Programmed Activity for the Training of Observers

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PROGRAMMED ACTIVITY FOR THE TRAINING
OF OBSERVERS

BY

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INTRODUCTION AND RATIONALE

The goal of clinical training programs in speech pathology is to prepare clinicians to provide effective, efficient, accountable therapy. Training programs which are successful are those in which the graduates are able to apply skills learned through various activities (lectures, readings, demonstrations, etc.) Although the American Speech and Hearing Association (ASHA) has established guidelines for acceptable graduate criteria (1963), there is considerable leeway as to how the training programs shall be set up and what information shall be imparted at the undergraduate level.

Boone (1975) addressed the problems facing speech pathology today. He reported that ASHA requirements for clinical experience with the various pathologies are unrealistic, in that all graduates will not be trained competently in all areas. We need procedures, techniques, and knowledge "...but most important we need an educational philosophy which will carry us through client after client, regardless of his disability (Boone, 1975)." This philosophy should consist of "starting where the client is." As clinicians, we should identify the critical symptoms and take baseline measurements. Then, with these measurements, we can plan strategies and manipulations. Learning to take these measurements
and the effective use of them is the basis of accountability and a scientific "art of therapy" (Boone, 1975).

Boone (1975) advocated a scientific approach to the diagnostic and therapeutic problems presented by diverse clients, in contrast to Colby (1962) who has described therapy as:

a practical art, a craft like agriculture, or medicine or wine making in which an artisan relies on incomplete fragmentary knowledge and empirically established rules traditionally passed on from master to apprentice. The artisan lacks a systematic, thoroughly tested or well defined set of explanatory principles. His scraps of knowledge are not simply applied to an individual case but "interpreted" for each individual case in accordance with the artisan's help, not to make him an applied scientist which cannot be done anyway— but to elucidate acute difficulties in the art.

While this may be an accurate description of the creative aspects of therapy, authorities (Adair, 1967; Boone & Stech, 1970; Boone & Prescott, 1972) agree that most aspects of teaching behavior can be defined behaviorally. Schultz (1972) attempted to dispel the notion "...that clinical skill has some underlying mystique which, while recognizable, is too elusive or complex or mysterious to be taught." Unfortunately, traditional training procedures have, as Colby indicated, lacked an operationalized structure.

"The complete training sequence for clinicians and teachers in the 'helping professions' such as counseling, speech therapy, teaching, or clinical psychology is a lengthy and complex
procedure (Ingram, 1974). Students learn clinical skills by lectures, readings, demonstrations, observations, and supervised practicum (Irwin, 1965). The student in speech therapy usually starts his clinical career with observations assigned as a part of the course work. The rationale for observation is based, in part, on the learning theory of Bandura (1969) who stated that new modes of behavior are acquired by watching others. From the status of observer, the student moves on to the position of assistant clinician, and then to clinician (Van Riper, 1965).

This study is concerned with the first of the three stage process, the pre-practicum or observational stage. It is important for the student to have a clear perception of the skills to be learned in this and all phases of practicum; therefore, it is desirable and necessary to provide a structured training program for student observers.

Training Programs and Procedures

Speech Pathology. Some 50 articles concerning clinical training have been published by Asha (Ingram & Studen; 1967; Kaplan & Dryer, 1974), yet there remains a lack of research dealing directly with training procedures, and more specifically with the training of students to observe. Kaplan and Dreyer (1974) have attributed this "to the newness of the field as a theoretical discipline, the breadth and complexity of topics in
the field, and especially the difficulty of systematic exploration in the area of clinical training."

In 1963, an American Speech and Hearing Association Conference group considered specific ways to strengthen the clinical training programs. Resolutions passed by the group included recommendations for gathering data and forming specific guidelines to insure adequate supervision. They recommended establishing minimum requirements to involve major kinds of clinical problems in a variety of settings, leading to professional competence. The group also considered the definition of the field, the selection of students, the graduate curricula, and some techniques of teaching and learning.

In 1965, Van Riper indicated a lack in the training programs in the field because of an overemphasis upon research and teaching and the tendency to view supervision of clinical practice as less important. He stated that "information is not enough...Our major purpose is to train our students to be clinicians." Ward and Webster (1965) investigated the evaluation of training of speech clinicians and pointed out the need for applicable, relevant practice opportunities and experiences for students. Their primary concern, however was the development of the student as a human being, as well as a clinician. The emphasis of the training program was the growth of compassion and creativity in the
student clinician.

At the 1966 ASHA Convention, Miner (1967) described her interest in improving supervision of clinical practicum and reported upon a presentation given to the Convention. Prather (1967) explained the approach to practicum used at the University of Washington, where careful evaluation is stressed in a client-oriented program. Clinical supervision is directed toward helping the student learn to evaluate his therapy and the progress of the case by using lesson plans and discussion.

Kunze (1967) presented a training program in behavioral observation based on the notion that observation of speech and language behavior is the foundation of all diagnosis and treatment in communicative disorders. The recording and analyzing of the behavioral events is done in terms of a "communicative unit," on a Behavioral Event Record. Practice is obtained for the student by providing him with video-tapes and films of various disorders.

Training has also been studied by Boone and Goldberg (1969) and Boone and Stech (1970) who demonstrated that audio and video tape confrontation are effective tools in training clinical personnel. In 1972, Boone and Prescott described a 10-category system to add quantitative aspects to the analysis of therapy. Their content and sequence analyses included categorizing clinician and client stimuli and responses in order to identify strengths and
weaknesses in the therapy process. The procedures in the training of students to use the system and an example of a hypothetical dialogue and analysis was also presented.

Shultz and Carpenter (1973) suggested that the ability to select an appropriate therapeutic model should be the crux of the training program. They reviewed three models of clinical interaction involving behavior and attitude change on the part of the client and the clinician.

More recently, Starkweather (1974) proposed the use of behavior modification in the training of speech clinicians. He described the procedures used, and some of the advantages of the system, including the fact that feedback is immediate and specific to small units of the therapeutic activity.

Kaplan and Dreyer (1974) suggested that along with the learning of skills and methods of treatment, training should also include conceptualization of the clinician-client relationship. They hypothesized that self awareness training would increase and improve students' verbal and non-verbal behavior. This training was facilitated by the use of video tape recordings and playbacks. In a study concerning video tape confrontation in teaching communication skills, Ingram (1974) reviewed the literature which referred to the use of video taping as a useful training technique for demonstrations and confrontations.
Education. Through observation, participation, student teaching, laboratory experience and internship, the prospective teacher gains insight into educational procedures. Cooper and Allen (1971) described the use of micro-teaching as a technique for pre-service training of student teachers. The usual format of micro-teaching was explained, as well as, the rationale and evidence of the effectiveness of the model. Cooper and Stroud (1967) stated that immediate feedback on teacher effectiveness may be included in the micro-teaching videotape. "For this to be a truly valuable learning device, it is important that the supervisor point out things to watch for, using only small taped segments (Cooper and Stroud, 1967)."

Douglas and Pfeiffer (1970) suggested that video taped micro-teaching can be adapted to improve education. Perlberg and Theodore (1972) stated that micro-teaching facilitates the gathering of data both in the time expended and in structured conditions of the procedure. Conferences following classroom observation are more productive when video taped segments of the teaching sequence are available.

A revised form of micro-teaching is used at the University of Texas Teaching Laboratory (Davis, 1970). To add reality to early practice experiences, the students-in-training participate in the micro-teaching both as teacher and student, and thereby are able to give and receive focused feedback (Davis, 1970). An examination
of the research on the effectiveness of micro-teaching was done by Manis (1973) who investigated the variables used in the studies and focused on the possible uses of the model in teacher training.

