THE ACTIVE RESPONSE IN-SERVICE TRAINING METHOD AS A MODEL FOR USE WITH TEACHERS AND AIDES IN PUBLIC SCHOOL PROGRAMS FOR MODERATE TO SEVERELY RETARDED STUDENTS

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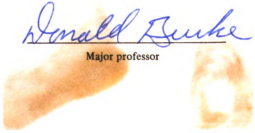

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ABSTRACT

THE ACTIVE RESPONSE IN SERVICE TRAINING METHOD
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Michigan, in recent years, has been faced with a number of social, legal and educational changes in reference to the public school education of moderately to severely retarded students. The rapid influx of formerly institutionalized retardates into public school programs, the increased use of paraprofessionals in these programs, the lack of undergraduate and graduate teacher training programs, and the scarcity of quality in-service training have created a need to more efficiently prepare professionals and paraprofessionals for their roles as instructors of this student population. In response to this need, the Jackson-Hillsdale-Lenawee Project was developed to study the effectiveness of a model for providing an integrated approach to the two separate functions of graduate teacher training and staff in-service training in trainable and day-training programs. The vehicle for the integration of these two functions was the Active Response In-service Training Method. As part of their total graduate training program, special education graduate students acted as in-service trainers for a group of professional and paraprofessional special educators.

This study represents one facet of the overall attempt to evaluate this integration of the two functions. As such, this study is an evaluation of the Active Response In-service Training Method for use as a model for providing in-service training.

The Active Response In-service Training Method (ARITM) was developed by Burke and Rowland for use as an in-service training method in state institutions. Unlike the more traditional (lecture) method for in-service training, the ARITM is characterized by 1) individualized training of a subject in his classroom while he is working with his students on existing instructional problems, 2) utilization of assessment as a basis for designing both the subject training and the student instruction, 3) the modeling of desired subject behavior, 4) immediate practice of the skill to be learned, 5) utilization of behavior modification techniques to both train the subject and teach the student.

The purpose of this study was twofold. As an evaluation of the effectiveness of the ARITM as an in-service training model in public school trainable and day-training programs, this study was undertaken to profile some changes in important teaching behaviors that accrued to the subjects over the treatment period. Through analysis of these changes, three objectives of this study were to be accomplished: 1) the strength of the ARITM for teaching various requisite instructional skills would be ascertained; 2) specific subgroups within the focal population would be identified as more or less receptive to the ARITM as an in-service training tool; and 3) data collected could be used for modification of the ARITM for future use.

This study was a clinical analysis of the ARITM's efficacy for influencing change in four dimensions of teaching behavior.

1. The Opinion Dimension analyzed change in subjects' opinions about in-service training in general, about their own strengths as teachers, about various methods and techniques advocated by the ARITM, and about the subjects' feelings of satisfaction with the ARITM experience.

2. The Skill Dimension analyzed subjects' change of skills in applying behavior modification techniques.

3. The Verbal Expression Dimension analyzed subjects' change in ability to conceptualize and verbally express an understanding of the prescriptive teaching process and to use the technical language of instruction.

4. The Intent Dimension analyzed the subjects' intent to incorporate learned skills into their daily instructional routine and to apply these skills beyond the period of the in-service training.

Over the academic year (project period), changes accrued to the subjects that indicated the appropriateness of the following conclusions for subject populations of similar description.

A substantial increase in subjects' ability to apply appropriate behavior modification techniques is to be expected. To a lesser extent, but nevertheless evident, the ARITM has a positive influence on the subjects' verbal expressive skills in regard to articulating the process of prescriptive teaching and the ability to use the technical language of instruction. Having learned the skills taught by the ARITM, the subjects will tend to take a more individualized approach to instruction and will most likely incorporate and practice the skills they have acquired. The ARITM will influence stronger feelings of adequacy as instructors on the part of the subjects. In its present form, the ARITM does not influence a positive

change in subjects' opinions about the general feeling of the adequacy of the overall in-service training programs offered within the subjects' school district.

Finally, when considering the relative gains of the various subgroups, it can be concluded that most benefit was derived by the aides in day-training programs, followed by aides in trainable programs, and least, although substantial, by teachers in trainable programs.

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By

Benson Robert Herbert

A DISSERTATION

Submitted to
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DOCTOR OF PHILOSOPHY

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Dedicated

to

Bear and Bink

ACKNOWLEDGMENTS

This study is the result of cooperative efforts of numerous persons, some proximal, some distant only in time and space.

A special feeling of thanks is extended to the children. . . .

Most grateful appreciation is extended to Dr. Donald A. Burke, dissertation chairman, for providing the vehicle upon which this study traveled, the guidance, concern, perception, encouragement and many personal hours of work necessary to steer it to conclusion.

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To my parents I would like to express thanks for the indescribable influence that they have exerted upon my life; the meaning of which is just beginning to be comprehended.

Finally to my wife, Nancy, my most profound feelings of gratitude and appreciation for her understanding support, unselfish endurance, and assistance in this partnership. And to Stacey and Whitney my gratitude for permitting this rather bizarre intrusion during their young lives.

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CHAPTER I

INTRODUCTION AND REVIEW OF RELATED LITERATURE

Recent Events in Michigan's Education of the Severely Retarded

Several events in Michigan have added to the current needs in programming a quality public school education for moderately and severely retarded children and in the concomitant need for trained educational personnel.

Public Health Statutes (Section 9) of P.A. 54 - Community Mental Health Act of 1963, set the priority to and the vehicle for the community care and education of the formerly institutionalized retarded and disturbed. Community Mental Health data (April 1974) depict the impact of the statute and the trend toward community placement. In 1971-1972, 360 mentally retarded persons, seventeen years old or younger, were discharged from institutions in Michigan and given "community placement status." Of that same age group, 283 more were given "convalescent status" during that same year. "Convalescent status" is defined as trial placement before achieving full "community placement status." During the following year (1972-1973), 523 were classified as community placement status and 477 achieved convalescent status.

In 1971, the availability of social security funds (Fed. Soc. Sec. Act of 1969, Title IVa of 1971) made large scale public school programming for severely and multiply impaired children possible. At that same time, the responsibility for the education of this population was transferred from the Michigan Department of Social Services to the Michigan Department of Education.

In 1973, P.A. 198 of 1971 became effective making mandatory the public school education of all handicapped persons. This act also extended the age of public school eligibility to include handicapped persons from birth to 25 years, regardless of severity of the handicap.

Community care and education facilities existed prior to these events, but the majority were managed by the private sector and staffed by untrained paid and non-paid volunteers. Few, if any, guidelines were available for educational programming. Most education for this population occurred in the institutions where "care" and not education was stressed (Wolfensberger, 1969; McBride, 1972).

Instructional Personnel

In the school year 1972-1973, there were 553 teachers and 878 aides employed in trainable and day training programs in Michigan. In 1973-1974, 640 teachers and 1012 aides were employed and estimates for 1974-1975 totaled 647 teachers and 1086 aides. These totals do not include personnel employed by community mental health programs for the mentally retarded or the mentally ill (Chappell 1972).

The Michigan approved teacher/aide ratio for these focal programs is one teacher to three instructional aides to 30 children, and one teacher to one non-instructional aide to 15 children. In all, non-trained paraprofessionals potentially outnumber certified teachers almost three to one.

Michigan has no specialized certification or approval requirements for teachers of trainable and day training students; general approval as a teacher of the mentally retarded is the only requirement. There are no state requirements for approval of "non-instructional" classroom aides. Rule 93 of the Michigan School Code states that approval is left to the discretion of the employing intermediate school district. Rule 94 states that instructional aides must have a high school diploma and a minimum of two years of successful experience working with handicapped children.

The Michigan Department of Education (June 1970) published the report of the Michigan Special Education Committee on Certification of Teachers of the Handicapped. Although not considered to be an appropriate part of the formal report, the Committee felt "compelled" to bring to the State's attention two concerns about paraprofessionals.

> The Committee recommends that there be a thorough exploration of the relationship between the employment of non-professional persons in Special Education and Vocational Education. We particularly would like to see the use of a licensing procedure for these people within the context of Special Education.
>
> The problem of training (and approval) of paraprofessionals has not been resolved. This will become more critical as the professional organizations become involved with graduated levels of professionals and the definition of roles for each level.

Saettler (1970), in a national survey, states that there are 774 undergraduate programs and 794 graduate programs preparing teachers in various disability areas. Of these, 276 undergraduate and 231 graduate training programs are in the area of mental retardation. Although Saettler does not indicate how many train teachers of the severely retarded, he does state that there are only nine undergraduate and ten graduate programs for training professionals for the multiply handicapped population. Chappell (1972) states that there are no four year degree institutions in Michigan with programs that prepare teachers of the moderately to severely retarded. Although there are some community colleges training paraprofessionals for work with this population, there is little standardization and no record of the competency of graduates of Michigan programs.

Background and Training of Paraprofessionals

This wide spread acceptance of the use of aides, the lack of specific training and the expansion of public school programs for the trainable and day training population creates a problem that is compounded when one considers the paucity of in-service training programs for personnel working in these programs. Addressing this focal population, Harris (1972) indicates that in-service training is scarcely available in Michigan.

In-service training takes on particular significance when one examines the background of the paraprofessionals seeking and finding employment in these programs. Prior to extensive use of paid aides

in public school systems, most documentation on aide characteristics came from state hospitals, residential institutions and federally funded programs in which formerly disenfranchised poor adults were employed and trained to work with preschool age and handicapped children. The majority of the aides specified had not attained a high school education, had no formal or informal experience with retarded children, and functioned on a 7th to 9th grade educational level (Cortazzo, 1971; Bernsberg, 1964; Roselle, 1950; Wilson, 1972). Although the educational level of the aides employed in public school programs is somewhat higher, those aides who have gone beyond a high school education have usually done so in areas non-related to the education of handicapped children (Harris 1972).

One might expect that aides or paraprofessionals working in programs would acquire a certain degree of competence through daily interaction with trained professionals working in or as consultants to such programs. To a certain extent, this is true, but several factors combine to greatly mitigate the value that an aide might derive from such interactions; such interactions are usually informal, highly focused, and occur on an abstract verbal plane. This presupposes that the interactors are conversant in educational theory and technical vocabulary. Secondly, there are few educators available on local program staffs that have been trained to teach this population. Finally, many programs for this student population operate without the resource personnel which are normally available to other special education programs. Consultants to day-training and trainable programs

are few in number (Harris). Most support personnel that are available work directly with the student, thus having minimal impact on the development of staff teaching competencies, particularly competencies of the paraprofessional.

Emphasis on In-service Training

The National Commission for Teacher Education and Professional Standards (1965) expressed urgent concern for effective in-service training in special education. Michigan, too, has expressed its concern by including in the rules and regulations for the implementation of Mandatory Special Education (P.A. 198) a section requiring intermediate school districts to provide effective in-service training programs. Four recommendations made by Harris with specific reference to day-training programs express the need for in-service training of professional and paraprofessional staff.

Relevancy of In-service Training

Existing in-service training is usually provided in an academic theoretical manner which places the burden of actual skill development on the trainee rather than the trainer. Attacks on traditional methods of in-service training are common in the literature. MacIntyre (1972) typifies these references saying that "traditional converences or meetings . . . have come under fire as having limited information giving functions and showing no evidence of changing teacher behavior . . . ." Aside from the questionable efficacy of traditional

in-service methods, the administrative problems inherent in the traditional format are of major concern to the public school sector.

Considering the above, it would appear that special educators should place high priorities on the design and implementation of specifically focused, highly practical in-service training. Secondly, much of this in-service training effort should be directed toward the upgrading of staff competencies in trainable and day-training programs. Further, it appears appropriate to designate the paraprofessional as the primary focal population because they represent the greatest number and least trained segment in these programs. This group also is representative of those persons least likely to benefit from the more traditional in-service training formats.

It was in response to this identified need for in-service training and with an awareness of the manifest weaknesses of traditional formats that the Active Response In-service Training Method (ARITM) was developed.

Development of the ARITM

The ARITM was originally developed by Burke and Rowland in 1970 as a result of their work with residents and attendants in various state hospitals for institutionalized retarded. The literature and practical experience had indicated a need for alternative forms of staff in-service training. Traditionally, most in-service training was provided for the professional ancillary medical personnel and stressed basic care and medical treatment. In-service for non-medical staff was usually provided by nursing staff and stressed

custodial care and not education and habilitation. This type of training was consistent with an important purpose of the institutions; providing custodial care for the residents (Goldstein 1959). The traditional format employed lectures and technical concepts which proved to be of little training value as the average attendant had less than a twelfth grade education and ranked in the lower portion of normal tested intelligence (Barnett 1965). Many had less than eight years of formal schooling (Parker 1951).

In a selected paper, "An In-service Technique to Teach Ward Attendants How to Give Language Development Training to Institutionalized Retardates," presented 1971 at the annual conference of the Michigan Speech and Hearing Association, Burke and Rowland outlined their early attempts in the development of the ARITM. Three basic assumptions about learning provided the under pinnings of the method; learning is best facilitated by 1) active involvement of the learner, 2) knowledge of results and reinforcement for success, and 3) opportunities for practice in the trainee's milieu.

Burke and Rowland described their method as a seven step process:

1. Training of a resident was preceded by assessment of the resident's current functional developmental level.
2. Assessment was followed by a behavioral statement of the training goals for the resident.
3. The goals were clarified and ultimately articulated by the attendant.
4. The trainer demonstrated a given procedure on the resident.
5. The attendant then practiced the procedure.

6. The trainer then shaped the attendant's training behavior through prompting and the reinforcement of successive approximations.

7. Generalization was promoted by having the attendant practice on other residents.

Although no evaluation of Burke and Rowland's early work was undertaken, both felt that their in-service training method would be applicable for training attendants to teach other skills such as dressing, toileting, eating. Furthermore, they felt that it would produce more satisfactory results than would traditional methods. Figure 1 outlines some of the important differences between the traditional in-service training formats and the Burke/Rowland method. This method was later to become known as the Active Response In-service Training Method (ARITM).

Description of the ARITM

Although the Active Response In-service Training Method (ARITM) has undergone extensive modification since its inception, the core of the method has remained identical to that reported by Burke and Rowland (1971). The ARITM still holds three basic assumptions; those being: 1) benefits of in-service training will better accrue if training is provided while the trainee is actively involved in instruction; 2) trainees are most likely to assimilate and retain new knowledge and skills if models of desired behavior are provided in an interactive environment conducive to immediate practice and reinforcement of a new skill; 3) in-service training is most relevant if it is structured pursuant to the trainee's identification of instructional problems with which he is faced in his classroom.

Traditional	ARITM
1. Administratively complex involving school dismissal, teacher release time and hiring of substitutes.	1. On-site in-service given while teachers and students are in class.
2. Separation of staff and student.	2. Staff are trained to work with their students.
3. Symbolic abstract presentations with transfer only expected.	3. Skills presented in concrete terms and practiced as modeled.
4. Information must be retained for long period before opportunity for use.	4. Exposure to new skills and practice occur simultaneously.
5. Skills are presented under ideal or simulated conditions.	5. Skills presented in the normal working environment.
6. Skills later applied without supervision.	6. Skills applied under supervision with immediate feedback given.
7. Rewards for participation are often not related to assimilation of in-service content.	7. Rewards are only given as a consequence of assimilation of in-service content.
8. Single exposure to complex and abstracted methodologies.	8. Multiple exposures given over prolonged periods of time.
9. Participants are treated as isolates.	9. Participants are treated as interacting members of a team.
10. Passive participation.	10. Active participation.

Figure 1. A Comparison of the Traditional In-service Training Format with the ARITM.

Characteristics of the ARITM

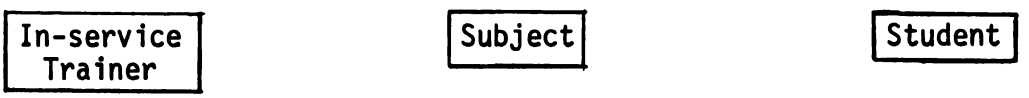
The ARITM displays five broad characteristic components: 1) individualized on-site interaction of the in-service trainer and the subject; 2) the institution of assessment-based child instruction and a prescriptive teaching model; 3) immediate application of newly learned techniques; 4) the utilization of techniques of behavior modification on two levels (the staff level and the student level); and 5) a program of in-service training designed around the problematic conditions the subjects find in their own classroom.

Although the concrete application of the ARITM involves some specific content, such as the isolation and definition of a particular student behavior, the utilization of a particular assessment instrument or a particular training procedure for a given subject matter, the ARITM is actually a "process" method. The utilization of the ARITM is independent of particular academic subject matter. A description of the ARITM process follows:

Main Steps in the ARITM Process

The Active Response In-service Training Method consists of six (6) main steps*:

As each step in the ARITM is taken, various interactions may occur between the people involved: the in-service trainer (I.T.), the subjects and the students.



