5 became upset and said that she was considering dropping out of the study because scoring the videotape was so frustrating. There were other less severe incidents with Trainee 4, also.

Trainees 2 and 4 tutored as well in the regular teaching situation as they did in the earlier conditions with a role player. Trainee 3 did not. Although she demonstrated effective tutoring skills in the Maintenance Condition with a role player, she only obtained 78.67% compliance with the "Guidelines" in the Generalization Condition. Her previous teaching experience with normal children may have interfered with the effects of the current training program.

In Experiment 2, it was clear that reading and studying the "Guidelines" markedly improved tutoring performance in subsequent sessions. It may be that the reason these written materials exerted control over tutoring was that each component of each technique was clearly specified and illustrated with an example or two. The explicit detail of the written materials may account for
their effectiveness (Krumhus and Malott, 1980). If written materials fail to exert control over the behaviors they describe, it may be that they are not sufficiently detailed.

All five trainees agreed that reading and studying the "Guidelines," and viewing and scoring the videotape were valuable experiences. They also suggested that other psychology students be required to work through similar training programs. These reactions were taken from a questionnaire the trainees completed after the last session (Appendix F).
GENERAL CONCLUSIONS

The current research showed that a self-contained videotape training program which required trainees to learn rules and actively score videotapes can teach tutoring skills. Trainees who participated in this program achieved an acceptable level of competence with these skills, and maintained that competence for up to two weeks without further training. In addition, these tutoring skills transferred from a role-play to a classroom situation in two of three cases.

The self-contained videotape program produced these training effects without lectures or discussion. Therefore, it can be used repeatedly without requiring the presence of a trainer. Furthermore, this program can be used successfully with groups of trainees as in Experiment 1, or with individuals who work at their own pace as in Experiment 2.

In everyday use, the trainees could read the written materials and begin viewing the videotape in the same day. This arrangement might reduce the time required for trainees to master the skills from the time required in Experiments 1 and 2. The written materials and videotapes were presented sequentially for the purpose of experimentation only.
The training format used in the current program would seem appropriate for teaching any skill, or set of skills, for which instructions and videotaped demonstrations of correct and incorrect use can be prepared. Because this training method is effective, easily employed, and usable with a variety of skills, it seems ideal for organizations trying to reduce training costs.
REFERENCE NOTES


REFERENCES


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REFERENCES
(cont'd)


APPENDICES
APPENDIX A

ONE-TO-ONE TUTORING TRAINING PACKAGE

The materials included in this packet are to be used during the first step of your training program on one-to-one tutoring with low-performing pupils. In this first step of your training, you will read and learn the guidelines for conducting one-to-one tutoring sessions.

As you will notice, the written guidelines are presented in naturally occurring categories: (1) Pretask Component, (2) Task Component, (3) Posttask Component, and (4) Correction Loops. It is to your advantage to study the contents of each category as a unit. Try to learn subparts of the first component before moving on to the second, and so on.

General Guidelines for One-to-One Tutoring

1. Trials are defined as a sequence of events including Pretask, Task, Posttask Components (including correction loops) which end with a correct pupil response.
2. Only the first pupil response in each trial is recorded.
3. In all trials the pupil has three possible reactions to the instruction: (1) correct responding, (2) incorrect responding, (3) nontarget responding.
4. All correct responses must be followed by a reward.

5. All nontarget responses must be followed by a two-second delay and the correct loop which includes a prompting sequence.

6. All incorrect responses must be followed by a two-second delay and the correct loop which includes a modeling sequence.

Pretask Component

Attention Signal (AS)

In order to teach a pupil, the tutor must have the pupil looking toward him or her; otherwise, the pupil might miss the instructions presented by the tutor. An attention signal is an overt response or set of responses made by the tutor which gets the pupil's attention. An attention signal should be used whenever the pupil is not attending to the tutor. In a session in which a tutor is trying to teach a pupil, Johnnie, to pick up a toy on command, Johnnie must be attending to the tutor in order to be able to respond to the instruction: "Pick up the toy." If Johnnie is looking around the room or under the desk, for example, the tutor must use an attention signal. The tutor might say, "Look at me," or "Pay attention," or the tutor might touch Johnnie's hand to get his attention.
Now, if Johnnie was sitting quietly looking at the tutor, the tutor would not need to present an attention signal.