Cruickshank (1971) observed many ways that simulations, an alternate training technique, could and have been used and the advantages of this instructional aid. Some current video taped simulation programs for pre-service and in-service teacher education are presented by Peck (1971). He discussed the preparation and advantages of simulations in teacher training. Some of the advantages cited were: (a) It affords the opportunity to solve problems faced in the classroom in a hypothetical situation. (b) It compliments most courses in the educational sequence. (c) It can provide remedial help in an unthreatening manner. (d) It is low cost in comparison with other methods of demonstration. (e) It permits a bridge between classroom theory and practice. (f) It is a substitute for unstructured observation and participation (Cruickshank, 1971; Peck, 1971).

An assessment of a programmed instrument for training teachers of exceptional children was made by Walker (1973). It was found by pre- and post-test measures that the programmed approach was more effective in teaching the use of an analysis system than an instruction book.

Educators have evidenced interest in structuring observational techniques to aid in analysis of teacher training (Jacobs, 1971;
Brandt, 1973; Rath, 1973; Medley, 1973; Harty & Ritz, 1975). In a study by Jacobs (1971) it was found that verbal interaction and other teacher behaviors were changed in teachers who received observational training. A checklist was used to structure observing of classroom interaction.

Rath (1973) described problems associated with collecting behavioral data about specific activities. He defined the problem areas as: (a) classifying the unit to be analyzed, (b) selecting a sample, (c) appropriate instrumentation, and (d) summarizing and analyzing the data. These issues have been confronted by other educators who have developed models of observation which accomplish a systematic method of data collection (Medley, 1973).

Brandt (1973) has reviewed observation gathering procedures in the classroom, and specific three main types: (a) ratings (estimates about the degree to which a trait of activity is present), (b) narrative (complete records are attempted to reflect the sequence and content of the event), and (c) checklists (behavior is classified beforehand and quantifiable measures are taken). Researchers agree however, that whatever the observational technique or instrument used in training, video taping is an invaluable aid in assessing the educational process (Adair & Kyle, 1969; Cooper & Allen, 1971; Cruickshank, 1971; Fleming, 1973).

Psychology. Observation skills in training are also of concern in the field of psychology. Berelson and Steiner (1964)
reported that observation in the field could be made on films and tapes. They stated further that

In many instances, such records may yield quite accurate and comprehensive data since they can be studied at leisure by any number of observers (independently or in unison) and checked and rechecked as often as desired.

Bowden and Barton (1975) stated that specific observational skills for physicians and psychologists should be developed at four levels: (a) "objective observation" of the conditions which affect the patient and his behavior, (b) "participant observation" in which the physician determines the role he should play in modifying the patient's behavior, (c) "subjective observation" or building rapport with the patient, and (d) "self observation" in which the physician understands his own feelings and attitudes.

The entire training process in psychology has been evaluated in terms of skills taught and orientation of programs (Wolman, 1965; Franks, 1969; Meyer & Chesser, 1970). Wolman (1965) reported some division in the field of clinical psychology as to whether training should be mainly research or clinically oriented. "The consensus of universities seems to indicate a preference for a combined approach in which the student gets a breadth of training in psychological theory, research methods and statistics, personality and clinical theory and extensive supervised clinical experience" (Wolman, 1965).
At the Conference on the Professional Preparation of Clinical Psychologists in 1966, training programs were proposed which would meet clinical and scientific needs more effectively. Franks (1969) stated that the preferred sequence of therapeutic events is from experimental observation to clinical practice; a principle which is reflected in the training of clinical psychologists and behavioral psychologists. Meyer and Chesser (1970) discussed the training of behavior therapists and stated that the specific kind of training they require is in a state of controversy and that there is "an absence of routine procedures."

Despite controversy about the training procedures in some areas of psychology, there are also areas of agreement. One specific teaching technique used throughout the field is video taped recordings (VTR) (Bogar, 1965; Ivey, Normington, Miller, Morrill & Haase, 1968; Onder, 1969; McCall, 1973; Frick & Semmel, 1974). In 1965, Bolgar reported an increased use of tape recorders and sound films (VTR) in training.

Onder (1969) described and evaluated the ways television and video tape have been used in university training programs in the field of psychiatric education. VTR has been used to: (a) teach students through demonstrations, thereby creating the opportunity to view a greater variety of patients, (b) teach interviewing skills to residents, (c) serve as an in-service teaching device for staff members in hospitals, and (4) record patients during psychotherapy.
In three related studies, Ivey, et al. (1968) demonstrated the use of VTR in pre-practicum training for counselors. The authors reported that training time can be significantly shortened and opportunities for practice without endangering clients can be provided with the tapes. The micro-counseling procedure used by Ivey, et al. (1968) included two five minute diagnostic interviews, an informative text, and video tape models of effective and less effective counselors. In all three studies, the desired student counseling behaviors were increased using the micro-counseling procedure.

Cahoon, Peterson, and Watson (1968) compared the use of programmed texts and teaching machines as a function of interest differences. They found no significant differences in the amount of learning in the program which taught principles; though the programs which required memorization were learned more effectively via teaching machines, for those students with high mechanical interests.

Video taping has also been utilized for simulations in training of psychologists (McCall, 1973; Frick & Semmel, 1974). McCall (1973) found that the use of simulation games to teach the necessity of programming to a resident staff was advantageous, in that, it accomplished what three or four hours of lecture could not.

Frick and Semmel (1974) suggested the use of VTR examples of
unambiguous simulations of situations to increase the reliability of observations. The study investigated possible sources of error in gathering data observationally: (a) inequivalent observational skills, (b) unstable behavior being studied, (c) poorly designed observational systems, (d) inappropriately analyzed data, and (e) observer error. The following controls for sources of error were suggested: (a) adequate training for observers, (b) simplifying the complexity of the data gathering system, (c) adjusting the length and frequency of observations, and (d) closer supervision and maintenance checks on the observers. More specifically, it was proposed that actual tapes of the behavior to be observed should be used to train observers.

Summary of training. It has been found that similar procedures have been used in the 'helping professions' to train students. The sequence of training, from classroom theory to practical experience, is often the same (Van Riper, 1965; Franks, 1969; Cruickshank, 1971), as are the instructional techniques. Specific procedures have included lectures, readings, demonstrations, written evaluations, and several forms of video taping. The four most widely spread uses of VTR are analysis, confrontations, micro-teaching and simulation (Ivey et al., 1968; Onder, 1969; Cooper & Allen, 1971; Boone & Prescott, 1972; Ingram, 1974).

Further, the techniques required for specific, structured observation have been investigated (Berelson, 1964; Kunze, 1967;

Learning Theory and the Programmed Activity for the Training of Observers (P.A.T.O.)

The proposed P.A.T.O. is grounded in traditional learning theory. As opposed to the previously discussed viewpoint that therapy is primarily an 'art', the P.A.T.O. has a scientific basis and shares many common values with learning theory, such as the stimulus-response format, reinforcement and programmed responses. The following ideas from learning theory will establish the theoretical and philosophical relationship between the proposed P.A.T.O. and learning theory.

Bandura (1969) presented a number of psychological principles in behavioral learning. One of these in that new modes of behavior are acquired by observation, i.e., all learning can occur from the observation of other's actions and the consequences of their behaviors. Another precept of Bandura's (1969) theory is that the aims of learning experiences must not be ambiguous. "The appropriate methods and learning conditions for any given program of behavioral change cannot be meaningfully selected until the desired goals have been clearly defined in terms of observable behavior (Bandura, 1969)."