*Appreciation is expressed to Dr. Rowland for providing this excellent description of the ARITM, while allowing extensive modifications to be made for purposes of this study.

1. The first step was the identification and behavioral statement of the problem or area of interest.

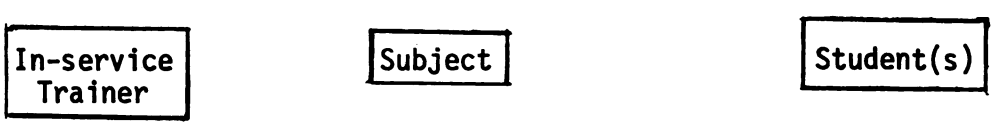
   The identification of the problem was usually a cooperative effort by the I.T. and the subject. Informal discussions during breaks or after school, coupled with classroom observations, facilitated problem definition. Problems were stated behaviorally before proceeding to the next step.

2. The second step was a functional assessment of the student.

   Assessments were made to further define the problem or to identify the student's developmental level. Both formal and informal assessment instruments and procedures were used to fit the specific needs of the particular situation. The I.T. might have assessed the student(s)

   on the subject may have assessed the student(s)

   At times, the subject requested to be trained in giving a new assessment. In such cases, the ARITM was used by the I.T. to instruct the subject in the use of assessment procedures.



3. Step three involved the development of the assessment based training program to address the problem or interest area.

   Using the assessment results, a training program was developed by the I.T. and subject. Activities usually involved in this step include cooperative I.T./subject efforts to locate or construct training materials, arranging training areas in the

classroom, piloting training procedures, determining appropriate student reinforcers, describing acceptable approximations of the behavior being trained.

4. The fourth step involved the I.T.'s demonstration of the training procedure to the subject using the student previously assessed in step two.*

   Vocal demonstrations could accompany the physical demonstration to clarify procedure. Vocal demonstrations without physical demonstrations were used only when: 1) subjects were more skilled in the particular training area; 2) when there was certainty that the training program was appropriate for the student; and 3) when the procedure did not need to be piloted by the I.T. The demonstration served two purposes. First, it allowed the subject to become familiar with the training procedures through observation of the demonstration. Secondly, during this period, the I.T. made any necessary modifications in the training procedure. In this step, as in all other steps, the inability to obtain acceptable approximations of the training objectives resulted in going back to the prior step in the method. If adjustments to the training procedure appeared appropriate, the modified procedure was demonstrated by the I.T.

5. The fifth step in the method involved the shaping of the subject's skills in the use of the particular procedure.

   The subject was given an opportunity to use the procedure with the student. During this time, the I.T. observed the subject's application of the procedure, providing cues and prompts when necessary. Feedback was given as to the correctness of the application, and social reinforcement was given to the subject in the form of praise for correct applications and acceptable approximation. This step (subject practice) was undertaken immediately following the I.T.'s demonstration of the procedure. If necessary, to facilitate

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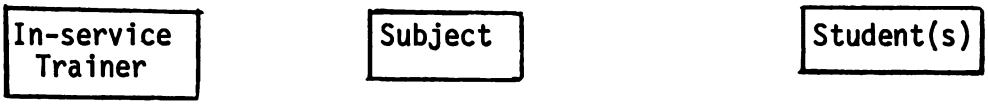
*When instructing the student either during the period of demonstration by the I.T., or during subject practice session, the instructional interactions followed a basic behavior modification format (stimulus presentation/prompting/response/reinforcement).

the subject's success, additional demonstrations were given by the I.T. In the case of a complex training program, the I. T. would demonstrate small portions to insure subject success as the subject tried it for the first time. Written guides describing the training program in step-by-step format were always left with the subject to assure appropriate application of the training program under conditions of non-supervision.

6. The sixth step concerned the I.T.'s follow-up with the subject about the implementation and progress of any training program.

   The I.T. followed up the progress of the training program as it was being carried out by the subject in the classroom by providing any needed adjustments in procedures, reassessment of student(s), or needed additional instruction of the subject. During this step, the I.T. discussed student performance data with the subject for the purpose of evaluating the progress and direction of the training programs initiated. "Follow-up" included group staff training sessions with or without students before or after school hours. These sessions were used only to reinforce and extend understanding of concepts already being used by the subjects.



Summary of the ARITM Process

In summary, then, and in reference to the underlying assumptions and five characteristics of the ARITM, this overview follows:

1. The method provides in-service training to subjects while in their own classroom, while the subjects are actively involved with the problems of teaching their students.

2. The method models and actively promotes student instruction based on accurate assessment of the developmental level and instructional needs of each student. This approach is characterized by: a) definition and behavioral statement of the problem; b) assessment of the functional level of the student; c) writing of an individualized plan of instruction;

d) subdivision of instructional procedures into objectives which best facilitate the student's learning; 3) evaluation of the student's progress toward meeting those objectives; and f) program modification based on evaluative feedback.

This procedure is used on two levels. All training of students adheres to this process, and all in-service training of the staff members likewise employs the same process.

3. The subjects were afforded the opportunity to practice any program procedure or technique immediately after the model demonstration had been presented. This practice was done in the presence of the I.T. so learning could best be achieved.

4. Behavior modification techniques were employed on two levels. On the first level, the I.T. during demonstration, and the subject during practice, used a behavior modification format when instructing the student. On the second level, the I.T. shaped the subject's behavior in practice sessions by applying these same behavior modification techniques on the subject. The difference between utilization on these two levels was primarily in the reinforcements used. When using these techniques with the student, tangible reinforcers such as toys, tokens or food were likely to be used in conjunction with social reinforcers. When used with the subject, the I.T. used only social reinforcers such as praise and positive feedback.

5. The content or subject matter of the in-service training was totally designed and controlled by the actual problems of instruction encountered by the individual staff member in his everyday instructional activities.

Evaluation of the ARITM in Institutions

In an attempt to evaluate the effectiveness of the ARITM in institutional settings, McBride (1972) compared a traditional lecture method of in-service training to the ARITM (in McBride's terms, "on-the-ward training.").

Each treatment group received training in teaching language to the residents of the institution. The training centered around proper use of assessment and behavior modification techniques as tools

of instruction. McBride hypothesized that the pre-test post-test gain scores of the group trained using on-the-ward training would be equal to or better than the scores of the group being trained by the traditional lecture method. The subjects were forty institutional attendants assigned to two treatment groups of twenty each. Treatment Group I participated in the on-the-ward training. Each attendant in Treatment Group I was exposed to ten training sessions each thirty minutes in duration. During these sessions, the subjects worked with the children they see every day during the normal discharge of their duties. Treatment Group II ("off-the-ward training") received in-service training consisting of formal class sessions with lectures and discussions and supervised practicums. Subjects in Group II were relieved of their regular duties to attend morning classes. Classes consisted of lectures on principles of behavior modification, observation and recording, language development, self help skills, and management of behavior problems, audio-visual presentations, group discussions, and discussions on problems encountered in the previous days' practicum experiences. In addition, specific problems and tasks were outlined which were to be practiced during afternoon practicum experiences. These experiences took place with different children from those in the subjects' regular charge. Although McBride states that the practicum experiences of Group II subjects were "supervised," he does not indicate the nature of the trainer/trainee interaction during supervision. It is assumed that this supervision did not employ the shaping and reinforcements employed in Treatment Group I, and that feedback to and reinforcement of the trainee was delayed until

the following class session where such interaction was more abstractly related to the trainees' approximations of the training goals.

McBride summarizes the differences between the two treatment groups in the following manner:

Treatment I	Treatment II
1. Trained on the ward	1. Trained off the ward
2. Trained with children in the subject's charge	2. Laboratory experience with new children
3. Each attendant received approximately 5.0 hours of training	3. Each attendant received approximately 40 hours of training
4. Approximately 120 hours of staff time	4. Approximately 120 hours of staff time

McBride's evaluation dealt with the measurement of the subjects' application of learned behavior modification techniques. To measure application, McBride developed an observation instrument referred to as the Behavior Analysis Rating Form (BARF).

The results of McBride's study support his hypothesis of equal or greater effect. Neither Treatment Group I nor Treatment Group II showed significant differential gains. Both groups showed small but non-significant gains from pre to post-treatment. In reference to the small gains, McBride makes several observations and conclusions worth investigation.

McBride, unlike some investigators, chose to use an observation instrument that would measure application of learned skills. The learning of the skills was substantiated in McBride's study, yet their application was minimal. Therefore, McBride concluded that the ability to use and the tendency to use skills require different measures.

McBride also suggests that the reward system within an institution reinvorces the attendant's custodian and caretaker behavior and not his instructional behavior. His conclusion is reinforced by other investigators.

A third conclusion is that conflicting demands on the attendants' time mitigate instructional opportunity.

McBride suggest that a possibility for explaining the absence of greater gains lie in attendant role expectation. His colleagues do not see him as a teacher.

Because of McBride's conclusions and implications, it was decided to evaluate the efficacy of the ARITM in an atmosphere where some of the mitigating influences could be eliminated.

The public school system offered such an environment. It was assumed that staff in public school programs were education and not care oriented, that their rewards would be contingent upon habilitative and not controlling skills, and that they would be more likely to see themselves as teachers and not caretakers.

Purpose of Project

Prior to 1973, the ARITM was viewed and functioned solely as a method for providing in-service training in institutions. Graduate students were involved informally in its use as implementors of the training and it was not considered as an integral or primary process for teacher training. Not until this present project was it fully utilized as the major vehicle for the training of graduate students as an integrated approach to the teacher training/in-service training concept.

In the past, the decline in the use of laboratory schools in Michigan, the remote locations of institutions for the retarded, the lack of funding for educating the severely retarded and the training of teachers for this segment of the population had, as forces, acted in consort to create a great gap in the provision of comprehensive services to the handicapped. At the same time, social changes and the consequential passages of laws in this area served to point out the needs that had to be addressed.

The purpose of the overall project was more far reaching in scope than the focus of this investigator's study. The project (the Jackson-Hillsdale-Lenawee Project) was an attempt to demonstrate feasibility of integrating the two traditionally separate functions of graduate teacher training and in-service training. Beyond the attempt to show the temporal and economic efficiency of such integration, the project hoped to demonstrate that a more reality-based and applicable experience could be derived through this integration than would be realized should the two separate functions remain separate. Furthermore, the project was to demonstrate that the ARITM could serve well as a method for improving the quality of both the in-service and graduate training experiences.

Purpose and Focus of the Study

This study is an evaluation of the effectiveness of the Active Response In-service Training Method (ARITM) as an in-service training model for use with teachers and aides in public school

programs for trainable and day training students (moderate to severely retarded youngsters). More specifically, it was designed to profile some changes in important teacher behaviors that accrued to the subjects over the period of in-service training (treatment) using the ARITM. As such, the investigator studied four dimensions of subject behavior he considered to be important to any long lasting benefits that one might expect of an in-service training program designed to improve the teaching competency of an educational staff.

In consideration of the above, it appeared appropriate to conduct an investigation of a clinical nature concentrating on the types of behavior change observed. It was hoped that by this method, one might develop some expectations for outcomes when employing the ARITM with similar populations.

CHAPTER II

METHODOLOGY

DESCRIPTION of PROJECT and STUDY

Description of Intermediate School District Program Organization

This study (part of the Jackson-Hillsdale-Lenawee In-service Training Project) was conducted in three intermediate school districts (Jackson, Hillsdale and Lenawee) in Michigan. In-service training was given to staff members employed as instructors (teachers and aides) in programs for moderately to severely retarded children and multiply handicapped children of the three school districts mentioned above.

Each school district maintained a slightly different profile of programs. Hillsdale programs were housed in two separate facilities: trainable and day-training programs were jointly housed; a training workshop was housed in a separate facility. The training workshop was not ready for occupancy until one month after commencement of this study. Jackson programs were originally housed in four separate facilities: primary trainable programs were located in a regular elementary school; multicap programs were housed in a building located on the grounds of a hospital; day-training programs occupied several classrooms in a church, secondary trainable programs were located in the old Torrant Training Center. At a point in time half

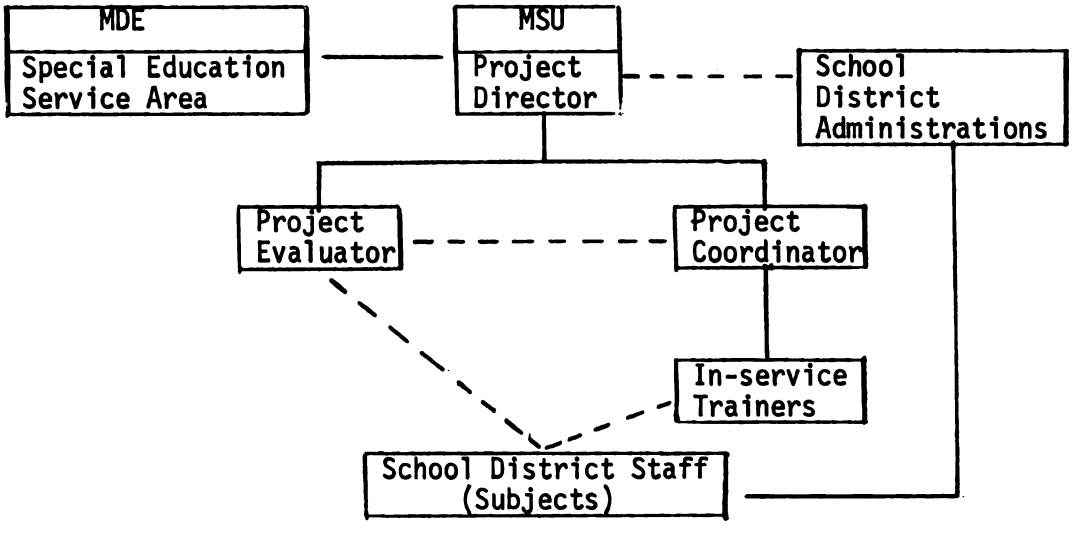
way into this study, all Jackson programs, with the exception of the multicap program, were merged and jointly housed in the new Lyle Torrant Training Center. Lenawee programs occupied two separate facilities: in the Lenawee school district, the Lenawee Institute housed primary and secondary trainable programs; a second facility on on the Institute grounds housed the day-training program for pre-school age through secondary school age youngsters.

The student population served by all three districts' programs approximately totaled 222. This population consisted of 162 moderately retarded (trainable), 48 severely retarded (day-training), and 12 multiply handicapped (multicap) students. The ages ranged from 2 years to 22 years old. For purposes of this study, day-training and multicap student populations were combined. This combined population will be referred to as day-training. This combination has been found desirable for two reasons: 1) the size of the multicap program was too small to consider separately; and 2) it is very difficult to accurately distinguish between the two classifications with younger children.

Description of the Jackson-Hillsdale-Lenawee Project Organization

The administrative organization for the Jackson, Hillsdale, Lenawee In-service Project is described as follows. The Michigan Department of Education (MDE) provided financial support for the project through a grant. The Special Education Division of the Michigan State University (MSU), Department of Elementary and Special Education

assumed all project administrative responsibilities. Project development and overall administrative duties were the responsibility of the Project Director; an MSU faculty member. Project implementation, in-service trainer field supervision, graduate training and all other project administrative responsibilities not managed by the Project Director were the responsibility of the Project Coordinator. The in-service trainers under the supervision of the Project Coordinator were responsible for providing the content of the in-service training. Evaluation of the graduate training aspect of the project was the responsibility of the Project Director and the Project Coordinator. All aspects of the evaluation pertaining to the efficacy of the ARITM as an in-service training model (this study) were the responsibility of the Project Evaluator (this investigator). The following chart graphically depicts the organizational aspects of the project. The "solid" lines depict administrative of supervisory relationships. The "broken" lines depict cooperative, liaison or staff relationships.



Description of the In-service Trainers and University Training Program

The in-service trainers (I.T.s) were those individuals who actually provided the in-service training during the project period. Although this study only indirectly concerns itself with the I.T.s, the following brief description of these individuals seems appropriate. Six teachers of the retarded were selected to participate in a special master's degree program offered by the Department of Elementary and Special Education at Michigan State University. All six were experienced special education classroom teachers. Teaching experience ranged from one to five years. Five of these individuals were female and one was male. Their master's degree program spanned a full academic year (three terms). Each term, the I.T.s enrolled for a given number of lab and field credits (maximum was eight credits per term). Work involved in earning these credits constituted the time each I.T. spent providing in-service training to the districts participating in this project. Simultaneously, each I.T. was enrolled for four credits each term of independent study in mental retardation. The requirement for those credits was participation in a group seminar. Most of the material presented in this seminar centered around the knowledge and practical application of the principles of behavior modification, assessment-based teaching, the development and evaluation of assessment-based training programs and assessment instruments relevant to moderately and severely retarded students, and the principles and application of the Active Response In-service Training Method (ARITM). Seminars were also

devoted to exposure of the I.T.s to a variety of assessment and training materials appropriate to the focal student population. Most I.T.s took additional related coursework.