Here are the two guidelines for using an attention signal:

1. An attention signal is any overt response(s) made by the tutor which evokes an attention response (defined below).
2. An attention signal is used whenever the pupil is not attending to the tutor.

NOTE: If the pupil is attending, the attention signal is not required. Score the data sheet as if a correct attention signal had occurred.

Attention Response (AR)

So that you will be able to recognize when a pupil is attending, guidelines for the attention response are very precise because it is important for the pupil to be behaving appropriately when the tutor presents instruction. The pupil is emitting an attention response when he or she is looking at the tutor, or in the general direction of the tutor, and is sitting quietly when the instruction is given. "Sitting quietly" is not quite technically correct; to be more precise, the pupil should not be engaging in behavior which is incompatible with the target response or engaging in self-stimulatory behavior.

Behaviors which cannot occur at the same time as the
target response are incompatible with the target response. For example, if the target response is picking up the toy on command, then responses which involve using the hands to manipulate objects or parts of the body would be considered incompatible behaviors. Self-stimulation is usually a highly repetitive action; often it involves excessive manipulation of body parts or objects. Examples of self-stimulatory behaviors are repeated rocking, wringing hands together, or rubbing body parts.

Here are two guidelines for the attention response:

1. An attention response is occurring whenever the pupil makes eye contact with the tutor and/or when the pupil's head is oriented toward the tutor when the instruction is given.

2. An attention response is not occurring if the pupil is engaging in behavior which is incompatible with the target response or if the pupil is engaging in self-stimulatory behavior.

One-Second Pause (1")

After the pupil emits the attention response, the tutor pauses briefly before giving the instruction. This 1-second pause keeps the attention signal from interfering with the instruction. If the tutor is trying to get the
pupil's attention by saying, "Look at me, look here," and the pupil then looks at the tutor, the tutor must pause for 1 second before saying, "Pick up the toy."

Here is the guideline for the 1-second pause preceding the instruction:

1. The tutor should pause briefly, not emit any overt response directed at the pupil, for a period of time not less than 1 second and not more than 3 seconds before the instruction.

Task Component

**Instruction (s^D)**

After the attention response and the 1-second pause, the tutor presents the instruction. The instruction should cue the pupil to respond. In order for the tutor to have the best control over the pupil's responding, there are two guidelines that must be followed when presenting the instruction.

The instruction must be the same every time; in other words, it must match the instructional objective exactly. This allows the tutor to establish the most effective control over the pupil's response. Also, the tutor should present the instruction only once. Presenting the instruction only once ensures the best control over the correct response by the instruction. If the pupil responds after

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one instruction sometimes, and after two or more instructions at other times, it is difficult to tell whether the pupil has learned to respond to the instruction in those situations (i.e., situations in which the pupil does not respond after the first instruction but responds later, after a second or third instruction). It may be that the pupil just happened to respond, and the response was under the control of some other stimulus in the classroom.

Here are the two guidelines for the instruction:

1. An instruction matches the instructional objective exactly, word for word.
2. An instruction must be presented only once for each opportunity for the pupil to respond (once during each task component).

Correct Response (CR)

If the pupil follows the tutor's instructions and performs the target response correctly, a correct response has occurred and should be scored. The correct response is the desired response, the one the tutor is trying to get the pupil to emit. So that the correct response is easily recognizable, two simple guidelines describe it.

The two guidelines for the correct response are:

1. A correct response is a response which occurs at the level of independence (prompt level) specified by the instructional objective.
2. A correct response must occur within 3 seconds of the instruction.

**Nontarget Response (NT)**

If the pupil does not make the correct response, he or she might be engaging in nontarget responding. Nontarget responses are responses toward other things (other people or objects) in the tutoring setting. These nontarget responses occur when the target response should be occurring. A few examples of nontarget responses that might occur instead of the target response are: looking under the table, sitting without motion, or staring into space.

Here are the guidelines for nontarget responses:

1. Nontarget responses are not approximations of the target response. (An approximation of a target response is a response which is only part of the target response or a response which required more prompting from the tutor than the instructional objective specifies.)

2. Nontarget responses occur in the 3 seconds following the instruction in place of the target response or an approximation of the target response.
Incorrect Response (IR)

At times the pupil will emit a response and not be engaging in nontarget responding, but the response is not correct. Score these approximations of the target response as incorrect responses. Incorrect responses include any response which is something like the target response or in the same response class as the target response. An approximation of the target response is a response which is only part of the target response, or a response requiring more prompting from the tutor than the description of the correct response allows. Responses in the same response class are physically (topographically) similar to one another. For example, picking up a cup, a box, a chair, or a coin might all be considered to be in the same response class of picking up objects. So, in general, incorrect responses are "something like" the target response as described above.