In relation to the present study, it is also important to note that observation without overt responses results in the acquiring
of cognitive information; and, observational learning and retention are facilitated by the use of corresponding codes (Bandura, 1969). From this information, the use of a video taped program as a teaching tool can be justified, since it is commensurate with behavioral learning principles.

Marx (1970) described the learning activity from a stimulus-response orientation: "To adapt to its world, an organism must learn relations of two sorts 1) the meaning of stimuli, external and internal, and 2) the consequences of its own responses."

The learning activity is further clarified by Shultz & Carpenter (1973) who stated "one must alter the perceptions of a person to alter his attitudes or behaviors, and with the change in perspective a change in optimum adjustment will occur. They further stated the "student observers are typically ambivalent about their perceptions," and therefore need to have an understanding of the relevant goals of each activity and learning experience.

Another principle of learning theory is that of reinforcement; i.e., the practice of skills must be reinforced to enhance the possibility of learning. Feedback is an established form of reinforcement and "underlies the traditional learning theories of Thorndike, Guthrie, Hull and Skinner" (Baker, 1970). The P.A.T.O. is designed with immediate feedback to facilitate optimum learning of skills.
Moore (1966) described a responsive environment as one which satisfies the following conditions:

1) It permits the learner to explore freely. 2) It informs the learner immediately about the consequences of his actions. 3) It is self-pacing. 4) It permits the learner to make full use of his capabilities for discovering relations of various kinds. 5) Its structure is such that the learner is likely to make a series of interconnected discoveries about the physical, cultural or social world.

Berelson and Steiner (1964) have investigated previous research in human behavior and have made generalizations about how learners make discoveries. They reported scientific evidence supporting "transfer of training" (the extent that the learning of one skill helps or hinders the learning of another). The principles which are applicable to the present study are: (a) if the old and new situations are identical or similar, there will be positive carry-over (transfer of training), if the responses expected are also identical (or similar); and (b) if the new skill or situation is not exactly the same as the original, but the expected response is the same, transfer of learning will take place. Video tapes for training should exemplify typical therapy sessions similar to those which the students will be expected to observe throughout their careers as therapists. Likewise, the responses expected from the students viewing the training tape, should be similar to those responses and evaluations expected during actual observation.

A structured model should be utilized to teach the students how to recognize specific aspects of therapy. A model provides
the student with a means of identifying the critical symptoms and taking baseline measurements (Boone, 1975). This factor is of primary importance when teaching observational skills. Instead of randomly observing, the use of the stimulus-mediation-response-contingency (SMRC) model for training purposes will allow the student to identify significant areas of the therapeutic process and encourage the student to make constructive evaluations (Ingram, 1974).

Focused observation could provide the basis for an educational philosophy which will be applicable regardless of the disability or starting point of the client (Boone, 1975).

Summary. Thus, the P.A.T.O. is based on the following learning principles:

1. All learning can occur from the observation of other's behavior (Bandura, 1969).

2. Learning can occur without overt responses by the learner (Bandura, 1969).

3. Learning is facilitated by providing verbal codes (or labeling) for aspects to be retained (Bandura, 1969).

4. Efficient learning depends upon the subjects accurate perception of: (a) the stimulus, (b) the related response, and (c) the subsequent contingency (Marx, 1970).

5. Reinforced practice is necessary for potential skill performance; and feedback may function as a reinforcer (Baker, 1970).
6. Optimum performance will be facilitated by establishing a responsive environment (Moore, 1966).

7. Transfer of training occurs under appropriate conditions (Berelson & Steiner, 1964).

Rationale for Using a Programmed VTR

Berelson and Steiner (1964) have investigated the previous research on perception. They found that in the act of perceiving, the observer: (a) exercises selection as to what aspects of the environment will be perceived, (b) organizes the stimuli, and (c) makes interpretations and judgements about what he has perceived. This "selective awareness" implies that training students with the multi-sensory (visual and auditory) video-tape recordings may be productive in developing basic observational skills.

Berelson and Steiner (1964) also reported that the intensity and quality of the stimulus is important to learning. The P.A.T.O. is structured to prepare students to identify specific aspects of the therapeutic process; and therefore, is congruent with the notion that "people are more likely to attend to stimuli that they anticipate rather than those they do not (Berelson & Steiner, 1964)." In addition, the specific nature of the stimuli in the P.A.T.O. will lessen the possible ambiguity of the expected responses, and there will be fewer misinterpretations on the part of the students.
Berelson and Steiner (1964) recommended the use of the VTR for observation because it is accurate, comprehensive, and any number of observers may check and recheck the results.

In 1967, Prather reported that the uses of video tape are staggering. It is possible to get information and objectivity that simply are not possible with direct observation alone. Pertinent behavior of the child can be seen that may have been missed when a note was being written, additional materials gathered, or simply because the clinician failed to observe in the busy moments of the therapy session.

O'Neill and Peterson (1964) described the use of closed circuit television in a clinical speech training program. Their major application was to give student clinicians ample opportunities for observation. The goals were to provide a close-up view of the therapy process and to have the opportunity to make immediate comments to the student observers. The students were required to make reports of their observations in terms of an outline, stressing the plan of therapy, evaluation and questions. The following advantages of the VTR program were noted: (1) The VTR was less distracting than live audiences. (2) The supervisor was able to make meaningful comments to the observers at the time the behavior was being observed. (3) The supervisory staff had control of what was to be observed and could highlight significant aspects of therapy. (4) There were no restrictions on the number of observers, as there are in traditional live viewing, behind a one-way mirror.
In an effort to evaluate the program, O'Neill and Peterson (1964) reported a consensus of student and supervisor opinion "that the television viewing was as effective as personal observation." They also noted that "the increasing number of clinicians in training may soon make on-hand observation impractical." Some contributing factors to this potentially devastating situation are: (a) vast number of students in training, (b) the number of instructors and supervisors needed to properly train the students, and (c) the cost of such instruction. (Onder, 1969; Willis and Willis, 1974).

Other educators have also recognized the advantages of VTR. When Ryan (1970) surveyed 155 university training centers, he found that 50 of the 107 universities that answered had VTR. Of the 57 that did not have VTR equipment, 46 would use it if it was available, and 23 had plans for obtaining it. Since VTR is an established teaching tool, Ryan (1970) was also interested in finding out what types of instructional video tapes had been made and whether the universities would participate in a VTR exchange program. It was found that the training centers used VTR (1) to evaluate students in training and (2) to describe etiology, testing, and therapy of various disorders (language, articulation, stuttering, voice, etc.). Thirty-one of the universities responding indicated that they would be willing to exchange tapes.
None of the universities answering the survey questionnaire mentioned using the VTR as a programmed instrument (Ryan, 1970). However, programmed material on a VTR tape can provide these advantages in a training program:

1. They engage the attention of the student and require the attention to a small amount of information at one time.
2. They require the student to commit himself by making a response to each segment of information before him.
3. The program produces an immediate feedback of results for each response which the student makes.
4. The program permits each student to progress at his own rate. (Brown & L'Abate, 1969).

Hill (1971) stated that "the basic component of the video taped approach is the program." It is a series of combined teaching and test items that carries the student gradually through the material to be learned (Hill, 1971)." He further states that the agreement of the student's answer and the correct answer constitutes positive feedback. Video taped programs have the additional advantages of speeding up the reinforcement schedule and lessening the ambiguity of the stimuli and the desired responses (Berelson & Steiner, 1964, Hill, 1971).