The group seminar was developed, implemented, and supervised by the Project Coordinator who was solely responsible for the course content, instruction and supervision of the I.T.s while at their field assignments. During the first term, when in the field, the project coordinator provided close supervision and modeled the behavior to be learned by the in-service trainers.

In addition to selection criteria and common seminar experiences, certain other attempts were made to equalize the competencies of all the I.T.s. All were given a common orientation to the project and the ARITM prior to commencement of the project period. All I.T.s were instructed in and evaluated on having achieved minimum acceptable skills for implementing basic assessment and training instruments and procedures. This was done during the month of September before the I.T.s had any contact with the subjects. All I.T.s were required to make visitations to all participant programs. Discussion groups were established as ongoing procedures. In these discussion groups, I.T.s shared their experiences regarding development and application of assessment and training procedures, as well as matters concerning dynamics germane to the I.T./subject relationship.

Assignment of In-service Trainers

The I.T.s were assigned to districts in the following manner. The largest district (Jackson) with the most geographically separated programs had three I.T.s assigned to it for the purpose of providing in-service training. To the smallest district (Hillsdale), one I.T. was assigned. The remaining district (Lenawee) was the middle size district and had two I.T.s assigned to it. Within the respective district of assignment, each I.T. was assigned to seven or eight staff members. It became that I.T.'s sole or shared (with another I.T.) responsibility to provide in-service training to the respective staff members. These assignments were made in a non-random fashion. I.T. and district characteristics were considered when attempting to make assignments. Careful assignment of the particular I.T. to the specific district was undertaken to best facilitate a good working relationship among the individuals interacting.

Table 1 depicts the assignment of I.T.s to the various programs and staff members included in the project. The column headed "Number of Staff Served" totals 45 staff members. This study considers only 37 staff members (subjects). The discrepancy is due to staff dropouts, replacements and additions. Also reflected, but not explicitly, in the table are assignments where interns shared responsibilities for a few staff members.

Table 1. Assignment of Each of the Six In-service Trainers (I.T.) to Their Respective School Districts, Staff Members (Subjects) and Programs.

I.T.	District	(Subjects) Served	Program Assignment
1	Jackson	8	Multicap Program and Primary Trainable Class
2	Jackson	7	Day-training Center and Primary and Intermediate Trainable Classes
3	Jackson	7	Day-training Center and Intermediate and Adult Trainable Classes
4	Lenawee	8	Day-training Center and Primary, Intermediate and Adult Trainable Classes
5	Lenawee	8	Day-training Center and Intermediate and Adult Trainable Classes
6	Hillsdale	7	Day-training Center Combined Age Trainable Center and Workshop for Adult Trainable

Selection of Participant School Districts

The Michigan Department of Education - Special Education Services Area had indicated a desire to explore the feasibility of providing an alternative form of in-service training which would focus upon the needs of trainable and day-training program personnel. The Michigan State University Department of Elementary and Special Education was interested in and currently prepared to provide such in-service training as part of a total program of Special Education graduate level teacher training.

The three intermediate school districts of Jackson, Hillsdale and Lenawee were requested to participate in the in-service training project. These three intermediate school districts were specifically requested to participate for the following reasons. Each district supported ongoing programs for moderately (trainable) and severely (day-training) retarded children. Each district was within commuting distance from the university, but not so proximal that the districts were inundated by university training and field service activities. Together, the three districts represented a range of characteristics from urban to rural, and from a heavy concentration of specialized classroom support personnel to limited access to these types of support personnel. The Special Education Directors in each district had expressed a desire to receive in-service training which might be considered non-traditional in format. All three districts had a history of cooperation with one another.

Subject Selection

The selection of subjects participating in the project was a function of their employment in focal programs in one of the three districts selected. Only classroom instructional personnel were eligible for participation. This included only classroom teachers and aides. All general and specialized teacher support personnel were ineligible. Also ineligible were all supervisory and administrative personnel.

As per a prior agreement, all qualifying staff personnel were to receive the same in-service training experiences. No control groups or alternative treatment groups were permitted. The separate administrations of the three participating districts did, however, assure project personnel that no other in-service training programs would be planned during the project period. These were stipulations set by the districts that agreed to participate. The opportunity for any eligible staff member to exempt himself from participation existed; however, this option was only implicitly communicated to the subjects by the school administrations. Under those circumstances, it is difficult to accurately determine the extent to which the participant population was comprised of voluntary subjects.

Subject Characteristics

Thirty nine (39) subjects participated in the project. This population consisted of 15 teachers and 24 aides. Teaching experiences with handicapped children ranged from no prior experience to nine years of experience. Thirty three (33) subjects were female and six were male. Two subjects dropped out of the project and were replaced by the end of the fourth month of the project period. No post data were collected on the subjects who dropped out, and no pre data were collected on the replacements. The total population, for purposes of this study, was 37 subjects. Table 2 reflects the disposition of the subjects throughout the school districts.

Each subject remained in their original school program with no significant change in assignment during the project period. Most

Table 2. Disposition of Subjects According to Position, School District and Program Assignment.

Teachers	Aides	School District	Program
0	2	Hillsdale	Day-training Program
1	1	Hillsdale	Trainable Program
1	0	Hillsdale	Adult-Training Workshop
1	4	Lenawee	Day-Training Program
5	5	Lenawee	Trainable Program
1	7	Jackson	Day-Training Program
5	4	Jackson	Trainable Program

trainable program assignments were characterized by the placement of one teacher and one aide per classroom. Day-training programs were organized in a program rather than on a classroom basis. One head teacher provided the program leadership, supervision and teaching model for several aides who were directly responsible to that head teacher.

Although no formal attempts were made to compare the subjects, students or program organization in this study with other populations engaged in instruction with similar students, the literature and opinions of experts in the field recognize the afore described characteristics as being typical across the nation. The findings of Harris (1972), in her study of day-training programs in Michigan, show that the characteristics inherent in the subjects, students and programs participating in this project are similar to other programs of this type throughout Michigan.

Implementing the ARITM

Using the six steps of the ARITM, each in-service trainer (I.T.) under the supervision of the Project Coordinator provided nine months of in-service training to the designated staff members (subjects) in his school district program of assignment. The in-service training was provided according to the following schedule.

Each in-service trainer (I.T.) spent one day per week during the first one-third (1/3) of the project period with assigned subjects. During the other two-thirds (2/3), each I.T. spent an average of two and one-half (2-1/2) days per week with assigned subjects. During these periods of contact, each I.T. worked with the subjects according to the way they naturally clustered when instructing their students; individually, dyads, triads, or larger groups. An effort was made by each I.T. to divide the periods of contact in such a manner as to provide equal time with each subject. Throughout the project period, the I.T.s worked with the subjects according to the ARITM.

EVALUATION PROCEDURES

Overview of the Four Dimensions of the Study

Only certain aspects of the efficacy of the ARITM were evaluated by McBride (1972) when this method was used to provide in-service training for ward attendants in a state residential institution for the retarded. Burke (1972) expanded its use to the public school sector, but no formal evaluation effort had been undertaken to ascertain its effectiveness in this sector. This present study represents

such an endeavor. This study had two major goals. The first goal was to provide a profile of subject behavior change during this project period. This profile of change included four dimensions or areas of potential change. The second goal was to provide a body of evaluative feedback to be used in a formative process for the modification of the ARITM for future use. This latter information is not formally reported in this study.

The four dimensions of interest mentioned under goal one above are as follows:

1. The opinion dimension concerned itself with the subject's expressed feelings about his or her strengths as a teacher of retarded children, his or her feelings about the ARITM as an in-service training method, and his or her feelings concerning certain concepts and methodologies used in instruction (e.g., behavior modification, prescriptive teaching and behavioral objectives).

2. The verbal expression dimension viewed the subject's ability to express varbally an understanding of the process of prescriptive teaching and the technical language of instruction.

3. The skill dimension considered the subject's ability to apply appropriately the techniques of behavior modification.

4. The intent dimension investigated the subject's intent to incorporate the new skills into the everyday instructional activities of his or her classroom.

Instrumentation

Opinion Dimension

A 40 item opinion survey (Appendix A) was constructed for administration to the subjects. The data derived through this survey constituted the bulk of the information used in the consideration of this dimension. This survey was piloted on 46 teachers and aides

working in various trainable and day training programs in Michigan. The purpose of the pilot studies was to arrive at an acceptable level of statement clarity and to address major areas of objections to survey content. These results although not stated explicity are represented in the survey. Adhering to a five point scale, the subjects are asked to agree or disagree with the statements included in the survey. The statements fall roughly into three categories. The first category contained those statements which had primary importance for the main concerns of this study. Those statements are Numbers 4, 5, 6, 15, 16, 18, 29, and 40. The second category contained statements which provided information of contextual and formative importance. As such, they had no direct reference to formal aspects of this study. Examples of such statements are Numbers 10, 11, 20, 22, 23, 26, 30, and 33. The third category included those statements which were used to mask statements which had a more direct bearing on the main purposes of the study. Examples of these are Numbers 17, 21, 24, 31, and 36.

This survey was administered on a pre and post basis, and subject opinions were analyzed for change over the project period. A more detailed statement of the procedure will follow in a later section of this chapter when the process of the total evaluation is discussed.

The following is the rationale used for the selection of the specific statements identified above as being of main importance. Each statement will be considered singularly.

Statement Number 4: "I am satisfied with the in-service training program that now exists in my school system."

It was generally understood that there was a lack of appropriate in-service training for trainable and day-training instructional personnel. This, if factual, should be reflected in subject responses to this statement. It was also desirable to find out if the ARITM project might exercise some influence on the post treatment responses.

Statement Number 5: "I find that little of the new information I obtain at in-service experiences I apply directly in the classroom."

One often voiced complaint of in-service content is inapplicability. Applicability of the ARITM is assumed, as all instructional objectives are derived from observation of classroom needs and directly applied as part of the in-service procedure. Since the ARITM is such a radical departure from the traditional, this statement was included to see if there was any identification of the ARITM as a recognized in-service model.

Statement Number 8: "A very important component of an in-service training model should be providing release time from the classroom to participate in the program."

From an administrative standpoint, one of the positive aspects of the ARITM is the elimination of the necessity to release teachers for in-service and the hiring of substitutes. From a training standpoint, staff development can be ongoing and training can be undertaken in an environment close to the everyday problems of staff.

The lessening of the felt need for release time would have implications when planning future in-service training formats.

Statement Number 15: "Prescriptive teaching is an important technique in the education of retarded children."

Although gaining in overall popularity in education, prescriptive teaching (assessment-based teaching) in programs for trainable and day-training students remains largely unused. Most likely, the lack of available diagnostic instruments for this population has contributed much to the lack in implementating prescriptive procedures. The ARITM employs a prescriptive approach and Statement Number 15 was included to access the subjects' opinions about such an approach.

Statement Number 16: "Behavior modification has much to contribute to the education of the whole child."

Behavior modification techniques have long been an important tool in teaching skills to difficult subjects, yet they are negatively criticized when considered generally in education and further in the context of the "whole child." Assessment of subject opinion on this issue was thought to be of some importance as the ARITM employs behavior modification techniques extensively.

Statement Number 18: "Behavioral objectives are important tools for educators of the retarded child."

It was stressed earlier that attendants within institutions tend to view their role as one of caretaker rather than instructor. To a certain extent, the caretaking function is evident in public school programs for the severely retarded. Use of behavioral objectives would appear to negate the caretaking function, and it is therefore assumed that stronger agreement with Statement Number 18

would indicate more of a tendency to instruct than to simply care for the student.

Statement Number 29:

Statement 29 is divided into nine component statements each addressing a skill or knowledge that might be present in the profile of a competent instructor of handicapped children. For purposes of this study, it was felt that the subject's perception of his strength in these areas was as important as actual skill because a large percentage of the subjects were not trained as teachers and, therefore, might not perceive themselves to be instructors. McBride found this to be true in his evaluation of the Burke/Rowland method in the institutions. In his consideration of the reasons behind the lack of significant gains, he attributed to this factor some mitigating influence. It was, therefore, decided to include some measure that might identify the existence or absence of such a role factor in the public school population and simultaneously test for any growth in this factor if it existed.

Statement Number 40: "I feel positive about participation in this year's in-service training program."

This was simply an attempt to assess pre and post feelings about the total ARITM experience.

Intent Dimension

This dimension dealt with McBride's concern about the intent to teach and any subsequent assumptions that might be made pertaining to the actual incorporation of the new skills into the instructional program. It is assumed that the mark of an effective

program is the extent to which it effects teacher behavior beyond the training period. One underlying assumption of prescriptive or assessment-based teaching is that instruction should be "individualized." It is considered desirable to individualize as much as possible. Two frequently stated reasons for lack of individualization in the classroom are lack of time and lack of the necessary skill. This investigator felt that once a subject gained skill in this area it would manifest itself in the nature of subject/student interaction, and being desirable, would continue to exist beyond the in-service training project period. This dimension, therefore, considers the change to an individualized form of instructional interaction over the project period as an index of intent to incorporate.

Whole Class School Day Program Schedule:--At the beginning of the project period, before any in-service training occurred, each I.T. was asked to survey the nature of the instructional interaction that occurred in the assigned classroom. The I.T. was not informed of the evaluative purpose of this survey. He was simply told that he was to get, via subject interview, an accurate picture of what was occurring between the staff members and the student. This same exercise was undertaken by the I.T. at the termination of the in-service training project. Each I.T. was instructed to talk to the subjects in their respective classrooms. The conversation was to center around what activities might occur in the classroom on a typical day. The I.T. then asked the subject to classify these activities according to five modes of subject/student interaction (See Appendix B). These interaction modes were ordered according to the degree of

individualization inherent in the interaction. It was earlier stated that the greatest degree of individualization possible is desirable. The order in which these modes were placed might, therefore, be a point of contention. It is difficult to argue that "small group same activity" is less desirable than "whole group individual." This argument was, therefore, abandoned in favor of simply stating that "small group same activity" is less individualized than "whole class individual." To support this argument, five graduate students in special education were selected at random from a group of ten possible selections. These five students were asked to rank the modes as to which they felt indicated a greater degree of individualization of instruction. All students gave identical ranks to the five modes. The interactive modes in rank order were:

1. "Individual" (one staff to one student).
2. "Small Group Individual" (staff member working with small group, but gearing the general activity to individual performance levels).
3. "Whole Class Individual" (the same as #2, but involving the whole class).
4. "Small Group Same Activity" (staff works with a small group with all students expected to perform at the same level).
5. "Whole Class Same Activity" (staff works with the entire class expecting all children to perform at the same level).

In anticipation of the tendency for individual subjects to give socially acceptable responses, two precautions were employed. Each I.T. was instructed to be as precise and standard as possible when interviewing the subject and to refrain from judgmental reactions. A second precaution was taken by instructing the I.T. to wait two

weeks and then, on the basis of his firsthand familiarity with the classroom activities, re-examine the schedules to judge how well they actually represented what occurred in the classroom. Any major discrepancies were to be noted on the schedules. Some discrepancies did occur, however, they all involved the interaction mode that occurred during free play and beginning of the day activities (e.g., attendance and flag salute activities). Both of these activities were classified by several subjects as being "whole class individual" or "individual." A decision by the investigator was made to reclassify these activities as "whole class same activity." This decision was applied in both the pre and the post interviews and the rationale for the decision was as follows: The decision concerning the beginning day activities was obvious as there was no individual consideration of the child's level of functioning during this period. Although the free play rationale was less obvious, it was decided that during any activity where there is no subject/student instructional interaction of an active nature directed toward given students, this activity was considered "whole group same activity." The instructions for completing these schedules can be seen in Appendix C.

The subject responses during the interview concerning typical activities for the class were recorded on the "Whole Class - School Day Program Schedule" (Appendix B). In column one, the time segment was noted for the corresponding activity described in column two. The interaction type was then designated by placing a check in one of the five remaining columns.

Scoring the schedule responses for subsequent evaluation was done by adding the number of checks in individual columns, thus giving the total number of interactions for each interactive type. These column totals were then added to yield a grand total (the total interactions of all types occurring during a typical day). The column totals were then each divided by the grand total to show the percentage of interactions taking place according to the respective interactive types. These percentages were then compared on a pre/post basis. All checkmarks were treated as equal regardless of the duration or quality of the particular activity being classified. The following considerations were addressed when developing a scoring procedure for the schedules:

1. An attempt was made to assign weights to various checkmarks according to the judged instructional value of a particular activity. However, when considering the severe deficiencies in cognitive, affective and psychomotor functioning of trainable and day-training students, it appeared improper to judge that any one given activity was of more value than another; for example, the roll call and flag salute activities versus a body parts identification exercise.