Here are the guidelines for incorrect responses:

1. Incorrect response are target responses not emitted at the prompt level specified in the behavioral objectives.
2. Incorrect responses may be approximations of the correct response or responses in the same response class which do not meet all of the requirements described in the instructional
objective.

3. Only consider incorrect responses occurring in the 3 seconds following the instruction.

Posttask Component

Reward ($S^{R+}$)

Tutors should present rewards immediately after every correct pupil response to make the pupil more likely to emit the correct response in the future. Some people prefer to call rewards reinforcers. (Reinforcers are events or objects which—when presented immediately after a response—make that response more likely to occur in the future.) In order to make the reward most effective, all vocalizations which occur with the reward or as part of the reward should be pleasant and relevant to the correct response.

Here are a few guidelines for rewards:

1. A reward (positive reinforcer) must be presented after every correct response.
2. Rewards must be presented immediately, within 2 seconds, following the correct response.
3. All vocalizations occurring at the same time as or shortly after the reward should be positive and accurate.
Two-Second Delay (2")

After each incorrect or non-target response, the tutor should ignore the pupil for a brief period of time to discourage future incorrect or non-target responses. It is very important that every incorrect or non-target response produces a period of time without reward for the pupil. During the time that the trial is being delayed because of incorrect or non-target responding, the tutor should not attend to the pupil in any manner.

Here are the guidelines for the 2-second delay:

1. Delays should follow all incorrect and non-target responses.
2. The tutor must not interact or have eye contact with the pupil during the delay period.
3. The delay must last at least 2 seconds and no more than 5 seconds.

Correction Loops

The pretask, task, and posttask components of a one-to-one tutoring session have been described so far. These components specify the steps for getting the pupil's attention response, presenting the instruction, and consequating the pupil's response. The correction loop sequences will describe the steps necessary to get a correct response from the pupil when the pupil's first response is incorrect.
or non-target. In some cases, modeling the response will be necessary; in other cases, prompting will be necessary.

**Correction for Non-Target Responses**

When the pupil's response is a non-target response, prompting is required because the instruction did not get the pupil to attempt the target response. The tutor must begin the correction loop following the 2-second delay and not more than 5 seconds after the onset of the delay. Here are the sequence of steps for the correction loop and the guidelines for the new step—the prompt.

**Instruction (S^D_2)**

As was the procedure in the earlier part of the trial, the tutor must get the pupil's attention and present the instruction. This second instruction is just like the first one and follows the same guidelines stated previously. Remember to get the pupil's attention before presenting the instruction, although in many cases the pupil is already attending.

**Prompt (P)**

As the tutor presents the second instruction, he or she prompts the target response. A prompt is a method of physically guiding a correct response. For example, if the target response is pointing to an object, then a tutor...
may take hold of the pupil's hand and point to the object if the pupil fails to do so without assistance. Prompts occur at different levels. In the example above, the tutor may find that after several trials in which the hand was held firmly, it becomes possible to hold the hand loosely or merely tap the hand in order to get the correct response. These varying degrees of control are called prompt levels.

Here are the guidelines for the prompt:

1. The tutor physically guides the pupil through a correct response.

2. The prompt must be presented concurrently with, or immediately following (2 seconds), the S^D.

**Reward (S^{T+})**

As is always the case, the tutor rewards the correct response. In this case, the correct response was prompted by the tutor. Follow the guidelines for rewards.

Following the correct response which was prompted and rewarded by the tutor, the tutor should then repeat the sequence of pretask, task, and posttask components again, ending with a correct response. All trials must end with a correct response, so the tutor must get the pupil's attention, again after the prompted response, and present the instruction. The trial continues until the correct
response occurs and it has been rewarded.

**Correction Loop for Incorrect Responses**

If the pupil emits an incorrect response, the tutor must model the correct response during the correction loop. There is no need to prompt the response because the instruction is getting the student to attempt at least an approximation of the target response. The tutor must begin the correction loop following the 2-second delay and not more than 5 seconds after the onset of the delay. Here are the sequence of steps for the correction loop for incorrect responses and the guidelines for the new step—the model.