Conclusion. A review of the current literature has revealed the following eight advantages of using VTR to teach specific observational skills:

1. VTR can yield accurate and comprehensive data (Berelson & Steiner, 1964).
2. Data gathered from VTR can be checked and rechecked as often as desired (Berelson & Steiner, 1964).

3. VTR provides the opportunity to get additional information which may be missed during traditional observational procedures (Prather, 1967).

4. VTR provides the opportunity for objectivity (Prather, 1967).

5. VTR gives students ample opportunity to observe various disorders and different approaches to remediation (O'Neill & Peterson, 1964).

6. VTR is less distracting than live viewing. (O'Neill & Peterson, 1964).

7. Using VTR, the supervisory staff has control over what is to be observed by the students and, the staff is also able to make appropriate comments during the observational proceedings (O'Neill & Peterson, 1964).

It has also been shown that adding the feature of programming to the instructional video tapes is advantageous. Programmed instruction: (a) engages the attention of the student, (b) requires commitment, (c) provides immediate feedback, (d) permits the student to progress at his own rate (Brown & L'Abate, 1969), (e) speeds up the reinforcement schedule (Hill, 1971), and (f) lessens the possible ambiguity of the stimuli and the desired response (Berelson & Steiner, 1964).
STATEMENT OF THE PROBLEM

Students in training in the helping professions must develop certain skills, paramount among which is the skill of observation. Observation of the client is one of the cornerstones in the foundation of diagnostic evaluation upon which diagnosis and treatment are based (Kunze, 1967). Baselines must be established, progress must be measured, and dependent variables must be set. All of these necessary, quantitative measurements can be made only with careful observation.

Without the skill of focused or insightful observation, the student is unable to differentiate between significant and insignificant events nor is he able to systematically record and analyze data. The use of a programmed video tape to teach systematic and analytical observational skills will be an advantageous and effective training technique.

The specific goals of this study were to train student observers with the P.A.T.O., and to compare these trained students to two untrained groups. It was hypothesized that the group trained with the P.A.T.O. would make significantly higher scores on the post-test, than those in the untreated groups.
METHODOLOGY

Test Site

All testing was conducted in classrooms at Florida Technological University, Orlando, Florida.

Subjects

Thirty-three undergraduate students in speech pathology volunteered for this study. Group I (naive-control) consisted of eleven beginning communication disorders majors who were enrolled in the "Introduction to Communicative Disorders" course. These subjects had no previous clinical experience as observers, assistant clinicians or clinicians in the university speech clinic.

Groups II (sophisticated training levels) and III (sophisticated experimental) were matched to provide initial equivalence in sex, age, and the amount of clinical experience. Group II consisted of six subjects who had been observers, three subjects who had been observers and assistant clinicians and two subjects who had engaged in the complete clinical program: observation, assistant clinician and clinician. Group III consisted of six subjects who had been observers, two subjects who had been observers and assistant clinicians, and three subjects who had engaged in the complete clinical program.
Design

Group I subjects (naive-control) and Group II subjects (sophisticated-control) viewed and assessed the dependent variable videotape of therapy. The experimental group, Group III (a) read the written training materials (Appendix A), (b) viewed the training videotape and (c) viewed and assessed the dependent variable therapy videotape.

Instrumentation

The P.A.T.O. training tape and the dependent variable tape was presented on a black and white videotape recorder (Panasonic model NV 3020 SD). All subjects viewed the tapes on a 19-inch television monitor (Concord Model MR 950).

Stimulus Materials

A written text explained the stimulation-mediation-response-contingency (SMRC) therapy model, based on combined learning theories. Collecting critical diagnostic information related to a speech problem and obtaining baseline measurements for these variables was also explained (Appendix A). Subjects were exposed to a method of analyzing therapy in the videotaped section of the training materials. Brief subtests (Appendices A and D) were placed at the end of each section of written and taped materials. The subjects passed these subtests before proceeding to the next section.
The dependent variable consisted of a written analysis of a three minute videotape replay of a therapy session. All subjects analyzed the test videotape on a form provided by the examiner (Appendix B).

Procedure

Subjects in each group were seated at desks in classrooms and placed six to ten feet from the television monitor.

Dependent Variable Procedure. Instructions were read to subjects in each group explaining the procedures to be followed in the experiment (Appendix C). Groups I, II, and III viewed the dependent variable tape separately and answered the posttest questions found in Appendix B.

Experimental Group Procedures. The examiner read the instructions (Appendix C) to be subjects. The subjects then read the written materials and viewed the training tape. Subtests within the stimulus materials were checked by a monitor. If the subject failed to answer the questions correctly on his answer sheet, the monitor wrote in the correct answer and the student was directed to go back and review what he had not learned.
RESULTS

An analysis of the data from Groups I, II, and III indicated that the hypothesis under investigation has been supported. Individual post-test scores and the mean scores for each group are shown in Table 1. A one-way analysis of variance (ANOVA) was performed on the dependent variable test scores from the three groups. A significant F-ratio ($p < .01$) was obtained. The results of the ANOVA are summarized in Table 2.

The data was further analyzed by performing a series of $t$-tests to assess the differences among the scores of Group I, Group II and Group III. Table 3 shows the comparison of $t$-ratios and their statistical significance. There was a significant difference in the comparison of the experimental group (Group III) when compared to both control groups (Groups I, II) using the two-tailed $t$-test. Analysis of the scores of Groups I and III showed a significant difference at the .001 level ($t=4.73$). The difference between Groups II and III was also found to be significant ($t=3.47, p < .01$). There was no significant difference found in the comparison of the dependent variable scores from Groups I and II.
Table 1

- Raw Scores from Post-test

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</table>

Mean Score: 6.64, 7.36, 8.91
**Table 2**

**Analysis of Variance**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
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<tbody>
<tr>
<td>Group Scores</td>
<td>29.64</td>
<td>2</td>
<td>14.82</td>
<td>10.10**</td>
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<tr>
<td>Experimental Error</td>
<td>44.00</td>
<td>30</td>
<td>1.47</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>73.64</td>
<td>32</td>
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**F**.99 (30) - 5.39
Table 3

Summary of \( t \) Results

<table>
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<tr>
<th>Groups Compared</th>
<th>Level of Significance</th>
<th>( t ) ratios*</th>
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<tbody>
<tr>
<td>Group I (naive control)</td>
<td>N.S.</td>
<td>1.22</td>
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<tr>
<td>Group II (sophisticated control)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group II and Group III (experimental)</td>
<td>0.01</td>
<td>3.34</td>
</tr>
<tr>
<td>Group I and Group III</td>
<td>0.001</td>
<td>4.72</td>
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</table>

*\( t \) values are two-tailed
DISCUSSION

Examination of the mean scores from Groups I, II, and III (see Table 1) indicate that the P.A.T.O. was an effective training technique in teaching people to analytically observe therapy. These results are confirmed statistically by the analysis of variance illustrated in Table 2, and the subsequent t-tests illustrated in Table 3.

The data from the P.A.T.O. study has been further examined to determine the implications for the education and training of students in speech pathology. The research results and the educational background of the subjects formed the basis for several assumptions about each group.