2. It was equally difficult to justify weighting any given checkmark according to the duration of the respective activity when one considered the problems of attention span and interest of the students.

The decision to equate all checkmarks appeared to be the fairer method, as it assumed that any injustices would be distributed fairly across all schedule activities and would therefore not bias a pre/post comparison.

Verbal Expression Dimension

The Verbal Expression Dimension considers the staff's ability to verbally express an understanding of the process of prescriptive teaching and to use technical language of instruction. Prescriptive teaching according to Peter (1965, p. 1) is:

> . . . a method of utilizing diagnostic information for the modification of educational programs for children with problems. It accomplishes this purpose by determining the educational relevance of the child's disability and devising teaching procedures to yield desirable changes in the child's academic progress, emotional condition and social adjustment.

Peter considers the concept of prescriptive teaching in a wider sense than is necessary for the purposes of this investigation. Essentially for the present purposes, "prescriptive teaching:" and "assessment-based teaching" are used as synonymous and have these all-important aspects in common.

1. All instruction is preceded by an assessment of diagnosis of an educationally relevant problem.
2. A problem is defined in terms that can facilitate the understanding of instructional needs.
3. An instructional intervention is planned which is based on the child as a developing individual who learns in ways that are unique to him (individualized instruction).
4. A precise delineation of instructional activities and an understanding of the role each activity plays in the overall instructional process.
5. The delineation of measurable objectives and goals the child should reach.
6. The evaluation of the child's progress toward attaining these goals.

The subjects' use of technical language was also assessed in this dimension. "Technical Language" was left undefined for purposes

of this analysis, as it is impossible to delineate all the possible technical terms that could be used in a verbal expression. As inclusion of some terms and omission of others might have a biasing effect on the analysis, it was decided to attempt no delineation at all.

Teaching Sample:--In September, immediately prior to commencement of the actual in-service training, each subject was asked to engage in an instructional activity with a student of his/her choice. The subject was to teach the student something that the subject felt the student needed to learn but had not yet mastered. This activity was to be five minutes in duration, and it was to be recorded on video tape. (The purpose of the video taping will be explained when considering the skill dimension.) Each subject was given the same set of instructions (Appendix D). Each subject was asked to choose one of four curriculum areas and to instruct in that chosen area (self care, language, motor skills, arithmetic skills). It was felt that no matter what was taught, it would have to fall in these four general areas.

The intent of this investigator was to provide identical directions and explanations to each subject. Each subject, however, exhibited different reactions to the idea of being video taped; some were hesitant, some were unthreatened. The investigator, therefore, found it necessary to take varying amounts of time and engage in varied conversations with each subject. In an attempt to provide some standardization across subjects, the investigator adopted three rules:

1. Each subject would be assured that no judgments as to "good or bad teacher" would be made or indeed could validly be made by watching a five minute tape. Furthermore, no one from his school district or who knew him would ever see the tape.

2. No information as to the actual interaction variables of interest would be passed on to the subject.

3. The investigator would talk with each subject until the subject felt sufficiently calm and ready to participate. The subject would indicate his readiness.

Prior to engaging in the teaching sample, each subject was presented with a box containing items that could be used during the instructional activity. The subject was told that he could use materials he wanted. These included anything in the box, as well as anything he had available to him in his school. The box contained three types of items:

1. Standardized instruments used for assessment (Cain-Levine, Balthazar Scales, P.A.C.).

2. Teaching aids used during the instructional process (clothing, wooden and plastic colored objects, combs and brushes, dolls, etc.).

3. Reinforcers (candies, potato chips, fruits, etc.).

No pursuasion was used to encourage the subject to look at the contents of the box and no assistance was rendered for determining what, if any, of the contents might be useful. The subject was told that he had up to 20 minutes to decide what he wanted to teach and which student he would like to work with. During this time, he was to select whatever materials he needed. When the subject indicated he was ready. the subject and his student were ushered into a conference room. The room contained the video taping equipment, chairs and tables. The subject was informed that he would be alone with his

student for a period of five minutes. The time would begin when the investigator left the room and would end as signaled by a knock on the door. The subject was informed that the knock on the door only signaled the end of the five minutes, but that he could continue to instruct the student to reach closure rather than interrupt what he was doing. The five minutes of interest could be located on the tape as that segment of tape between the sound of the door clicking and the knock signaling the end of the period.

VTR Response Sheet:--After completing the teaching sample, the student was sent back to his room and the subject was asked to remain for a minute. The subject was then asked to do two things. He was asked to complete the opinion survey described in the opinion dimension. He was asked to answer four questions on the VTR Response Sheet (Appendix E). The VTR Response Sheet related to the video taped teaching sample that the subject had just completed. As was mentioned above the concept of assessment-based teaching addresses several aspects. These four questions focused upon four of these aspects. A similar form asking three questions had been used on prior occasion by Burke in some of his earlier (1970-1971) in-service training. Burke's purpose, unlike the present purpose, was to provide a description upon which he could base his training of the staff member. The questions formulated for this present study represent a departure from Burke's form and are resultant from several discussions and two field tests. An answer to the first question, "What activity or groups of activities did you teach?", provides three pieces of information: 1) it identifies the activities for later use in the

evaluation; 2) it demonstrates the subject's ability to select activities appropriate to the curricular area in which the subject chose to work; and 3) it manifests the subject's ability to describe each concrete activity and show the subject's understanding of the role this activity plays in the total instructional process. For example, a subject could have said: "We were bouncing a ball," or he could have said, "We were bouncing a ball to work on eye-hand coordination, fine and gross motor skills." The second question, "How did you determine that these activities needed to be taught?", focused upon the subject's awareness and use of assessment data as a basis for determining appropriate instructional activities. The third question, "Why did you teach the student the way you did?", asked the subject to elaborate on his sensitivity to the role individual differences play in determining appropriate instruction. The fourth question, "Why did you think it was important to teach this activity or groups of activities?", focused upon the subject's awareness of the importance of having objectives and goals toward which he could work.

This entire process; involving the teaching sample and answering four questions was repeated at the termination of the in-service training project. All procedures were identical from pre to post. The subject, however, was free to select the same or a different curriculum area for instruction and the same or a different student. These options were allowed for two reasons: 1) the particular variables of interest were not dependent upon the subject matter content of the interaction; 2) the focus of the evaluation is on subject growth and not on student progress.

Evaluation of the VTR Response Sheet:--The following procedure was used to evaluate the quality of each subject's answers to the four questions. Each subject's response sheets were coded. Each subject was randomly assigned two code numbers. One code number represented a pre-test code and the other represented the post-test code. The subject responses were handwritten, so each statement was retyped on a new response sheet under the appropriate question. All responses were transcribed exactly as written by the subject. No corrections or modifications were made during this transcription. After transcription, the investigator inspected each response for statements that might have revealed when the responses were made. For example, all statements of a temporal or seasonal nature, all statements referring to the MSU in-service trainer or aspects of the in-service training were masked with black felt tip pen. Statements were blacked out as opposed to deleted in transcription because the deletion appeared to be more detrimental to understanding the response than did the masking. More blacked-out references appeared in the post responses than in the pre responses. To eliminate the potential for bias, the investigator added statements to pre response sheets and subsequently masked them out. The typed response sheets were than photocopied to eliminate any possibility of the statements showing through the masking.

It was the intent of the investigator to use four qualified independent judges to evaluate the responses. This was impossible, as the time of year (late spring) and other responsibilities made most qualified individuals unavailable. A qualified person was one

who 1) understood the concepts of assessment-based or prescriptive teaching; 2) was experienced in observing instruction; 3) had documented teaching skills; and 4) had no direct knowledge of the subjects involved or had not visited or worked in the in-service training project. Two individuals were found who fit the qualifications. One of these judges was eliminated because she found two subject responses which the investigator had failed to mask. The appropriate corrections were made before the second judge was asked to evaluate the responses.

Judgment Form:--The judge was presented with a packet containing 37 manila file folders. Each folder contained the pre and post responses for one subject. The two response sheets were placed in the folder in random order. A coin was flipped to decide which sheet (pre or post) would be placed in what position in the folder. Included in each folder was a judgment form (See Appendix F) upon which the judge was to record his evaluations. Written instructions for the judge were included with the packet (Appendix G and H). In addition, oral instructions were given to the judge by the investigator. At that time, it was confirmed that the judge was aware of the procedure and the importance of judging the responses in light of the particular aspects of the prescriptive teaching concept. It was also confirmed that the judge was aware of the purpose behind asking each of the four questions. The judge was told to take as much time as was needed to complete the 37 folders.

The procedure for completing the judgment form (Appendix F) was, first to indicate which response was the better by placing an "X" in the appropriate box. As can be seen on the judgment form,

subsections "A" and "C" contain boxes. On the lines following each box was the code number for the respective response sheet. The "X" was to be placed in the box preceding the code number to which the judge was referring when indicating which was the better response. After having indicated which response was the better one, the judge was asked to indicate how difficult it was to make this decision. This was done by completing subsections "B" and "D" on the judgment form. In this way, the investigator could get a crude estimate of the amount of change that had taken place over the period of the in-service training as well as the direction of that change. The judge was to complete each judgment form progressing from subsections "A" to "D" in a linear fashion.

Given these data from this judgment form it was possible to determine the number of subjects who showed improvement from pre to post on both their ability to verbally express an understanding of prescriptive teaching and to use technical language. The degree of difficulty described in making the decision was then translated as being roughly equivalent to the amount of difference manifested by the subject between pre and post responses. This was then taken to represent growth in a positive direction if the post description was judged better than the pre, negative change (no growth) if the pre was judged better than the post description.

Skill Dimension

This dimension considers the subject's ability to apply appropriately the techniques of behavior modification . To assess this dimension, the contents of the video taped instructional sessions

between the subject and the student were analyzed. An observation instrument was developed to measure subject application of various components of an instructional cycle as defined by a behavior modification framework. The instrument was developed expressly for this study because no existing instrument could satisfy the requirements of the observation procedure. A survey of 79 observation instruments (Simon and Boyer, 1970) contained no applicable instrument.

Ashbaugh (1971) in his study on teaching ward attendants to use behavior modification, developed an observation instrument. However, this instrument was not appropriate for the present study as it focused on gross attendant and resident behaviors which were not of interest to this investigator. Ashbaugh's instrument depended upon a combination of the observer's recollections and attendant's verbal reports on hypothetical situations, as well as direct recording of observations.

Gardner (1970) developed a Training Proficiency Scale for measuring attendant's ability to apply behavior modification techniques. Although Gardner's instrument analyzed the behavior modification cycle into components of general use in this study, three major characteristics rendered the instrument of little use to this investigator: 1) the manual was vague in explaining use; 2) proper use of the instrument required making immediate judgments about the sufficiency of the instruction; 3) rating sufficiency on a five point scale for each task scale appears to be cumbersome even though Gardner reports high reliability scores between this and overall judgments; and 4) the method of recording observations requires too much writing.

McBride (1972), in his study of some of Burke's and Rowland's earlier work, developed an observation instrument for measuring attendant's ability to apply appropriate behavior modification techniques. For the following reasons, McBride's instrument was not used in the present study. McBride observed attendants whose traditional duties did not include instruction. A major portion of McBride's instrument focused on the attendant's "intent to teach." In the present study, it is assumed that teachers and teacher aides do intend to teach. McBride was interested in an attendant's ability to apply a particular technique. If the attendant applied the technique once, it was assumed that he had the skill. In the present study, consistency of application was of concern to the investigator. McBride's instrument was developed for use in highly structured teaching situations. The present study dealt with a wider variety of informal teaching situations.

Instructional Behavior Observation Check List:--The Instructional Behavior Observation Check List (IBOCL) (Appendix I) was designed to be used in a video tape play-back situation. This allowed the observer to record auditory and visual interaction and to replay the interaction as often as necessary to be totally accurate in recording observable behaviors.

The IBOCL drew from the experience and the crucial observation areas of Gardner, McBride and earlier works of Burke and Rowland, and was developed in cooperation with Rowland, who acted as the project coordinator in this present study. Development of the final version of the IBOCL was the culmination of modifications piloted over the

entire project period. The major modifications occurred because of inability to reliably classify given behaviors which varied slightly across subjects. The greatest insufficiencies in the instrument appeared in the areas of defining "task change" and discerning the difference between a "stimulus presentation" and a "prompt." The final resolution of the "stimulus presentation" v. "prompt" problem can be seen in the IBOCL code key (Appendix J). It was impossible to discern a task change by observing the subject/student interaction. To allow for the ability to note off task behavior on the part of the subject, the description of the instructional objectives of the interaction was written at the top of the IBOCL in the area designated "task description." The description was an actual transcription, in the subject's own words, of what was supposed to be transpiring during the interaction. Using the description as a guide, the observer could then judge off task behavior. An example of off task behavior follows:

(Subject Description)

"I was working on receptive labeling of shapes."

(Actual Interaction)

a "Mike, show me the square." Mike points to triangle.
"No, the square, Mike." Mike points to square.
"That's right, the square, good boy!"

b "Mike, what is this?" Teacher points to circle. Mike says, "Circle." "Good boy!"

Part "a" of this interaction is an example of receptive labeling as Mike is required only to indicate his understanding of the object. Part "b" is an example of "expressive" labeling because the student must not only understand the label, he must also express

the label. In this case, the observer would indicate a task change because nowhere in the task description did the teacher indicate that he was working on expressive labeling.

In some cases, the subject's description of task was of little assistance in determining task change; however, with few exceptions, the instruction was so poorly managed in these cases that task changes were obvious and no descriptions were necessary.

Another significant change in the IBOCL over the project period appears in the format of the instrument itself. The check list first appeared as columns of cells under column heads of crucial components of the instructional cycle. The observers were expected to memorize codes for given observations and write the correct code in the appropriate cell when that behavior appeared in the interaction. Some of these codes contain three letters. It was discovered that during the amount of time it took to look away from the TV screen, locate the appropriate cell, write the code and look back, several discrete and crucial pieces of behavior had occurred. The observer would then have to stop the video tape, rewind and view the interaction missed during the recording time. This caused frustration and fatigue on the part of the observer and decreased reliability and validity of the coding. To eliminate this problem, all possible appropriate codes were printed in the cells. After minimal practice, the observers rarely had to look away from the TV to make the appropriate recording. An additional aid for maintaining proper orientation on the check list was instituted. The columns headed "Stimulus Presentation," "Response," and "Reinforcement" were color coded yellow. This sped up the act of locating the proper column.

The IBOCL comprises ten columns. In all columns, the observer is asked to do two things. First, he must classify the behavior and mark the appropriate code, and then he must indicate a judgment as to the appropriateness of the classified behavior.

The judgment aspect was not to be recorded at the same time as the classification unless the behavior was so gross that immediate judgment was called for. Instead, the observer was to continue classifying behaviors until later contextual clues made judgment more certain. Examples might be the continued failure of the student to make a correct response or continuation of a subject's behavior which appeared to be acting in detriment to achieving the desired instructional outcomes.

The first column numbered the trials that took place during the interaction. Two check lists were stapled together to insure enough trial rows were available to record all trials that took place during the interaction.

The next three columns comprise that section of the instructional cycle characterized as the "Stimulus Format." The stimulus format is made up of "Task Change," "Attention," and "Stimulus Presentation."

The next two columns are collectively labeled "Response Format" because they both involve some responding to the stimulus on the part of the student. These two columns are respectively labeled "Prompts," and "Response."

The "Consequence Format" is comprised of three columns: "Feedback," "Reinforcement," and "Aversive." Although it can be argued

that all feedback is some form of reinforcement, not making a distinction for observation and recording purposes led to confusion on the part of the observer.

Judgments were made and recorded by the observer because overall estimates of change over the project period could not be made without them. It still appeared impossible to make totally objective judgments about the adequacy of instruction if these judgments were based solely on the presence or absence of an observable behavior. It seems that there remains unmeasurable some aspects of an interaction that can only be evaluated by the abstract professional eye as it views the gestalt of the interaction.

Judgments were reserved until the observer could be reasonably certain that an observed act had some negative effect on the student's ability to respond correctly. All judgments (the + or - codes) except in the "Task Change" column were negative judgments or judgments against the subject's ability to apply behavior modification techniques correctly.