**Instruction (S\textsuperscript{D2})**

As was the procedure in the earlier part of the trial, the tutor must get the pupil's attention and present the instruction. The second instruction is just like the first one and follows the same guidelines stated previously. Remember to get the pupil's attention before presenting the instruction. Many times the pupil is attending, but be sure.

**Model (M)**

Remember, in the correction loop the tutor takes a more active role in helping the student make a correct
response. After an incorrect response, the tutor should demonstrate the correct response at the same time or immediately after giving the instruction. It is important for the tutor to perform the target response completely and correctly so the pupil can see an ideal model of the correct response.

Here are the guidelines for the model:

1. The tutor must perform the target response correctly.

2. The pupil must be attending during the presentation of the model and the instruction.

3. Instruction must be concurrent with, or immediately preceding the model.

Instructional Objectives Shown on Videotapes

**Arms Up**

The pupil must extend his or her hands above the head. One hand raised above the head should be scored as incorrect, as should one or both arms extended but with hands NOT raised over the head.

**Touch the Truck**

The pupil must make contact with the truck with any part of the hand. If the pupil points at the truck or touches the table near the truck, the response should be
scored as incorrect.

**Touch Your Nose**

The pupil must make contact with his or her nose with some part of the hand. If the pupil makes contact with other parts of the face with his or her hand, the response should be scored as incorrect.
APPENDIX B

OBJECTIVES FOR QUIZ

Trainees should be able to:

1. State the guidelines for the pretask, task, and posttask components.

2. State the guidelines for the correction loops for nontarget and incorrect responses.

3. Describe a sequence of events that would make up a training trial (specifying tutor and pupil behaviors).

NOTE: If you have questions about the written materials, ask us.
APPENDIX C

QUIZ OVER ONE-TO-ONE TUTORING

1. State the guidelines for: pretask, task, and posttask components.
2. Describe when a tutor should model a response for the pupil.
3. State the guidelines for the model.
4. Describe when a tutor should prompt the pupil's response.
5. State the guidelines for the prompt.
APPENDIX D

SCORE SHEET

PRETASK
- AS
- AR
- 1"

TASK
- SD1

*PUPIL
- Δ CR
- NT
- IR

POSTTASK
- Δ SR+
- 2"
- 2"

CorRECTION LOOP

PRETASK
- AS
- AR
- 1"

TASK
- SD2
- P
- SR+

PRETASK
- AS
- AR
- 1"

TASK
- SD3

*PUPIL
- CR
- NT
- IR

POSTTASK
- SR+
- 2"
- 2"
APPENDIX E

SCRIPTS FOR ROLE PLAYERS

Assessment Script Trial No._______

Role Player Behavior

Before AS  Self Stim
           Incompat Beh
           Attend

After AS   Attend

After SD   Correct Response
           Incorrect Response
           Non-Target Response

Correction Loops

Before AS  Self Stim
           Incompat Beh
           Attend

After AS   Attend

SD        Follow Prompt or Model

Before AS  Self Stim
           Incompat Beh
           Attend

After AS   Attend

After SD   Correct Response

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APPENDIX F

QUESTIONNAIRE

Psychology 351 (Spring 1981)
Laboratory Section Questionnaire

1. What was the best aspect of the training program?
2. What was the worst aspect of the training program?
3. How many hours total did you spend studying the Guidelines for One-to-One Instruction?
4. Did you find the Guidelines difficult to understand? YES NO
5. How many times should future trainees be required to view the videotape on one-to-one instruction? 1 2 3 4 5
6. Did you share information about the Guidelines or videotape with other members of the dissertation group? YES NO
7. Should future trainees be required to role-play? YES NO
8. Do you think you learned enough about one-to-one instruction that you would feel comfortable working with a handicapped person? YES NO
9. Do you think a training program consisting of reading the Guidelines, followed by a quiz over the Guidelines, and viewing the videotape would be a valuable

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learning experience for psychology majors?
YES NO Why or why not?

10. Please write, in a short paragraph, any information that might help the experimenters interpret the data obtained on your performance in either the role-play situation or at Croyden Avenue School.

Thank you for a very enjoyable spring session. Best of luck -- Ted
BIBLIOGRAPHY


Schultz, N. L. An evaluation of a videotape discrimination training program to teach one-to-one tutoring skills. Unpublished manuscript, Western Michigan University, 1980.