We have seen that investigators in the helping professions (Van Riper, 1965; Wolman, 1965; Boone, 1975) have been interested in the controversy of academic vs. clinical training. The first implication of this study is concerned with the over-all picture of what the speech pathology student is expected to learn in his university training. If the kind of learning we expect is academic, then the student should be trained and tested only on the academic level. If we expect results in the clinical area, then we need
to train students to apply the academic knowledge in a clinical setting. Too often the student is trained academically and expected to transfer theoretical information into use in a clinical setting with little specific observational training. The present study supports the researchers who recommend educational plans which are appropriate for such clinical transfer (Starkweather, 1974; Boone, 1975).

The results from Groups II and III indicated a need for the student to study therapy in the clinical setting. Groups II and III were initially equivalent as to their educational background and experience; the only difference was the 1½ hour training program (P.A.T.O.) presented to Group III. Yet the experimental group (Group III, Table 3) appeared to have better insight into the therapeutic process, and functioned significantly better on the clinically oriented dependent measure. Therefore, the use of the P.A.T.O. as a training technique could improve the present educational procedure. Reducing the time necessary to train students to do accurate analytical observations would thereby, reduce the number of instructors and the cost of instruction.

Group II students had been through the present educational program and represented the average effect of this training, including coursework and some clinical experience. Group I subjects represented beginning speech pathology majors with no
clinical experience or background. It is not evident from the comparison of the control groups (I and II) that the educational process has made little difference, as it was not statistically significant (see Table 1). This can be accounted for by the fact that the dependent variable measure was not the traditional academic test, but a clinical assessment of therapy.

The second implication of the study is the possible application of the P.A.T.O. as a screening device for beginning speech pathology majors. Although the students in the naive control group (Group I) were all at the same educational level, there was a wide variation in the test scores on the dependent variable (see Table 1). This variation indicates that some students appear to be more sensitive to the clinical aspects of therapy. It would be useful and interesting for the college advisors to be aware of the student's sensitivity to therapy before he enters the program. An adaptation of the P.A.T.O., in conjunction with the grade point average and college entrance examination scores, could be an advantageous procedure for screening pre-majors in speech pathology.

Threats to internal validity were reduced by the use a post-test only design. Intrasession history may have been an alternate explanation of the results, since Groups I, II and III were run at different times on three consecutive days. It is suggested
that internal validity would be improved by simultaneous running of the experimental and control sessions.

Further research is needed to determine the interaction of the written and video taped portions of the P.A.T.O. Some information seems to be learned more readily by presentation of written materials, and some by video tape. It is also suggested that the P.A.T.O. could be improved by adding video taped examples throughout the written materials. Demonstrations of the therapeutic details would be a valuable aid in teaching clinical knowledge and skills; as was suggested by previous research (Bandura, 1969; Berelson & Steiner, 1965). However, future replications of this study would have to take care to avoid reactive arrangements; that is, researchers must take precautions against teaching their subjects answers to the posttest questions, as opposed to teaching therapy techniques.

Another potential area for further research is to establish the optimum time to teach students to observe. A blocking variable could be introduced by homogenous grouping of students according to their educational levels. Thus, determining how early in the training sequence, the student can be taught to analytically observe clinical and therapeutic activities.
SUMMARY

The present study investigated student training programs in the helping professions and the problems relating to application of clinical skills. A review of the literature revealed that observational skills are a neglected area of clinical training. Because accurate observation is the cornerstone of diagnosis and treatment, it is of paramount importance that students develop the clinical skills necessary to do an analytical assessment of the therapeutic process. The review of the literature also revealed that the most advantageous method of teaching such skills was by a programmed instrument which included demonstrations of the techniques to be learned.

The goals of this study were to train student observers with a Programmed Activity for the Training of Observers (P.A.T.O.) and to compare these trained students to two untrained groups. Students volunteered for the study and were randomly assigned to groups according to their educational background.

A one-way analysis of variance and subsequent t-tests indicated that the experimental group had significantly higher scores than either of the control groups, thus supporting the hypothesis.
It was found that the P.A.T.O. was an effective training technique. Implications of the study and suggestions for further research were included in the Discussion chapter.
APPENDIX A

Learning How to Understand Therapy

David B. Ingram, Ph.D.
INTRODUCTION

There are two overlapping aspects in your professional training experience as a speech pathologist. One part is concerned with acquiring INFORMATION about speech pathology, and the other area is related to the application of USE of those ideas.

You will gather ideas as you read textbooks, listen to lectures and take tests. Later, when you have a better understanding of the key parts of therapy, you play a more active role by observing therapy, and then assisting the clinician in planning, recording progress, and doing therapy. Finally, you will assume the role of "CLINICIAN" and actually do therapy yourself.

The purpose of this training sequence is to help you take the first step and learn HOW TO OBSERVE the critical parts of therapy. As you are watching some therapy sessions we want to make sure you are looking for the right things. You will need to understand these steps in rehabilitation. Before the actual therapy starts, you will want to know what the problem is, so the first step is diagnosis.

Step 1

Diagnosis

The purpose of the diagnostic session is to COLLECT the
important symptoms that make up the problem. You may collect this information by using three different techniques: (1) testing (2) interviewing and (3) observing. Each of these techniques have special advantages and limitations. Although testing is a very formal situation, it also allows you to organize your results and then compare them with norms from other people. Interviewing is less formal and allows for exploring individual differences that are not possible with testing. It can also be well organized, but it's not possible to compare your results with norms. Information which is not accessible through testing or interviewing may emerge when you watch parents and the case interact in an informal unstructured situation. The effective diagnostician uses all the techniques when they are appropriate to collect all of the important information about the problem.

This diagnostic information falls into two areas: behavior and attitudes.

Behavior. It is important to obtain measurements of the behavior of the case. For example, in the situation of stutterers you might measure the number and severity of the stuttered words. You might also measure how long the stuttered words or blocks lasted.

For articulation cases you might record all of the errors the case had as he made sounds in words. You might also obtain measure-
ments in terms of his ability to move the tongue or lips in making sounds.

In cases of delayed language it might be appropriate to measure aspects such as the length and structure of the sentences or how well the case understands spoken language.

The behaviors we are able to measure in communication problems tend to be much more specific and more easily measurable than the attitudes.

**Attitudes.** When communication is interfered with because of a speech problem such as stuttering, articulation, or delayed language the case usually reacts to this problem emotionally and has feelings or attitudes about the problem. For example, severe stutterers might feel very frustrated in many situations when they are unable to communicate effectively. Even young children might feel embarrassed if they are unable to be understood as a result of a severe articulation problem. When they are not understood they may withdraw or act out. Withdrawal and frustration may also occur in the language delayed child.

So as a result of the testing, interviewing, and observing you will have compiled a "collection" of the case's behaviors and attitudes. In a sense, you have an "x-ray" of the patient's communication problem.
Subtest 1

1. Before actual therapy starts, you must _________ the client's problem by collecting the important symptoms making up the problem.

2. The therapist must obtain specific measurements of the client's _________ as it relates to his speech problem.

3. The therapist must also consider the client's emotional reactions and _________ that affect the way he feels about himself and his problem.

Step 2
Selection of Critical Symptoms

Many symptoms are gathered during the diagnosis. Some are not even relevant; some have slight importance; others are very important. Now it is the job of the diagnostician to pull out or select the most important parts of the problem. For example, during the interview, the parents might have gone into some detail about the time Uncle Jack visited and was unable to understand their child. You would probably exclude some of their description and include only the notion that it is difficult for some people to understand the child and the child's reaction to this. Stutterers may, during the initial diagnostic interview, tell you about many situations in which they have been frustrated or penalized as a result of the stuttering. It's important
for you to select the most representative parts of this problem. Imagine that you had all the symptoms spread out in front of you on a desk. In this step it would be your job to pull out only the most important symptoms - those symptoms that best represented the problem.