Although some students of behavior modification feel that any task change is inappropriate, this investigator feels otherwise. There are certain situations in which a task change is needed to release tension or reduce boredom. In these cases, a perceptive teacher might well facilitate the instruction by introducing a brief task change. If the observer judged this to be the case, the "A" was checked indicating an appropriate task change.

In-service Trainers as Observers:--The observers were the six I.T.s who participated in the study. Four formal training sessions

in the use of the instrument were conducted. Each session averaged two hours. During these training periods, the I.T.s practiced by observing instructional interactions video taped in programs that were not part of this study. During these training sessions, video tapes were stopped frequently, classification problems were argued out, and final instrument modifications were made. The I.T.s had additional practice with the instrument as each was instructed to use it when observing the subjects during the ongoing treatment periods.

The I.T.s were used as observers instead of another independent group because it was impossible to find other evaluators who had all the requisite skills for observing teaching behavior, coding behavior according to a behavior modification format, and using the IBOCL. The investigator felt that precautions could be taken to eliminate bias.

The investigator felt that this was the best course to take because the complexity of the instrument and the little amount of time available to train observers would greatly reduce reliability if observers independent of the project were used.

Instrument Reliability:--Two forms of interrater reliability checks were implemented. One form measured interrater reliability in assigning negative judgments. One formed assessed interrater reliability against models of prejudged quality. Kendall's Coefficient of Concordance was applied to the former yielding a reliability rating of .86. No statistical test was applied to the latter form. A more detailed explanation of the reliability check procedure can be seen in Appendix K.

Evaluation of Teaching Samples:--Each subject's pre and post teaching samples were given separate numerical codes. Codes were assigned to each segment in a random fashion. After coding each segment, the middle three minutes were edited. After pairing each subject's pre and post segments, a coin was flipped to decide in which order each segment of the pair would be placed on a video tape.

After having each subject's segment randomly paired, it became necessary to decide which subjects were to be viewed by which I.T. No I.T. was allowed to view a subject to which he had provided in-service training, or with whom he had had any contact during the project period. Within the above limitations, subjects were assigned randomly to a tape. The position each subject's paired segments appeared on the tape was also randomly decided.

Six tapes were constructed in the manner described above (one tape for each I.T.). Five of these tapes each contained six subject's pre/post pairs. The sixth tape contained seven pairs. A total of 37 subjects were assigned to a total of six tapes. Seventy four (74) three-minute segments were observed in total. No I.T. observed more than 14 segments. The decision as to which I.T. would be assigned the longest tape was made in a random fashion. The tape observation procedure was completed over a period of two days. Three I.T.s observed tapes on one morning and three I.T.s observed tapes on the following morning. To the investigator's knowledge and as per instructions, no relevant conversation was had between the two groups of I.T.s during the evaluation.

Each I.T. was taken to a separate room and left alone with a video tape recorder, the video tape, pencils and an information package. The information package contained general directions (See Appendix L), a list of coded segments (See Appendix M), and individual folders (one for each pair of segments on the tape). Each of the individual folders contained a verbal description of the interactions, IBOCL forms coded for the segments appropriate to the folder, an Instructional Behavior Analysis Sheet (IBAS), and directions for proceeding. The contents of each folder was explained to the I.T. and step-by-step directions were given.

The I.T.s were to view each segment and complete an IBOCL for each. They were told to stop and review the tape as often as necessary. As the I.T.s were isolated from one another, no conversation between them was possible. They were permitted to take rest breaks as needed and could ask the investigator any questions relating to procedure, but none relating to tape content.

After completing the IBOCL on a given pair of segments and before proceeding to the next pair, the I.T.s completed an IBAS for the pair of segments just viewed (Appendix N).

Instructional Behavior Analysis Sheet (IBAS):--The IBAS is actually a compilation of eleven different sheets of paper. Each sheet asked the I.T. to make a judgment about some aspect of the paired segments he just viewed.

Sheet #1 - asked the I.T. to indicate which segment better reflected the effect of in-service training. The subject was asked to check the box beside the appropriate segment code.

Sheet #2 - the I.T. was asked to indicate on a five point scale the ease with which he was able to make the decision requested on Sheet #1.

Sheet #3 - gave directions for completing Sheets #4 through 10.

Sheets #4 through #9 - each of these sheets asked the I.T. to make a judgment about one of the components of the instructional cycle. The components correspond to the column heads on the IBOCL. Considering only the better segment, the I.T. is asked to rate the subject's strength in each of the components. Rating is on a five point scale from poor to excellent.

Sheet #10 - asks the I.T. to judge on a five point scale the subject's overall control of the situation viewed on the better segment.

Sheet #11 - tells the I.T. to go back and indicate which of the components showed growth from pre to post treatment.

This procedure was followed for each pair of segments until all segments were completed.

SUMMARY of the DIMENSIONS of the STUDY

The following table summarizes the four dimensions of this study and lists the measures used to assess subject change in the respective dimensions. It also recalls for the reader the main purpose or motivation for considering a four dimension evaluation for the study.

TREATMENT of DATA

This study was undertaken to provide a clinical evaluation of the strengths and weaknesses of the ARITM. Because it was intended as an exploratory evaluation rather than a controlled experimental hypotheses testing effort, no statistical inference procedures were applied to the data.

Table 3. Summary of Study's Four Dimensions with Respect to Measures and Instruments and the Objectives Relevant to Each Dimension.

DIMENSIONS	INSTRUMENTS	OBJECTIVES
OPINION DIMENSION	A FORTY (40) OPINION SURVEY. SELECTED STATEMENTS USED. INTERVIEW AND CONVERSATIONS WITH PARTICIPANTS. NO FORMAL HYPOTHESIS RELATIONSHIP.	TO MEASURE CHANGE IN OPINIONS CONCERNING: a. Opinion about general in-service b. Opinion about ARITM c. Opinions about their own strengths d. Opinions about prescriptive teaching and operant conditioning
SKILL DIMENSION	INSTRUCTIONAL BEHAVIOR OBSERVATION CHECK LIST. INSTRUCTIONAL BEHAVIOR ANALYSIS SHEET.	TO MEASURE CHANGE IN STAFF SKILL IN APPLICATION OF OPERANT TECHNIQUES AND SUBCOMPONENTS OF THE CYCLE: a. Proper stimulus presentation b. Prompting c. Shaping d. Reinforcement e. Overall application of skill
VERBAL EXPRESSION DIMENSION	FOUR QUESTIONS ANSWERED BY STAFF ON THE VTR RESPONSE SHEET AFTER SUBJECTS COMPLETED THE TEACHING SAMPLE.	TO MEASURE CHANGE IN THE TEACHER'S ABILITY TO TALK ABOUT INSTRUCTION AND INSTRUCTING CHILDREN. UNDERSTANDING THE IMPORTANCE OF: a. Assessment b. Prescription and individualization c. Objective Setting d. Evaluation AND THE ACQUISITION OF A TECHNICAL LANGUAGE
INTENT DIMENSION	WHOLE CLASS SCHOOL DAY PROGRAM SCHEDULE	TO ASSESS INTENT TO PRACTICE LEARNED SKILLS BY MEASURING CHANGE IN THE CLASSROOM INSTRUCTIONAL INTERACTION STYLE OF THE INSTRUCTOR: a. Individualizing instructional delivery system

Certain methodological aspects of the ARITM would appear to render a rigid experimental design impractical. To properly implement the ARITM the subjects must be free to interact naturally within their environment. Subject independence and equal subgroup size could not be assured unless the natural school environment were disrupted. Changing this environment would be a basic contradiction of the ARITM. An agreement to provide in-service training via the ARITM to all staff members eliminated any possibility of maintaining control groups.

Because of the above, this investigator felt that a descriptive report would best serve the purposes of the study by reporting trends and tendencies in subject behavior change. By this procedure, the investigator could provide the formative data needed for modification of the ARITM if the subject gains warranted continuation of this method as a viable model for in-service training.

CHAPTER III

RESULTS

STUDY OVERVIEW

General Purposes of the Study

The general purpose of this study was to indicate the various areas of learning or improvement one might expect if one were to employ the Active Response In-service Training Method (ARITM) as a model for in-service training in trainable and day-training programs. Through this knowledge, one might best employ the ARITM to teach to areas not reached by the more traditionally employed methods for in-service training. The second consideration or reason for conducting the study was to identify, if existing, any subgroups within the population that showed a differential improvement in areas addressed by the ARITM. In this manner, one might select a population where the greater benefit would be realized. The third or last general purpose of the study was to provide formative evaluation for the further refinement of the ARITM.

Objectives and Assumptions

The objectives of the study were to be accomplished by building a profile of the types of behavior change exhibited by the subjects over the period of the in-service training year. It was

assumed that the subjects would change in their opinions concerning 1) the value of in-service training in their district, 2) their strengths as teachers of handicapped children, and 3) the advisability of employing certain methods and techniques in teaching.

It was also felt that the subjects would exhibit greater skill in applying behavior modification techniques and in verbally expressing the processes and language of instruction.

Finally, it was assumed that the subjects would indicate their intent to incorporate what they had learned into their everyday instruction by showing a change in their instructional delivery when working with children.

By providing profiles on the whole population and sub-populations and collecting additional data provided by solicited but unstructured criticism from both trainers and trainees, the first evaluation of the ARITM's use as an in-service training model in public school programs for trainable and severely retarded children would be accomplished.

Dimensions of the Study

For purposes of reporting the results of this study, the findings of each of the four dimensions of the study will be reported separately. The reader will recall those dimensions to be: 1) the Skill Dimension involving subject's change in his applying behavior modification techniques; 2) the Verbal Expression Dimension involving change in the ability to verbally express an understanding of prescriptive teaching and to use technical language; 3) the Intent

Dimension involving the intent to incorporate learned skills as measured by the extent to which the method of classroom instruction shifts from whole group instruction to individualized instruction; and 4) the Opinion Dimension involving change in subjects' opinions in regard to their general opinion about the value of in-service, their opinion about participation in the ARITM project and their opinion about their own strength as teachers and about employing certain methodologies.

Composition of Subgroups

When studying the subgroups within certain dimensions, some regrouping was necessary. When regrouping was necessary for discussion purposes, the specific regrouping will be outlined prior to a discussion of results for the respective dimension. Unless otherwise specified, for all other dimensions of the study, subgroup analyses will comprise subjects as classified by the administration of the host school systems. Day-training teachers were eliminated from subgroup consideration as their backgrounds and administrative classification rendered them too atypical to be included within another subgroup and their number, two in all, made comparison meaningless. When reporting results of the entire group (N = 37), the day training teachers were included in the results.

The following table shows the subjects and the subgroups to which they belonged as designated by school administrations.

Table 4. Distribution of All Subjects With Respect to Their Instructional Subgroup Affiliation by Position and Program.

Position	Program		Total
	Trainable	Day Training	
Teacher	12	2	14
Aide	10	13	23
TOTAL	22	15	37

RESULTS FOR EACH DIMENSION

Skill Dimension

Overall Performance

This dimension dealt with the subjects' ability to apply behavior modification techniques. Each subject's performance on their manifested ability to apply behavior modification techniques in an instructional situation was judged on a pre/post basis. Subjects whose post-treatment performance was judged as the better performance were said to have exhibited positive change (or growth) in ability to apply behavior modification techniques. Subjects whose pre-treatment performance was judged to have been better were said to have exhibited negative change or no growth. Table 5 is a summary of the subjects' change in this dimension.

An analysis of the subjects showing positive change (34) is shown in Table 6 which gives the relative subgroup affiliation for the subjects.

Table 5. Number and Respective Percentage of Subjects Showing Both Positive Change (Growth) and Negative Change (No Growth) in the Ability to Apply Behavior Modification Techniques.

Direction of Change	Number of Subjects	Percentage of Group
Positive Change (Growth)	34	92%
Negative Change (No Growth)	3	8%
TOTAL	37	100%

Table 6. Distribution of Subjects Showing Positive Change in Ability to Apply Behavior Modification Techniques According to Their Subgroup Affiliation by Program (Trainable or Day Training) and by Position (Teacher or Aide) and Giving the Representative Percentage for Each Group.

Position	Program	
	Trainable	Day Training
Teacher	10 (88%)	2 (100%)
Aide	10 (100%)	12 (92%)

Of the three subjects showing negative change, one subject was a day-training aide and two subjects were trainable teachers.

Amount of Positive Change in Skill

Having determined which subjects showed positive change in application of behavior modification techniques from pre to post, an examination of the performances of those 34 subjects followed. A comparison of the pre/post performances for each subject was made to estimate the amount of change manifested over the treatment period. The difference was rated on a five point scale from "one," little difference, to "five," vast difference. See Appendix N, Page 2, for complete explanation of point values. Table 7 summarizes the magnitude of change for these subjects.

Table 7. Distribution of Subjects Showing Positive Change in Application of Behavior Modification Techniques According to the Magnitude of Change and Subgroup Classification by Program and Position

Program	Position	Magnitude of Positive Change 1	2	3	4	5	Mean Change
Trainable	Teachers N = 10	2	2	1	4	1	3.0
	Aides N = 10	1	2	3	4		3.0
Day-Training	Teachers N = 2		1			1	3.5
	Aides N = 12		1	1	4	6	4.3
TOTAL	34	3	6	5	12	8	3.5

Each subject's score was given a value equivalent to that score as measured on the five point scale. These scores were then summed and divided by the number of subjects to yield a mean positive change score for all 34 subjects and for subjects within given subgroups. These scores are shown in the far right column in Table 7. Of those subjects showing negative change, the two trainable teachers each had a score of one and the day-training aide had a score of three. Of the 92 percent showing positive change, 84 percent showed sufficient positive change (a magnitude of two or better) to satisfy the evaluators that their judgment was based on the qualitative difference between the performances and not on guess work.

Table 7 shows the mean positive change score for the entire group to be 3.5. In comparing the teachers and aides group, there was no difference in the amount of positive change, each group having a mean score of 3.0, .5 of one point below the mean score for the entire group. In comparing the trainable and day-training groups, one finds the day-training group mean score to be 4.3 or a magnitude of 1.3 greater than the trainable group and .8 greater than the mean for the entire group.

Table 8 compares the two subgroups (teachers and aides) and shows in percentage form the number of subjects within the respective subgroups who manifested various magnitudes of positive change. Table 9 makes similar comparisons for the two other subgroups (trainable program and day-training program) of interest.

An examination of Table 8 comparing the positive change with aides shows that 70 percent of the aide subgroup obtained scores of a

Table 8. Comparison of Percentage Breakdown According to Magnitude of Positive Change Between the Two Subgroups: Teachers and Aides* (Trainable Teachers and Trainable Aides Dyads)

Subgroup	Percentage of Subjects According to Magnitude of Positive Change				
	Mag. 1	Mag. 2	Mag. 3	Mag. 4	Mag. 5
Trainable Teachers (N = 10)	17%	17%	8%	33%	8%
Trainable Aides (N = 10)	10%	20%	30%	40%	

Table 9. Comparison of Percentage Breakdown According to Magnitude of Positive Change Between the Two Subgroups: Trainable Program and Day-Training Program (Trainable Program Aides and Day-Training Program Aides).

Subgroup	Percentage of Subjects According to Magnitude of Positive Change				
	Mag. 1	Mag. 2	Mag. 3	Mag. 4	Mag. 5
Trainable Aides (N = 10)	10%	20%	30%	40%	
Day-Training Aides (N = 12)		8%	8%	31%	46%

magnitude of three or greater as compared to 49 percent of the teacher subgroup which obtained a score of three or better. All aides showed some positive change of some magnitude, but two teachers showed negative change from pre-treatment to post-treatment.

Table 9, comparing trainable program subjects with day-training subjects, shows that 85 percent of the day-training staff showed positive change in skill to a magnitude of three or greater, compared to 70 percent of the trainable subgroup subjects scoring three or greater. Furthermore, 46 percent of the day-training subjects showed positive change, the highest magnitude (5). No trainable subjects showed positive change to that extent. All trainable subjects showed positive change, but one day-training staff member showed negative change.

Positive Change in the Six Factors of the Instruction Cycle

The observers' judgments as to the direction and amount of change were over all judgments based upon the observers' cumulative judgments of the subject's performance over a number of instructional trials. As can be seen in Appendix I, each trial contained six factors or separate actions under the control of the subject. These factors were "task change," "attention," "stimulus presentation," "prompting," "feedback," and "reinforcement" and are defined in Appendix J. Each subject received training in proper execution of each of these factors. Because the overall performance evaluation was contingent upon performance in each of these factors, an evaluation

of each subject's performance on each factor was undertaken. These factors and the number of subjects who showed positive change in each factor is summarized in Table 10. The subgroups of interest and their performances in the respective factors are also summarized in Table 10.