Subtest 2

1. The therapist pulls out the most important parts of the client's problem by selecting the critical _________.

Step 3

Creating Baseline Measurements for Critical Symptoms

Now that we have isolated those critical parts of symptoms of the problem, it is going to be very important to measure them carefully before we start therapy. Some symptoms lend themselves to easy and fairly objective measurements. For example, we can tell quite accurately how many times a stutterer stutters during a two or three minute conversational period by just counting the stuttered words. If we administer an articulation test to a youngster who has difficulty making sounds in words we can count the number of articulation errors.

However, it is more difficult to measure the amount of struggle a stutterer has while he is stuttering. It is also difficult to measure the amount of rejection a child might
experience as a result of not being understood by his listeners. In recording this type of baseline information we may only be able to indicate that the case experiences a great deal of rejection from specific people. We can also note the types of rejection. You must realize the important advantages in obtaining the best measurements of the condition of the cases' symptoms before beginning therapy. These advantages are:

(1) If we have a specific picture of the unique pattern of symptoms for each case we can plan therapy more appropriately. We are able then to design a therapy approach which really fits the case. So, the selection of critical symptoms and their measurements allows us to plan out the first parts of therapy.

(2) We obtain measurements of the condition of the problem before we begin therapy and then make subsequent measurements during the therapy process. This enables us to demonstrate progress at the end of therapy and the effectiveness of ineffectiveness of the therapy process.

If the baseline measurements or the status of the symptoms do not change as a result of therapy, that provides us with valuable feedback. It lets us know that the particular therapy plan that we have been using is not effective. Hopefully, though, we will have good results and there will be progress in therapy. We can note this progress only if we get pre-and-post therapy measure-
ments. The pre-therapy symptoms then, allows us to demonstrate our progress and become accountable for our therapy.

(3) When we demonstrate progress, this can serve as motivation for not only the case but also for the therapist. This also makes it possible for us to demonstrate the effectiveness of our therapy to other individuals such as employers or colleagues.

Therefore, up to this point, we have collected all of the symptoms in terms of behavior and attitudes. We have pulled out or selected the most important ones and then created baseline or beginning measurements for those symptoms. Now we know what is wrong with the patient and the severity of his problem. At this point then, we are ready to begin therapy.

**Subtest 3**

1. Objective __________ measurements are made of the client's symptoms before beginning therapy.

2. The unique pattern of the client's symptoms enables us to design a plan for __________.

3. Taking subsequent measures provides us with valuable __________ information and lets us know if our plan is working effectively.

**Step 4**

**Plan Therapy Model (Theoretical)**

When therapy has an effect we assume that the patient has made
some changes in his initial behavior and attitudes. These changes indicate he has done some new learning, and this is certainly the pay-off in therapy. Whenever the case learns new, more effective types of behavior and attitudes, therapy is working.

If learning is so important in therapy, it is critical that we consult the experts in learning and apply their ideas in therapy.

One group of learning experts discusses classical conditioning. Using this model they indicate that there are certain stimuli or events that happen to people that result in reliable responses. This stimulus and subsequent response pattern is almost guaranteed. It is very predictable. You will probably recall that in Pavlov's early experiment this stimulus was the presence of food for the dog. The guaranteed response in the presence of that stimulus was salivation. Pavlov also included another stimulus (the ringing of a bell) which did not evoke the response of salivation. By presenting both of these stimuli together—the food and the bell ringing—the dog began to learn that the response to the bell ringing, as well as the food, was salivation. Gradually, Pavlov eliminated the food as the stimulus and soon the dog salivated whenever the bell was presented. It is important that we, as therapists, realize that stimuli which would probably never result in that response.

For example, some youngsters who have delayed language are
able to make the response of understanding what a ball is when they are shown the stimulus of a picture of a ball. However, if the therapist said "ball" it would not evoke that response of understanding. By pairing or presenting the picture of the ball and the spoken word, the case can get the idea that they are similar. Gradually, the picture of the ball can be withdrawn until finally just the word "ball" evokes the same response of understanding.

So, for us, as therapists, it is important to realize that if our cases can make the correct response in the presence of one stimulus, we may be able to teach them to make that same response to another stimulus by pairing the two stimuli.

Operant conditioning psychologists talk about another type of learning which is very important to us as we begin to plan our therapy. One of their basic notions is that if we follow a correct response with a reward, the chances of the response happening again increase. If a person makes an incorrect response we can decrease the chances of that happening again by following the response with punishment or by ignoring it. Imagine that a language impaired youngster is delayed in language because he's being rewarded for acting like a baby. The operant conditioning theory tells us that when he has these immature responses they should go unnoticed or be punished. By rewarding the youngster's more mature responses, the desire response patterns are strengthened. This
theory would also suggest that when stutterers begin to make responses in which the stuttered word is controlled more effectively or they make fluent responses, you should be there with some type of reward.

Very simply, the clinical yield then from this theory indicates that when the case makes the right response there should be some type of a desirable pay-off for him. When he makes the wrong response it should go unnoticed or punishment should take place.

So far we have talked about two types of stimuli (weak and strong), responses and contingencies. The last aspect of learning to be discussed is mediation. This is concerned with the "thinking or cognitive" parts of learning. Experts in this area indicate that learning is "thinking". Although there are stimuli, responses and contingencies outside the brain, the real learning takes place inside the brain.

As we begin to plan therapy it is important that we take advantage of all possible contributions from these experts. Although different theorists tend to contradict each other it may be to our advantage to combine their ideas. When they are combined, it could appear as "Stimulus, Mediation, Response, Contingency" or "SMRC" model. Here is an example. The therapist might provide a stimulus in the form of an instruction or a paired stimulus combination; while this is going on we expect that mediation or thinking is occurring in the client. He should be motivated to
focus on or attend to the stimulus, think about it, analyze it, and give it meaning. Next, we expect that having perceived and analyzed the stimulus, he might make some type of response. Following the response, the therapist might provide some type of contingency (reward, ignore, or punish). So, with this inclusive "SMRC" model we can begin to account for more of the activity which you will be observing in therapy.

There will be occasions when you will probably be observing just responses and contingencies as a result of operant conditioning therapy. There will be other times when you will see examples of classical conditioning. You will also probably notice times when the case appears to be just thinking or mediating. However, equipped with the flexibility of the "SMRC" model, you will be able to account for any event in therapy.

These theories will be of little value to you until they are translated into specific activities within the therapy session. This is the purpose of the next section or next step.

**Subtest 4**

1. The payoff in therapy is when some new ______ occurs, which is shown in the client's behavior and attitude change.

2. The two kinds of learning theory combined in the SMRC model are ______ and _______ conditioning.
3. If the case makes a correct response to a stimulus, we can teach him to make that same response to another stimulus by the two stimuli.

**Step 5**

**Plan Theory Model (Applied)**

Now you are equipped with the theories or master plans for planning events which you expect to happen in therapy. It is your task, at this point, to think of specific ways the therapist and case will behave during the therapy session. Beginning therapists especially should plan out these little interactions or sequences very carefully before the therapy session.

Here is an example of the applied model for classical conditioning. Previously we mentioned that the picture of the ball (visual stimulus) for the delayed language youngster was guaranteed to evoke the response of understanding of what a ball was. If the therapist said "ball" (auditory stimulus) it would probably not evoke that response. So it is appropriate then to pair the visually and auditorially presented stimuli together in hopes that the weak stimulus will be connected with the strong stimulus.
After several trials the strong stimulus or picture may be dropped and hopefully the weak stimulus will evoke the desired response. Here is the **applied** therapy plan.

**Therapist:** Show the case a picture of a ball (strong stimulus). At the same time the therapist would say "ball" (weak stimulus).

**Case:** It is expected that the case will make the correct response and understand what ball is as a result of mainly the visual stimulus. However, he will be learning the auditory stimulus.

**Therapist:** The therapist will repeat this above process several times and finally, she will say "ball" without showing the picture.

**Case:** Case will demonstrate that he understands what ball means by pointing to the correct object (ball); which is one of 3 objects.
Now here is a "translation" for the operant conditioning theory. In this situation the therapist will reinforce the correct response. She will also ignore incorrect responses.

Therapist: "Show me Ball" (therapist presents pictures of five objects).

Case: Case points to cup (error response)

Therapist: No response (ignoring contingency)

Case: Points to the picture of the ball (correct response)

Therapist: "Good for you" (reward contingency).

Now, here's an example of the SMRC model with the same therapy situation.

Therapist: "Show me ball" (stimulus) (Therapist presents pictures of five objects).

Case: Case looks at and listens to the therapist and thinks about the stimulus (mediation).

Case: Points to fish (response-error)

Therapist: "No" (contingency).

Therapist: "Show me ball" (stimulus)

Case: Points to ball (correct response).

Therapist: "Good for you" (contingency-reward).

You are planning to become a sophisticated and effective therapist. Reaching this goal will depend to a great degree on how successfully you will be able to analyze these key parts of
therapy. When therapy is going poorly, the problems will show up in the case response patterns. That is, he will be making error responses or no responses over and over again. It will be your task then to trouble shoot for the problem areas. If you are sensitive to the things that can go wrong within the stimulus, mediation, and contingency aspects you will be able to figure out what to change so that the therapy will become more effective. As you apply these ideas, they will allow you to interpret your therapy so you can understand where problems are.

It is equally important to make these types of insights with successful therapy so you will know what to continue doing. Now, we will look at the SMRC model in more detail. Here is what you can expect to see in the complete sequence.

Stimulus - S = The therapist will present some type of stimulus. This may be directions, it may be a model of the behavior that is desired, it may be a suggestion or it may even be an encouraging or supportive statement.

It's going to be important for you to know what might go wrong with stimuli as you trouble shoot for problems in therapy. (1) The stimuli may be dull and uninteresting to the case and they perceive it as having very little value, (2) The stimuli may be a demand for a response pattern which is too complicated
for the case, (3) The stimuli may be so simple and require such an elementary response that the case may be bored by it, (4) The therapist may also have negative behaviors or attitudes which may affect presentation of stimulus material. For example, a therapist could lack warmth or be very demanding in terms of inflections or attitude. It is important, then, to become sensitive to those ineffective "stimulus packages" that therapists present. If they are placed appropriately in terms of difficulty, presented clearly and are interesting, and the therapist is perceived as a genuine caring person, the stimuli should be effective.

Subtest 5

A. 1. Understanding learning theories is essential for the therapist so that she can put them into an _______ therapy plan or model.

2. ________ is the term used when the therapist gives the case directions or presents a model of the desired behavior.

3. The possible things that could go wrong when the therapist presents materials and/or directions are that they may be 1. _______, 2. _________ 3. ________

Mediation - M = As the stimulus is presented we expect that the case will look at and listen to the therapist. We expect that the case will be motivated to
attend to the stimulus. Following attention we hope that the client will analyze the stimulus, understand it and be motivated to make a response.

Response - R = The case may make several types of responses; (1) the response may be exactly what we expected or a correct response. For example, a lisper (who usually substitutes the /th/ sound for /s/ in the word "sun" and says "thun") may after a stimulus produce the sound or word correctly and say "sun". (2) the case may produce an incorrect response, (in this case the youngster might produce the word "thun" rather "sun"), (3) the case might begin to explore sound productions and in attempting to produce the correct sound he might produce a sound which is between the /th/ sound and /s/ or a distortion. This would be better than the totally incorrect sound and we might call this type of response a shaping response. It's not perfect yet, but it is getting better, (4) it's possible that the case also might make no response.

So, as you observe these moments in therapy which are concerned with the responses which cases make, you will be able to classify
them in one of these four areas:

Correct
Incorrect
Shaping
No response

Subtest 5

B. 4. The client's "thinking" about an appropriate response to the therapist's directions, prior to eliciting that response is called ________________.

5. The four possible kinds of responses a case can make are:

1. ________________ 2. ________________
3. ________________ 4. ________________

6. A response which is not totally correct nor incorrect is termed a ________________ response.

Contingency - C = When contingency or pay offs are used, they follow the response in an attempt to encourage or discourage this behavior. As you begin to interpret and understand therapy there are four aspects of contingencies that you will want to know about.

The first aspect is concerned with the type of contingency used. If the right response has
happened and you wish to encourage that response a **reward** should follow. If the wrong response occurs and you wish to discourage it you may choose to **punish** the case or **ignore** that response.

The second aspect is concerned with two characteristics. Contingencies must first be **noticed** by the client, and second, they must be **meaningful**. As you observe therapy you may see that contingencies are present, but the client does not even notice them. The therapist may say "Good For You" but the hyperactive child may not even notice it in his flurry of activity. Now, let's consider another case in which a contingency is presented and noticed but lacks effectiveness because it is not meaningful or valued by the case. A small child may have engaged in the right response, the therapist subsequently rewarded the behavior, the child noticed the reward but it may have been only verbal and lacked value for him. An effective reward might have been something good to eat or a hug. So, real problems can occur in the contingency area if the contingency goes un-noticed or is not valued by the case.
Subtest 5

C. 7. A __________ follows the response and will encourage or discourage the client's behavior.

8. A correct response is followed by some type of __________ given by the therapist to increase the occurrence of that response.

9. Immature and incorrect responses should be __________ or __________ by the therapist so that they will not occur again.

10. The therapist's rewards must be __________ and __________ by the client.

The third aspect is the frequency with which a contingency is presented. Constant reinforcement occurs if every response is followed by contingency. This is effective to initially strengthen a response pattern. However, continued, constant praise may extinguish the desired response pattern.

So, it is important that the therapist shift from constant reinforcement to partial reinforcement schedules as soon as possible. You will also want to watch the therapy sessions very carefully for a lack of reinforcement. If the therapist provides no encouragement for the case, don't be surprised if the pattern of correct responses drops off. Also, it is important for you to know that the operant conditioners feel punishment should be used sparingly and that reward is the more effective contingency. If punishments are used
constantly it would be difficult for the case to maintain motivation.

The fourth aspect is concerned with timing of the contingency. If there is a long delay in time between the correct response and the contingency the therapist will risk the possibility that the case may not see the relationship between the correct response and the contingency.

As you can see, there are many, many things to look for as you begin to try to understand what happens in therapy, what makes it good, and what happens to effective therapy when it breaks down. It will help you in your beginning observations of therapy sessions if you can spot the various stimuli, mediation, responses and contingencies and then understand the relationships between them that create effective or ineffective therapy.