Table 10. Number of Subjects Showing Positive Change in the Six Specific Factors Considered in the Instructional Trials According to the Instructional Behavior Observation Check List (IBOCL)

Group	Subjects Showing Positive Change in Each of the Six Component Factors *					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Whole Group (N = 34)	19	10	24	11	6	22
Trainable Teachers (N = 10)	6	3	8	3	3	7
Trainable Aides (N = 10)	5	0	5	3	1	5
Day-Training Aides (N = 12)	7	7	10	4	1	8

*Factor 1 = task change
Factor 2 = attention
Factor 3 = stimulus presentation
Factor 4 = prompting
Factor 5 = feedback
Factor 6 = reinforcement

If it can be assumed that the number of subjects that show positive change in a given factor bears some relationship to the degree to which these factors are sensitive to instruction via the ARITM or to the receptivity of a given subgroup, then the ranking of these factors may be of some value.

As indicated in Table 11, the greatest number of subjects for the whole group showed positive change in "Stimulus Presentation" or the proper and concise presentation of the task required by the student. "Reinforcement" ranked second and "Task Change," or confining instructional activity to the presentation of one concept or task within a given instructional period, ranking third. The remaining three factors had so few subjects showing positive change that it made distinguishing differences in rank order meaningless. As can be seen in Table 11, ranking across subgroups was identical for factors 1 (stimulus presentation), 2 (reinforcement) and 3 (task change).

Table 11. Rank Order of the Six Factors for Each Subgroup According to the Number of Subjects in Each Subgroup Showing Positive Change in the Various Factors.

Rank	Whole Group	Trainable Teachers	Trainable Aides	Day-Training Aides
1	Stimulus Presentation	Stimulus Presentation	Stimulus Presentation	Stimulus Presentation
2	Reinforcement	Reinforcement	Reinforcement	Reinforcement
3	Task Change	Task Change	Task Change	Task Change
4	Prompting	Prompting	Prompting	Attention
5	Attention	Attention	Feedback	Prompting
6	Feedback	Feedback	Attention	Feedback

Verbal Expression Dimension

This dimension assesses the verbal conceptual component of the study and analyzes the subjects' change in ability to conceptualize and verbally express the processes appropriate to prescriptive teaching and in ability to use technical language of instruction.

Using the same procedure as was used in judging application of behavior modification techniques, each subject was judged on his verbal ability in two areas. The first area considered the subject's ability to verbalize an understanding of the process of prescriptive teaching. The second area considered the subject's tendency to use the technical language of instruction.

Regrouping of Subjects

Two of the 37 subjects were dropped from this dimension of the study. Although both subjects completed the response form, both forms were lost in the mail. It was decided to eliminate these subjects from further consideration rather than ask for a restatement as the value of the response depended upon its completion immediately following the video taped teaching sample. The remaining subjects were distributed as follows:

Table 12. Distribution of Subjects Responding to the Verbal Expression Dimension

	Teachers	Aides	Total
Trainable	11	10	21
Day-Training	2	12	14
TOTAL	13	22	35

Changes in Understanding Prescriptive Teaching and Use of Technical Language

Of the 35 subjects responding, 21 subjects showed a positive change from pre to post. For both areas of the verbal expression dimension, these results are identical. Table 13 summarizes these results for both areas of this dimension.

Table 13. Summary of Group Performance in the Two Areas of the Verbal Expression Dimension.

	VERBAL EXPRESSION DIMENSION			
	Understanding of Prescriptive Teaching Process		Higher Use of Technical Language of Instruction	
	N	%	N	%
Positive Change	21	60%	21	60%
Negative Change	14	40%	14	40%
TOTAL	35	100%	35	100%

The distribution of subject responses by subgroup affiliation follows in Table 14. Since pre and post treatment results for verbal expression of the understanding of the prescriptive teaching process were the same as the results for change in the frequency of using technical language, Table 14 represents a summary for both areas in this dimension.

Inspection of Table 13 shows that 60 percent of the entire group manifested positive change as compared with 40 percent showing negative change. This would appear to be little better than chance occurrence and might indicate that the procedures employed during treatment had little or no effect upon the subject's verbal conceptual

ability. This analysis, when applied to Table 14, also indicates that the effect was similarly non-conclusive when looking at the differential effectiveness for the teacher and aide groups. However, when comparing the gains across programs, some differences become apparent. In comparing the results of the Trainable aide group with the Day-training aide group, one sees that the trainable group was split; one half showing positive change and one half showing negative change. Seventy five percent of the Day-training group showed positive change. It would, therefore, appear that although overall, the ARITM did not have a great effect on the Vergal Expression Dimension for all subjects on a whole group basis, the day-training aides did show some improvement as a subgroup.

Table 14. Distribution of Subjects in Verbal Expression Dimension According to Direction of Change and Subgroup Affiliation by Program and Position.

	DIRECTION OF CHANGE			
	Positive		Negative	
	Teachers	Aides	Teachers	Aides
Trainable Program	5	5	6	5
Day-Training Program	2	9	0	3

Intent Dimension

The Intent Dimension of this study dealt with the subject's intent to use the new skills and techniques after the study had terminated. Because no follow-up study could be undertaken as part of this investigator's study, a measurement of intent to incorporate was undertaken during the treatment period. The index of "intent" was the change in the pre to post-treatment nature of the instructional interaction between subject and student. The ARITM assumes "individualized instruction" to be the desirable mode of student instruction. It was thus assumed that an "intent to incorporate" might be measured by an increase in the amount of individualized instruction that took place in the subject's daily instructional routine. Since individualized instruction is not only considered desirable from a methodological standpoint, but also considered to be a palatable procedure by most teachers, it was further assumed that once acquiring these skills, the subjects would tend to continue using them beyond the period of this study.

A five point scale of instructional interaction ranging from individualized instruction to large group instruction with no attempt to individualize content or techniques was used to measure and code the interactions. The unit of analysis was the type of interaction that was employed by the subject to teach a concept, skill or lesson to his students during identified and discrete periods within the typical classroom day. The index of change was the change in frequency of use of the various types of interaction during the day. A more detailed explanation may be found in Chapter II.

Regrouping of Subjects

The trainable teacher/aide dyads composed the group studied for this dimension of the study. There were two factors about the day-training group that necessitated their exclusion from the formal group to be studied. The severe motor and communications dysfunctions in the day-training student population dictates that any instruction, regardless of quality, place emphasis on individualization to a greater extent than might be the case in a trainable program. Secondly, the program structure in day-training situations made impossible, for purposes of this study, the isolation of discrete instructional units, teams of interacting pairs and isolation of classroom units.

Nine trainable teacher/aide dyads were used because they met all qualifications: 1) each dyad worked as a team, 2) each team was isolated because they were classroom based, 3) instructional days were roughly equivalent in time, 4) discrete subject matter oriented instructional segments could be isolated and 5) student dysfunctions were mild enough to allow the possibility for a greater range of instructional interaction types.

Since type of interaction was the unit of analysis and not subject, there was some concern that a few subjects might contribute an inequitable amount to any change in overall group shifts in instructional style. The data in Appendix O are reported to speak to some of these concerns. Appendix O gives information concerning various factors of interest in equating the characteristics of each subject dyad before treatment. Appendix P gives similar information after treatment.

Shifts in Instructional Interaction Types

The analysis of the shift in usage of various instructional types from pre to post for the group of eight teacher/aide dyads (subjects) was undertaken by totaling all recorded interaction units of specific type. In this manner, the actual number of units per type and their respective percentage of the total number of interaction units for all types was identified. By comparing these data on a pre/post basis, any shift in the frequency of use for the various types of instructional interaction was identified. Table 15 shows the pre and post comparisons of instructional interaction type usage for the group of subjects used in this dimension of the study.

Table 15. Pre and Post Treatment Comparisons of the Trainable Program Dyads' Use of the Various Instructional Interaction Types.

Instructional Interaction Type	INSTRUCTIONAL INTERACTION UNITS*				
	Pre-Treatment		Post-Treatment		Change Measured in Percent Difference From Pre to Post
	# of Units	% of All Units	# of Units	% of All Units	
Individual	2	3%	6	8%	+ 5%
Small Group Individual	5	7%	11	14%	+ 7%
Whole Class Individual	6	8%	11	14%	+ 6%
Small Group Same Activity	14	19%	13	16%	- 3%
Whole Class Same Activity	46	63%	38	48%	-15%

*73 instructional interaction units were recorded during the pre-treatment period and 79 units were recorded during the post-treatment period.

Table 15 shows that the two least desirable interaction types (types 4 and 5) decreased in frequency of use while the more desirable types (types 1, 2 and 3) increased. Although the modal interaction remained "whole group same activity," decline in this category was substantial and coupled with the decline of 3 percent in Type 5, accounted for an overall 18 percent increase in the frequency of use of the three more desirable types of instructional interaction.

It would appear that the change in frequency of all types in the desired direction would lend some credibility to beyond chance occurrence.

Since the Day-training subgroup was excluded from the above analysis for prior stated reasons and teacher/aide dyads were used, it is impossible to compare these two subgroups to note any differential effectiveness. It might, however, be of some value to the reader to see the pre and post-treatment profiles of instructional interaction for the Day-training group. As mentioned previously, the staff (subjects) grouping in these programs was informal. Although given teams of dyads and triads remained relatively consistent throughout the treatment period, regrouping of teams during the year was not uncommon. Because this condition existed, information similar to that found in Appendices O and P will not be given; only summary information for the group similar to that found in Table 16 will be related. One subject in the Day-training subgroup was eliminated as schedule and time demands did not permit post-treatment data collection. The total number of subjects considered in this subgroup is fourteen (14).

Table 16. Pre and Post-Treatment Comparisons of the Day-Training Program Staffs' Use of Various Instructional Interaction Types.

Instructional Interaction Type	INSTRUCTIONAL INTERACTION UNITS*				
	Pre-Treatment		Post-Treatment		Change Measured in Percent Difference From Pre to Post
	# of Units	% of All Units	# of Units	% of All Units	
Individual	12	16%	21	28%	+12%
Small Group Individual	6	8%	13	17%	+ 9%
Whole Class Individual	8	10%	10	13%	+ 3%
Small Group Same Activity	11	14%	11	15%	+ 1%
Whole Class Same Activity	40	52%	20	27%	-25%

*77 instructional interaction units were recorded during the pre-treatment period and 75 instructional interaction units were recorded during the post-treatment period.

As shown in Table 16, the two largest areas of change were a decline of 25 percent in the least desirable type (whole class same activity) and an increase of 12 percent in totally individualized instruction. Although no comparisons between the Day-training subgroup and the trainable subgroup can be drawn, comparison of Tables 15 and 16 suggests that both subgroups moved in the desirable direction.

If the assumptions about the measurement index being a valid index of intent to incorporate the newly learned skills into routine classroom procedures are sound, then it might also be assumed that these skills will be carried on beyond the project period.

Opinion Dimension

The opinion dimension explores subject responses to 16 preselected items contained in a 40 item opinion survey. Pre and post-treatment responses were compared for information on change of opinion over the treatment period. Subgroup comparisons were made to determine any differential changes over this period.

Subject Grouping

The clustering of subgroup subjects was similar to those undertaken for other evaluative dimensions in this study. The whole group comprised all 37 subjects. The Teacher subgroup (N = 9) contained only those trainable teachers working one-to-one in a teacher/aide dyad. The Aide subgroup included those trainable program subjects working as aides in the teacher/aide dyad (N = 9). The Trainable subgroup was composed of all trainable aides (N = 10). The Day-training subgroup comprised aides working in day-training programs (N = 13). Five subjects included in the "Whole group" but not accounted for in the various subgroups for prior stated reasons consisted of two day-training teachers and three trainable teachers.

Statement Analysis and Response Format

No statistical analysis for significance of any change was undertaken; therefore, no definite statements of change can be made. The intent is to report the results of the survey and to highlight any suspected tendency toward change over the treatment period. As mentioned in the description of this dimension in Chapter II, the

statements were constructed to require response on a five point scale ranging from strongly agree with a score value of "one" to strongly disagree with a score value of "five." For all subsections of Statement Number 29 which asked for subject's perceived strength in certain skills or knowledge, the words "very strong" and "very weak" were substituted as opposites on the scale. Each statement had a maximum desirable score value assigned to it. Movement toward this maximum desirable value indicated a tendency to change from pre to post. All scores represent mean scores for various subgroups. Pre and post-treatment mean scores are given. Mean scores were calculated by multiplying the scale value for responses by the number of responses of that value. For each group, these weighted responses were summed and divided by the number of subjects within the given subgroup. A pre/post mean score difference of .5 or greater was accepted as an indication of a true tendency to change opinion. Although this assumption might seem rather arbitrary, it was reasoned that any mean shift equal to or greater than half an interval on a five point scale should be sufficient to justify a statement on "tendency" toward opinion change.

Analysis of Responses to Specific Statements

In Table 17, the maximum desirable score values are given for statements used. The left column gives the statement number and the right column identifies the maximum desirable score value toward which the mean scores should move.

Table 17. Opinion Survey Statement Numbers Used and the Maximum Desirable Score Values Assigned to Each.

Statement Number	Maximum Desirable Score Value
4	1
5	5
8	5
15	1
16	1
18	1
29-A	1
29-B	1
29-C	1
29-D	1
29-E	1
29-F	1
29-G	1
29-H	1
29-I	1
40	1

A summary of the mean scores for each of the statments is given in Table 18. The rows isolate the statement numbers. The columns give for each subgroup the pre and post treatment mean scores, and an indication of tendency to change from pre to post. A plus (+) indicates tendency to change in a desirable direction; a minus (-) in a non-desirable direction. These indications were given only when a difference between pre/post means was equal to or greater than .5

Table 18. Summary of Mean Pre and Post Scores and Indication of Opinion Change on Selected Opinion Statements for the Whole Group and Subgroups and Those Subjects Not Included in any Subgroup*

Desirable Direction Toward	Statement Number	(N=37) Whole Grp			(N=9) Teachers			(N=9) Aides			(N=10) Trainable			(N-13) Day-training			(N=5) Not Counted		
		Pre	Post	Chng	Pre	Post	Chng	Pre	Post	Chng	Pre	Post	Chng	Pre	Post	Chng	Pre	Post	Chng
1	4	3.4	3.4		4.0	3.7		3.4	3.2		3.5	3.3		3.5	3.8		3.6	4.0	
5	5	3.4	3.4		3.3	3.7		3.1	3.2		3.2	3.3		3.4	3.2		3.8	3.8	
5	8	2.3	2.4		2.7	2.9		2.4	2.6		2.4	2.5		2.3	2.8	+	2.2	2.0	
1	15	2.5	2.4		2.4	2.2		2.9	3.2		2.9	3.3		2.5	2.4		1.4	1.2	
1	16	1.9	2.0		2.0	2.1		2.0	1.8		1.9	1.7		2.0	2.4		1.6	1.6	
1	18	1.9	1.7		1.6	1.7		2.2	1.6	+	2.1	1.6	+	2.2	1.9		1.6	1.4	
1	29-A	2.4	2.1		2.2	2.1		3.0	2.4	+	3.0	2.4	+	2.4	2.2		1.6	1.4	
1	29-B	3.0	2.6		2.7	2.4		3.6	3.0	+	3.5	3.0	+	3.0	2.5	+	2.8	2.2	+
1	29-C	2.8	2.6		2.8	2.4		3.5	2.8	+	3.2	2.5	+	1.8	2.4	-	1.4	2.4	-
1	29-D	3.4	3.1		3.6	3.2		3.8	3.4		3.8	3.4		3.2	2.8		2.6	2.8	
1	29-E	3.0	2.4	+	2.8	2.1	+	3.2	2.6	+	3.2	2.5	+	3.2	2.6	+	2.4	2.0	
1	29-F	2.0	2.0		2.0	1.8		2.4	2.2		2.4	2.2		1.9	2.2		1.4	1.2	
1	29-G	2.4	2.4		2.2	2.2		2.9	2.4	+	2.9	2.4	+	2.5	2.7		1.4	2.2	-
1	29-H	2.7	2.4		2.6	2.3		3.0	2.4	+	2.9	2.4	+	2.7	2.2	+	2.4	2.6	
1	29-I	2.7	2.1	+	2.4	2.3	+	3.3	2.2		3.2	2.2	+	2.8	2.3	+	2.0	1.2	+
1	40	1.8	2.4	-	1.6	2.7	-	2.0	2.6	-	2.0	2.6	-	1.8	2.3	-	1.8	1.6	

*a "plus" (+) indicates a tendency to change ($\geq$ .5) in a desirable direction.

a "minus" (-) indicates a tendency to change ($\leq$ .5) in a non-desirable direction.

Further description of the results will proceed in linear fashion through each of the selected statements. Although no formal consideration of the information and data collected through open ended statements, other non-selected statements or interviews with subjects are undertaken in this dimension, certain aspects of such were used to provide a context whereby subject responses might be more clearly understood.

Statement Number 4: "I am satisfied with the in-service training program that now exists in my school system."

The mean score for the pre-treatment responses for the whole group indicated disagreement with the statement, or a feeling of dissatisfaction with the current status of the in-service training support in their districts. The mean score of 3.4 places the group somewhere between a feeling of uncertainty and disagreement. This opinion remained unchanged from pre to post-treatment for the whole group. Of the subgroups, the teachers voiced the most definite disagreement (4.0). The Trainable and Aide and Teacher subgroup scores tended to move in the direction of agreement over the treatment period. Only the Day-Training subgroup mean score moved in a direction toward more definite disagreement. However, it would be more appropriately concluded that no change in opinion occurred as no subgroup mean scores changed more than three tenths of one point in either direction. It would appear, therefore, that the ARITM had no effect on opinion pertaining to overall district in-service either because it was not identified as in-service or because it was met with the same degree of satisfaction as former programs.

Statement Number 5: "I find that little of the information I obtain at in-service experiences I apply directly in the classroom."

There again was no change of opinion from pre to post-treatment mean response on a whole group basis. The mean response (3.4) for the whole group lay between disagreement and strong disagreement, thus indicating that some, if not a lot, of the information gained during in-service training is applicable. Subgroup movement tended toward stronger disagreement with the statement. The Day-training subgroup mean score moved two tenths of one point toward agreement, but all movement from pre to post was negligible. As in Statement Number 4, it might be concluded that the ARITM had no effect.

The lack of manifest opinion change might be a reflection on the sensitivity of the instrument used when one considers the low numbers of subjects and the limited allowable response intervals for such comprehensive statements involving general satisfaction and applicability of content. The lack of identity explanation might also be plausible as many of the subjects who had prior to treatment answered Statement Number 3 saying they had never had in-service training gave similar responses on the post survey. This lack of association of the ARITM with the phrase "in-service training" might be understandable because on only rare occasions were the words "in-service training" ever used by subjects or trainers. More frequently heard expressions were "the project," "the MSU program," "the experiment," etc.

Statement Number 8: "A very important component of an in-service training model should be providing release time from the classroom to participate in the program."

On a "whole group" basis, the mean score remained unchanged from pre to post (2.3 to 2.4) which showed opinion being somewhere between agreement and uncertainty. The Day-training subgroup had a pre-treatment mean score showing stronger agreement than any other subgroup, and showed more movement toward disagreement than any other subgroup (2.3/2.8). This represents a movement equal to 1/2 the interval and real tendency to change in opinion. Overall, the subjects held to their opinion that release time was desirable. This appears to be corroborated because one of the chief negative criticisms by the subjects was that there was seldom time alone with the trainer to discuss general programs or the conceptual or theoretical aspects of treatments that were prescribed. It would, therefore, appear that the 100 percent involvement with children and the concomitant rewards of feedback for immediate application do not to any great extent eliminate the need for release time. Possibly different but very powerful rewards of a different nature maintain this opinion. Of course, the impact of the ARITM in changing this opinion would greatly depend upon the subject's identification of the ARITM as an in-service model.

Statement Number 15: "Prescriptive Teaching is an important technique in the education of retarded children."

There was modest agreement with this statement on a whole group basis (2.5) and opinion did not appear to change over the treatment period as the post mean score was 2.5. The Trainable and Day-training subgroup scores showed most movement and the direction was toward disagreement actually crossing the interval boundary and

approaching disagreement. The investigator finds it interesting yet unexplainable that the Teacher subgroup moved toward agreement while the Aide subgroup that worked in team dyads with the teachers moved in the opposite direction. However, the less than .5 change from pre to post makes it very difficult to state that there was any change at all.

Statement Number 16: "Behavior modification has much to contribute to the education of the whole child."

The whole group showed agreement with this statement and indicated little change over the treatment period. The mean pre/post treatment scores show that the Day-training subgroup shifted toward stronger disagreement; however, only by four tenths. It therefore appears that the agreement remained unchanged over the treatment period.

Statement Number 18: "Behavioral objectives are important tools for educators of the retarded child."

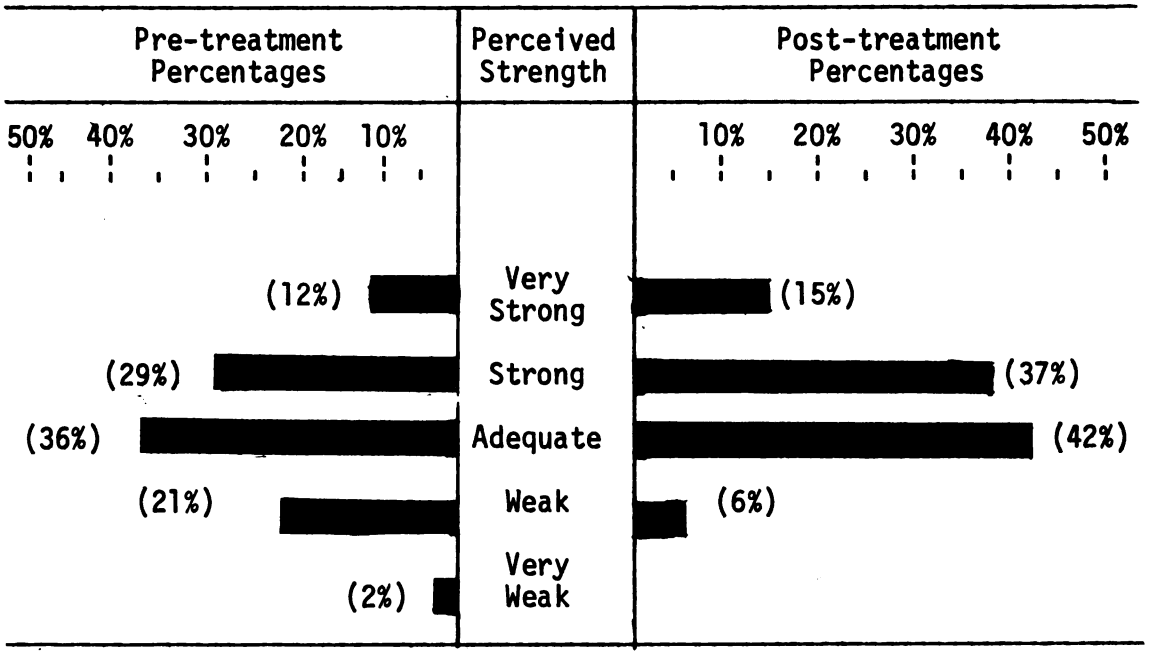
Both pre and post-treatment mean scores showed rather strong agreement with Statement Number 18 on a whole group basis and indicated no change in opinion. The subgroup showing more movement from pre to post mean scores was the Aide (2.2 to 1.6) subgroup. If this difference can be interpreted to mean real change in opinion, it might be attributed to the high use of behavioral objectives in a teaching situation with a group of subjects who are largely untrained as educators and who, in the past, were more oriented to care than to instruction. It will be noticed in Table 18 that the Trainable subgroup moved from 2.1 to 1.6, but it should be recalled that 9 of 10 subjects in this subgroup are also included in the Aide subgroup.

Statement Number 29:

On a whole group basis, the subject's mean response from pre to post showed either no change (Statements 29F and G) or change in a desirable direction (Statements 29A, B, C, D, E, H, I). Statements 29E, dealing with assessment and 29I, knowledge of handicaps, showed the greatest mean score changes of .6 of an interval. It will, therefore, be assumed that all subjects perceived themselves to be stronger in these areas. The Aides subgroup showed mean score changes of .5 of an interval or better in more categories than other subgroups; those categories were: 29A conferencing with parents, 29E assessment of child's functional level, 29G skill in teaching children, 29H evaluation of student progress and 29I knowledge of handicapping conditions. The Day-training subgroup showed the next highest number of categories in which they perceived themselves as gaining in strength. Those categories were: 29B program planning, 29C conferencing with parents, 29E assessment of child's functional level, 29H evaluation of student progress and 29I knowledge of handicapping conditions. The Teacher subgroup showed the least number of categories showing change of .5 of an interval or more; however, the teacher subgroup tended to rate themselves higher in these categories than did other subgroups on pre-treatment statements. The only category the Teacher subgroup perceived themselves as being somewhat weak in was research in the field. The one category in which all subgroup's pre to post-treatment mean scores moved more than .5 of an interval was in assessment of meaningful child behavior.

By collapsing all categories and treating them as one collective index of perceived strength, a change in opinion of overall perception of strength as an instructor from pre to post-treatment was obtained. Table 19 gives these data in percentages of subjects indicating degree of perceived strength over all categories and compares these percentages before and after treatment.

Table 19. Pre and Post-treatment Comparisons of Percentages of Subjects Showing Varying Degrees of Perceived Strength as Instructors of the Mentally Retarded.



As can be seen in Table 19, there was a shift in opinion in perceived strength increasing the number of subjects who felt adequate or stronger as instructors and decreasing the number who felt weak as instructors. It might, therefore, be concluded that over the treatment period, the subjects gained a more positive perception of themselves as competent instructors.

Statement Number 40: "I feel positive about participation in this year's in-service."

On a whole group basis, the pre-treatment mean score showed agreement with the statement (1.8). All subgroup pre-treatment mean scores showed agreement. The Teacher subgroup showed the highest degree of agreement (1.6) with Day-training next (1.8). Although still showing agreement with the statement, the post-treatment mean scores for the whole group and all subgroups tended to move toward disagreement showing mean scores moved .5 of an interval or more. If this movement can be construed to mean real change in opinion, then the subjects felt less positive about their participation after treatment than they did before.

SUMMARY of RESULTS

Overview

This study represents an evaluation of the Active Response In-service Training Method as employed as a model for providing in-service training for teachers and aides working in trainable and day-training programs in selected public schools. The evaluation analyzed four dimensions of possible subject change. Those dimensions were the "Skill Dimension," the "Verbal Expression Dimension," the "Intent Dimension," and the "Opinion Dimension." There were two main objectives of the study: 1) to profile subject behavior change over the project period in each of the four dimensions for the purpose of assessing the ARITM's potential for influencing positive change in these dimensions, and 2) to identify which, if any, subgroups within

the population responded to the ARITM project to a greater extent than did other subgroups. The purposes of this evaluation were: 1) to assess the value of employing the ARITM in the future with similar populations, 2) to assess the effectiveness of the ARITM with different subgroups and in teaching different skills, and 3) to provide formative data for further refinement of the method.

Summary of Results in Skill Dimension

Thirty four (34) or 92 percent of the subjects showed positive change in the judged ability in overall application of behavior modification techniques. Eighty eight percent (10) of the Teacher subgroup showed positive change, 92 percent (12) of the Day-training subgroup and 100 percent (10) of the Trainable aide subgroup showed positive change.

Based on a scale of one to five from little change to vast change, the mean positive change score for all subjects was 3.5. Teacher and Aide subgroups each showed a mean positive change score of 3.0. The Day-training subgroup showed most positive change with a mean subgroup score of 4.3.

There were six (6) factors of the behavior modification instructional cycle which together gave the observers the information necessary to judge overall skill in application. These were: 1) Task Change, 2) Attention, 3) Stimulus Presentation, 4) Prompting, 5) Feedback and 6) Reinforcement. Analysis of pre/post subject performance in each of these areas showed no differences among subgroups. Ranking those factors according to the number of subjects

showing positive change in each, more subjects showed positive change in Stimulus Presentation than in any other factor. In order of decending number of subjects showing positive change, the remaining factors were: Reinforcement, Task Change, Prompting, Attention and Feedback.

Summary of Results in Verbal Expression Dimension

This dimension assessed the change in subject verbal expression from pre to post-treatment by comparing pre and post samples of subject's written response to four questions. Through content analysis of the response, the subjects were judged to have exhibited positive change in: 1) their ability to verbally express an understanding of the prescriptive teaching process and 2) in the use of technical language of instruction.

Of the 35 subjects responding, 21 (60 percent) of the subjects showed a better ability to verbalize understanding of prescriptive teaching. The same number of subjects showed a greater use of technical language. Although overall little better than half (60 percent) showed positive change, analysis of this change by subgroup showed the Day-training subgroup as showing more change than other subgroups. Positive change according to subgroups shows: 45 percent (5) of the teachers, 50 percent (5) of the aide subgroup and 75 percent (9) of the trainable aides subgroup showed positive change in both areas of verval expression.

Summary of Results in The Intent Dimension

To measure intent to incorporate the skills gained during the period of in-service training, the investigator measured the extent to which the subjects moved to a more individualized method of student instruction. Movement from whole group instruction to an individualized method was measured by tabulating the number of discrete instructional interaction units during a typical day and classifying each unit according to the type of interaction. There were five classification types ranging from whole group instruction to totally individualized instruction. Seventy three instructional interactions were classified during the pre-treatment assessment, and 79 units during the post-treatment. Although the modal instructional interaction type remained whole group instruction, there was a shift toward individualization. The three more desirable methods increased by 18 percent with a 5 percent increase in total individualization. Of the five possible classifications, two were considered undesirable. These two decreased in the number of interactions classified as such by 18 percent. Fifteen percent of this decrease was in the least desirable classification. If the investigator's assumption about individualization being a measure of intent to incorporate the skills into the subject's instructional style, then there seems to be some indication that incorporation will occur. If the assumption is invalid, then at least the analysis showed a tendency to use more individualized methods of instruction after treatment than before.

Although no attempt was made to compare subgroups in this dimension, an analysis of the Day-training subgroup showed a decrease of 24 percent in the lesser desirable classifications with the consequential increase of 24 percent in the more desirable classifications.

Summary of the Opinion Dimension

Of the forty (40) items contained in the opinion survey, sixteen (16) were pre-selected for analysis as they were felt to be most germane to the main objectives of the study. Changes in group mean scores from pre to post were used as an index of opinion change. A five point scale from strongly agree to strongly disagree was used to measure subject opinion change. A movement of .5 of an interval or more was considered to be a real tendency to change opinion over the project period.

Considering all subjects, the opinion about satisfaction with in-service within their district remained unchanged and slightly negative. Desire for release time for in-service participation remained mildly important with some decrease in the importance of release time being expressed by the Day-training aides. The subjects expressed the opinion that they grew in their ability to assess a child's level of functioning. All subjects expressed an increase in perceived strength as instructors of the retarded. All subjects although feeling positive about their years experience with the ARITM were less positive after treatment than before.

In considering the various subgroups for comparison, the Trainable subgroup and the Day-training subgroup changed in a desirable direction on more items than the Teacher subgroup. The most noticeable area of change was the group of nine items contained in Statement Number 29. The Trainable subgroup expressed an opinion of positive change in seven ability areas: 1) observation of behavior, 2) program planning, 3) conferencing with parents, 4) assessing functional level in children, 5) teaching children, 6) evaluating student progress, and 7) knowledge of handicapping conditions with subjects worked with. The Day-training subgroup expressed an opinion of positive change in five ability areas: 1) observation of behavior, 2) program planning, 3) assessment of functional levels, 4) skill in teaching and 5) evaluation of student progress.

Results Over All Dimensions

It can be seen from the above that subjects showed positive change in all four dimensions over the project period as measured by pre and post-treatment scores. The most manifest change occurred in the subjects' ability to apply behavior modification techniques. To a lesser extent, but nevertheless evident, the subjects demonstrated more ability in verbal expression, and a tendency to incorporate what they had learned during the project period. Although feeling less positive about their project experience after the project period than before, the subjects expressed more positive opinions about themselves as instructors.

Considering all measured dimensions, aides showed more positive change than did teachers. Comparison of Trainable subjects with Day-training subjects showed Day-training subjects changed more in the skill dimension and in the verbal expression dimension. No comparison was made in the intent dimension.

Day-training subjects did not express as great a degree of self assuredness as did the Trainable subjects in their opinions about their own strength.

CHAPTER IV

SUMMARY AND CONCLUSIONS

SUMMARY of the PROJECT

This study was an evaluation of one facit of a model for integrating the two traditionally separate functions of graduate special education teacher training and the in-service training of teachers and aides in public school trainable and day training programs.

Development of the Model

The model had its origins in state institutions for the mentally impaired in Michigan. Burke and Rowland (1970) developed a technique for on-ward in-service training of institutional attendant staff. The object of the training was to upgrade language development teaching skills through appropriate use of behavior modification techniques. At that time, the model was strictly one for in-service training; only informal involvement of special education graduate students existed. No formal assessment of the model was undertaken at that time, but a paper, "An In-service Technique to Teach Ward Attendants How To Give Language Development Training To Institutionalized Retardates" was presented in 1971 by Burke and Rowland. The paper outlined the three basic assumptions of the developing model. They were that learning is best facilitated by: 1) the active

involvement of the learner, 2) knowledge of results and reinforcement for success, and 3) opportunities to practice immediately those skills that were to be learned.