Putting It All Together

You will recall in Step 2 we selected critical symptoms that were parts of the problem. In Step 3 we measured the symptoms and the group of symptoms composed the condition of the case; all this was completed before we attempted to make the changes as a result of therapy. It may help you at this point if we could observe one of those symptoms as it progresses through the complete sequence.
Imagine that the therapist has diagnosed (Step 1) an eight-year-old youngster and collected many symptoms indicating that he has a lisp. In Step 2 specific critical symptoms were pulled from the diagnostic information. Two examples were the number of correct and lisped "s" sounds in (a) the cases conversational speech and (b) "s" sounds when the case said them along. In Step 3 the therapist measured the lisp and indicated that this youngster substitutes the "th" sound for the "s" sound all the time in conversational speech. That is, he never produced the "s" sound correctly when she listened to him during conversation. The other baseline measurement indicated that he was unable to produce the correct "s" sound alone, ("sssss"), even after the therapist produced the correct "s" sound first. So, we begin therapy with a youngster who was unable to produce the "s" sound correctly in any situation. We will progress through the sequence with this symptom and its measurements.

In Step 4 we set this symptom aside as we begin to understand all of the implications from the learning theorists for our therapy.

As we progress to Step 5, which is planning the applied therapy model using the SMRC plan, it is possible for us to consider specific suggestions so that we will have a plan of attack for therapy.
Client's Response Pattern - What To Look For

First, it is important to be aware that the correct response pattern, or correct "s" productions is the pay off for this case. If we have therapy inter-reactions which result in incorrect responses or no responses, the therapy might be assumed then to be ineffective. However, if the case begins to shape the "s" sound or produce a correct "s" sound, we can assume that the therapy is having an effect. So, the presence of no response or incorrect responses should signal us that there might be a problem someplace in the therapy sequence.

Therapist's Stimuli - What to Look For

If there is a problem with the response pattern we might first look at the nature of the stimuli. Possibilities for problems within the stimulus area may be that the stimulus is not interesting. It also might be too complicated or too simple. The therapist may have personality characteristic which may "turn off" the case.

Subtest 5

D. 11. The _______________ with which a reward is given to the client is important as the therapist shifts from a constant reinforcement schedule to a _______________ reinforcement schedule.

12. A _______________ between the correct response and the reward may cause the case not to be able to see
the relationship between the two.

13. When planning therapy using the SMRC model, the therapist must be aware of the ____________ which is the payoff for this case.

Client's Mediation - What to Look For

As the therapist presents the stimulus you will want to make sure that the case is motivated to look at and listen to (mediation) the stimulus and subsequently analyze it or think about it. Breakdowns in any of these areas may contribute to incorrect responses.

Therapists Poor Contingencies - What To Look For

Response patterns may also be related to problems in contingencies. Too much punishment may discourage the case, in that the case does not perceive them as being rewards. Rewards which occur too late may be a problem. If reward patterns are present, but they are too frequent they may extinguish the correct response pattern. It's a good idea to shift to a partial or a "once in awhile" reinforcement pattern when the correct response or the "s"'s are produced fairly consistently. It's probably better to ignore incorrect productions ("thun, thoup," etc.) rather than punish them.

Now we are equipped with the suggestions from the learning theorists. We have isolated and measured the problem and are now ready for the next step.
APPENDIX B

Dependent Variable Test Form

Type of Case: Ten year old girl - articulation problem with a lisp.

Baseline Information (Cases starting point): Case is able to tell the difference between words which contain an "s" sound and words which do not contain an "s" sound (Example: sun and rabbit)

Long-range Goals: Improve articulation skills.

1. What seemed to be the specific goal or objective of the therapy session?

2. Was this objective successfully met? Yes No (Circle One)

3. One teaching technique successfully used by the therapist was:

4. One teaching technique unsuccessfully used by the therapist was:

5. Did the client usually understand what the therapist said? Yes No (Circle One)

6. List 3 contingencies (reward, punish, ignore, etc.) the therapist used to acknowledge the client's responses.
7. Did the therapist usually respond to the client's accomplishments?  
   Yes  No  (Circle One)

8. What two goals would you suggest for the next session?
APPENDIX C

Instructions
Instructions Before Stimulus Materials

This is a research project in speech pathology. First, I will give you some materials to read. They contain information about what students need to watch for when observing speech therapy. Please read the material carefully, all the way through. After various sections within the material, there will be subtests for you to complete. Answer the questions carefully, based on the information you have read. Upon completing the first subtest on page 3 and the additional subtests thereafter, raise your hand and the monitor or I will check your answers. If your answers are correct, you will be told to go on to the next section. If any are incorrect, the monitor or I will write in the correct answer and you continue to the next section. You may, however go back and re-read to find the answer you missed. Please list all of your answers on the answer sheet provided. It is clearly marked to coincide with the reading materials. Do not make any marks on the materials. When everyone has completed the reading materials, you will all view approximately 15 minutes of video tape.

Are there any questions? If not, you may begin.

(Pass out answer sheet & stimulus materials).
Instructions Before Taped Materials

You will now view approximately 15 minutes of videotape. The tape includes some examples of therapy and some additional instructional materials.

I will pass out the remaining subtest questions and you may make notes as you watch the tape. There will be time between the segments of tape to write your answers. Please continue to use the same answer form. The monitor or I will check your answers as before. Are there any questions? In the examples of therapy in this tape, the stimuli, mediation, responses, and contingencies are labeled on the screen. These are the initials SMRC which you will see flashed on the monitor as the therapist and the case are speaking. Notice that when the s (the stimulus) is occurring, the case is mediating (or thinking) at the same time.

Are there any questions? Then we will begin.

(Begin tape)

Instructions Before Dependent Variable

You will be looking at a videotaped segment of a speech therapy session. I will tell you information about the case and her speech problem. You will see the videotape two times; the first time I want you to watch for the main ideas in the therapy session. The second time, look for the details that will help you fill out the evaluation sheet. (Pass out D. V. sheet)
Now take a minute and read the evaluation sheet before I run the videotape for the first time. I will answer any questions. (They read; time: 60 seconds). Please put your name at the top. I am not interested in how well you do, but I need to know who has participated. The scores will be averaged as a group, not individually.

On the right side of the screen, you will see the speech therapist. On the left side of the screen is the case; a 10-year-old girl. Note at the top of your sheet the baseline information is that... and that the long range goal is to improve articulation skills. (Run tape)

Now re-read your evaluation sheet before I run the tape for the second time. (They read; time: 60 seconds). You may take notes during this second viewing. (Run tape again).

Now complete the evaluation sheet. When you have answered all the questions, turn your paper over and wait for the others to finish. (Collect D. V. Sheet).

Debriefing

You have taken part in a research project designed to determine if students learn to observe speech therapy more effectively by first reading and viewing pertinent information and examples. Please do not tell any of your friends about this experiment, because they, too, may be participating in it.
Are there any questions? Are there any parts of the experiment that concerned or confused you?

Thank you for your time. You are dismissed.
Subtest Questions for Video tape Materials

**Subtest 6A**

Plan Therapy Sequence

1. When the articulation case understands the difference between a correct sound and an incorrect sound, he is learning to _____.

2. To make the articulation case aware of his errors, ________ should be provided to aid in confrontation.

3. When confrontation is successful, the case is ________ to change his behavior.

**Subtest 6B**

4. When the client "shapes" his responses, he has engaged in ________ behavior.

5. The purposes of the stabilization step in therapy are to strengthen the ________ and make it more ________.

6. The therapist should avoid making the ________ too complicated for the case.

7. The generalization phase of therapy is sometimes called ________.
Subtest 7

1. To understand and do good therapy, the therapist must become ________________________________.

Subtest 8

1. To evaluate therapy, we would be expected to ________________________________.
LIST OF REFERENCES


Ingram, D. B., & Stouden, A. A. Students' attitudes toward the therapeutic process. Asha, 1967, 9(11), 435-441.