McBride (1972) conducted an evaluation of the Burke/Rowland method comparing the differential gains of attendatns receiving "on the ward training" with the traditional lecture method. McBride supported his main hypothesis of equal or greater effect, but gains in application of learned skill in behavior modification were not significant for either group. Although increase in skill was substantiated, application of those skills was minimal. McBride concluded several items of interest to this investigator. The lack of gains could have been due to: 1) the reward system within institutions reinforces caretaking rather than teaching behavior, 2) the attendant perceives his role to be custodial and not instructional, and 3) conflicting demands on the attendant's time mitigate instructional opportunities.

Because of McBride's conclusions, it was decided to evaluate the Burke/Rowland method (ARITM) in an atmosphere where the staff role expectation and the reward structure encouraged instruction rather than care.

It was through recent social, legal and financial occurrences that the ARITM was employed in public schools and was further developed as the basis of an integrated model for graduate and in-service training. These were: 1) the trend toward community placement of the institutionalized retardate, 2) the shifting of the educational responsibility for this population to the Michigan Department of Education (MDE), 3) the availability of social security funds, 4) the mandatory

special education of severely retarded youth, and 5) the recognized lack of and need for teacher training for this population, and the general disenchantment with traditional in-service training methods as agents for influencing change in the actual instructional behavior of staff.

J-H-L Project Organization

With MDE sponsorship, the Michigan State University (MSU) and three intermediate school districts undertook the Jackson-Hillsdale-Lenawee In-service Training Project (J-H-L Project) in 1973. The J-H-L Project conducted in Jackson, Hillsdale and Lenawee Intermediate School Districts involved the provision of in-service training to staff members employed as instructors (teachers and aides) in programs for moderately impaired to severely multiply impaired children. Each of these districts had slightly different program configurations, but all served similar children. The student population totaled approximately 222. The staff members, 37 in all, were located in various trainable and day-training programs in the three districts. The staff members' (subjects') participation in the project was a consequence of their employment in these focal programs. All subjects participating in the J-H-L Project were trained in their normal work setting and within the context of their daily routine and staffing pattern.

The In-service Trainers (I.T.s) were six graduate students enrolled in a special master's degree program in special education at Michigan State University. The program, under the direction of an MSU

faculty member, consisted of a block of integrated coursework, seminars and field training. The field training occurred over one academic year and comprised the in-service training that was provided the subjects participating in the J-H-L Project.

The in-service training consisted of training in assessment-based teaching. The actual content of the instruction was determined by the nature of the instructional problems each subject identified in his or her individual classroom on a daily basis. The I.T. may have instructed the subjects in a variety of areas including the teaching of language, arithmetic, self care skills or motor skills. Each subject was instructed as an individual with individual training needs, but all instruction was undertaken by the I.T. according to the Active Response In-service Training Method (ARITM).

Active Response In-service Training

The ARITM held the three basic assumptions of the early Burke/Rowland work. As described in Chapter II, the ARITM can be summarized as follows:

1. The method provides in-service training to subjects while in their own classroom, while the subjects are actively involved with the problems of teaching their students.

2. The method models and actively promotes student instruction based on accurate assessment of the developmental level and instructional needs of each student. This approach is characterized by: a) definition and behavioral statement of the problem; b) assessment of the functional level of the student; c) writing of an individualized plan of instruction; d) subdivision of the instructional procedures into objectives which best facilitate the student's learning; e) evaluation of the student's progress toward meeting those objectives; and f) program modification based on evaluation feedback.

This procedure was used on two levels. All student instruction adhered to this process and all in-service training of the subjects employed the same process.

3. All subjects are given the opportunity to practice techniques and procedures immediately after the demonstration and under the guidance of the I.T.

4. Behavior modification techniques are employed on two levels. On the first level, when instructing any student both the I.T. and the subject shaped student behavior through a process of stimulus presentation, prompting, and reinforcement. On the second level, the I.T. shaped the subject's behavior by using the same techniques.

5. The content or subject matter of the training sessions was totally determined by an assessment of need manifested in the subject's classroom.

The ARITM was implemented over a nine month period. During the first three months, each I.T. spent one half (1/2) day per week training subjects. During the last six months, each I.T. increased training time to two and one half (2-1/2) days per week. Each I.T. portioned this training time equitably over all subjects to which he or she was assigned.

Evaluation Procedures

This study evaluated the effectiveness of the ARITM as applied to the J-H-L Project subjects. This study was a clinical analysis and descriptive report of the pre and post-treatment behaviors of the subjects. This investigator had two objectives. The first was to provide a profile of subject change in certain behaviors identified as being focal behaviors for most in-service training, thereby assessing the relative strength of the ARITM as a viable in-service training model for promoting change in the instructional behavior of staff.

The second objective was to identify subgroups which appeared to be more receptive to the Active Response In-service Training Method of changing these focal behaviors.

The subgroups of interest were trainable teachers, trainable aides and day-training aides. The behaviors of interest were, in general terms, the ability to apply newly learned skills, the ability to verbally express the learning that occurred, the intent to incorporate what was learned, and the opinions of the subjects regarding their own strengths as teachers and their feeling about the in-service provided. These behaviors were discussed as dimensions of the study; the "skill dimension," the "verbal expression dimension," the "intent dimension," and the "opinion dimension."

The skill dimension was assessed by video taping a five minute sample of each subject's teaching and analyzing it for pre and post-treatment changes in the ability to apply appropriate behavior modification techniques.

The verbal expression dimension utilized content analysis of the subject's description of his teaching sample to ascertain any pre/post-treatment changes in the subject's ability to express the prescriptive teaching process and in his use of technical language.

The intent dimension measured change in subject's instructional behavior from whole group instruction to individualized instruction as an index of the subject's intention to practice his newly acquired skills in his classroom.

The opinion dimension employed an opinion survey to assess subject's opinion of the adequacy of in-service training in his

district and the subject's feeling of adequacy as an instructor of handicapped children.

Although not reported as a formal aspect of the evaluation, in-service trainer and subject comments and criticisms were noted to provide some useful contextual information for understanding the changes that occurred during the period of this study.

DISCUSSION of RESULTS

Since this investigator did not apply any statistical treatment to these data, no statistical meaning of significance should be attached to reports of change or tendency to change.

At the outset, the investigator expected to see change in all four dimensions of this study. Furthermore, the investigator had some inclination of the direction of the change to be expected. Although not stated as formal hypotheses to be tested, it was expected that the subjects would:

1. Improve in their ability to apply behavior modification techniques.
2. Improve in their verbal expression of what the prescriptive teaching process is in education.
3. Increase their use of technical language after treatment.
4. Manifest some intent, no matter how highly inferential, to incorporate the newly acquired skills into their classroom procedures.
5. Perceive themselves to be better instructors after treatment.
6. Feel more positive about in-service training in their district and about their involvement with the ARITM after treatment.

To varying degrees, five of the six expectations were fulfilled.

It was also expected that certain subgroups would appear to benefit more by this in-service training method than would other subgroups. The expectation was that the aides would show more improvement than would the teachers. There was indication that this expectation was fulfilled.

In reference to the above statements, a discussion of the results in each dimension of the study follows. Because the total number of subjects being evaluated may differ from one dimension to another, the subject totals for the whole group and subgroups will be identified prior to any discussion of a given dimension.

Skill Dimension

Overall Change

All 37 subjects participated in this dimension. Although the subjects interacted during the treatment period as part of their normal routine, each subject was treated as being independent in this dimension.

Thirty four (34) or 92 percent of the subjects showed a positive change (growth) in their overall ability to apply behavior modification techniques. These data and knowledge that no other in-service training programs were offered during the ARITM project period substantiates the ARITM's effectiveness in improving the subjects actual ability to apply behavior modification techniques.

In comparing change for various subgroups, one finds that 10 of the 12 (88 percent) of the teacher subgroup showed positive change. Twelve of the 13 day-training aide subjects (92 percent) and

all trainable aide subjects (100 percent) showed positive change in their application of behavior modification skills. Although the size of these subgroups is small, it might be argued that the trainable aides benefitted more than the other subgroups. This argument is, however, weak as a difference of one to two subjects accounted for the above differential results. Secondly, if the trainable aides did benefit more than the other subgroups, it may be the result of their daily interaction with their teacher counter parts on the team.

Amount of Change

An analysis of the amount of change adjudged for each subject might prove more meaningful in assigning any differential benefit. Amount of change for each subject was judged on a five point scale from very little change to vast change. The mean change for all subjects was 3.5. The Teacher subgroup and the Trainable Aide subgroups each had mean change scores of 3.0 (.5 below the whole group mean). The Day-training subgroup on the other hand showed a mean change score of 4.3 (.8 above the mean for the whole group). Based on the amount of positive change over the ARITM period, it might be said that the day-training aides derived most benefit from the ARITM in developing their skill in behavior modification.

It could be argued that the teachers and the trainable aides were already so good that there was less room for positive change. However, Table 8, showing the comparison of percentage breakdown of the trainable teachers and trainable aides according to magnitude of

of change, shows that 50 percent of the teachers and 40 percent of the trainable aides did show enough positive change to achieve a score of 4.0 or better. It, therefore, appears that a ceiling effect was not the factor.

Change in Specific Subfactors of the Behavior Modification Cycle

To judge overall application of behavior modification, the behavior modification cycle was divided into six factors. These factors were "task change," "attention," "stimulus presentation," "prompting," "feedback," and "reinforcement." The number of subjects showing positive change in these factors was calculated to try to assess what factors might contribute more than others to the overall judgment of change. More subjects showed positive change in "stimulus presentation" than any other factor. Next was "reinforcement." Usually when one thinks of behavior modification, reinforcement and shaping behaviors come to mind. However, stimulus presentation was ranked first (here defined as the clarity and simplicity with which a person presented to the student the task or concept that the student was to learn). It would appear then that overall judgment of positive change was more dependent upon how well the teacher presented a task and not how well the teacher guides the student through the learning process.

This rather unexpected result might speak to the ARITM's effectiveness in teaching the subjects to analyze and put into simple behavioral terms the task they intend to teach. Considering the importance the ARITM places on accurate assessment and prescription, this does not appear to be a surprising result.

Verbal Expression Dimension

This dimension attempted to assess, as two independent factors: 1) the expression of understanding of the prescriptive teaching process, and 2) the frequency of use of technical language. Subject scores were identical for both factors. One explanation for these identical scores might be that the evaluator developed a response set in judging that eliminated the reporting of any differences if they existed. The other explanation might be that the two factors are measures of similar or the same thing. This investigator suspects that both explanations contributed to the lack of any differences. Since there were no differences, both factors were reported as one.

Only 35 of the 37 subjects responded to this dimension. Of the 35 subjects, 21 or 60 percent showed a greater ability for verbal expression. An analysis of subgroup scores shows that five or 45 percent of the trainable teachers and five or 50 percent of the trainable aides showed greater skills in verbal expression. Nine or 75 percent of the day-training aides showed positive change in verbal expression.

It might be concluded that if the ARITM had any effect on improving the verbal expression of the subjects, it was slight. Furthermore, any effect it might have would most likely be found in the Day-training subgroup. This conclusion would not be surprising if one considers three factors: 1) the trainable teachers and the trainable aides worked as teams and, therefore, interacted to a great degree; 2) teachers' training is usually a highly abstract verbal process, these factors might have left little room for improvement; and 3)

day-training aides on the other hand experience much less daily interaction with teachers and have had little exposure to the abstract verbal aspects.

Possibly the most important explanation, considering the lack of large gains, might lie in the fact that the ARITM deliberately attempts to avoid "jargon." This is done to maintain training on a concrete applicable basis. Secondly, since most subjects who have been involved with the ARITM since its inception have been persons with little advanced education, it was felt that the frequent use of technical language would serve only to alienate the subject and destroy the necessary rapport.

Intent Dimension

It would seem logical that before any in-service training program could be called successful there should be some evidence that the derived skills were indeed implemented in the classroom. Ideally, value should be judged by student gains. Since assessment of student gains could not be undertaken, and since a follow-up study was beyond the scope of this present study, some index of the subjects' intent to implement learned skills was devised which could be measured during the ARITM treatment period. The fact that McBride placed so much emphasis on this factor as one of the mitigating influences in his findings placed added importance on this dimension of the study. The increase in evidence of individualized instruction in the classroom was chosen as the index.

For this analysis, only the nine trainable teacher aide dyads were used. The unit of analysis was the number of instructional interactions taking place between student and instructor during a typical classroom day. These interactions were classified as to the degree of individualization noted in the interaction.

Seventy three (73) interaction units were recorded during the pre-treatment session and 79 interaction units were recorded during the post-treatment session. The pre-treatment data showed the modal interaction type to be "whole class same activity," the least desirable of the five possible types. The post-treatment data indicates that "whole class same activity" continued to be the modal interaction type. There was, however, a shift toward individualization as evidenced by the change in frequency of use for the various interaction types. The number of interaction units occurring as whole class same activity decreased by fifteen percent (15%). A three percent (3%) decline was noted in type four. Class one (Individual) increased by five percent (5%). Overall, 18 percent of the total interaction units shifted toward greater individualized instruction.

If the assumption of individualization equals intent to incorporate learned skills can be accepted, then it can be concluded that there is an intent on the part of the subjects examined to incorporate what they have learned during the ARITM period.

Opinion Dimension

Analysis of the opinion dimension was confined to discussion of 16 most important questions contained in the opinion survey. Change

in group mean score was used as the index of opinion change. The results with some discussion for each statement appear in Chapter III. Most opinions remained unchanged over the treatment period, however, two statements warrant some additional discussion at this time. Those statements are numbers 29 and 40.

Statement Number 29

This statement considers the subject's perceptions of his strength in various areas or factors which may have some importance if one is to feel competent as an instructor. Within Statement Number 29, there were nine substatements or areas in which the subject was to rate his strength. On a whole group basis, the subjects felt that they had gotten stronger in assessment of the functional level of the children with whom they were working. This might be expected as the ARITM stresses assessment-based teaching. The second area in which all subjects indicated increased strength was in knowledge of the handicapping conditions of the subject worked with.

The trainable and day-training aides expressed growth in strength in more areas than the teachers; however, the teachers expressed opinions of more strength before treatment than did the trainable aides and day-training aides.

There was some concern on the part of the investigator that these nine areas of strength were too interdependent to be considered separately, particularly since no one area showed a vast tendency to change from pre to post. Because of this concern, it was decided to collapse these nine separate areas and consider them all as a single

indication of perceived strength. Examination on this basis reveals that all subjects tended to perceive themselves stronger after treatment than before treatment. No subject indicated in the post-treatment response that he was "very weak" in his strength as an instructor of handicapped children. The responses indicating "weak" declined from 20 percent to 6 percent. The feeling of adequacy increased by 6 percent and the "strong" responses increased by 8 percent. There was a 3 percent increase in the number of subjects who felt very strong. Although any significant increases of percentage in any given category would be difficult to substantiate, the entire shift from weak to strong would appear to justify the conclusion that all subjects felt stronger after treatment than before. In the absence of any other known treatment, it might, therefore, be assumed that the ARITM played a contributing role in this feeling of greater strength on the part of the subjects.

Statement Number 40

Statement Number 40 asks the subject to show the degree to which he agrees with the statement "I feel positive about participation in this year's in-service." Although both pre and post-treatment responses showed all subjects agreed with the statement, the opinion moved toward disagreement as indicated by a change in mean score from pre-treatment (1.8) to post-treatment (2.4). This was a drop of over 1/2 an interval and approached uncertainty. Likewise, all subgroups dropped in their strength of agreement. Since a decision was made to equate a change of .5 of an interval or greater with an indication of

real tendency to change, it might be concluded that something related to the ARITM occurred during the treatment period to cause this negative reaction.

This change would seem unlikely as improvement over the treatment period was noted in all dimensions. Some possible explanations for this change in opinion about participation might be identified through analysis of the open ended responses to Statement Number 41 of the opinion survey and other informal data and information. Some of the information follows.

As mentioned in Chapter II, although any subject could decline to participate in the project, this voluntary aspect of participation was not made explicit by the various school district administrations. The impact of this oversight was evident in conversations with the subjects as some indicated that they felt put upon to participate.

Another possible explanation lies in the relationship between the evaluation and the training aspects of the project. By design, the in-service trainers were not informed of all the specifics of the evaluation. Because of the individualized manner in which the specific content of the training sessions was derived (assessment of actual classroom problems) and because it was the process and not the subject matter of the training that was being studied, the evaluator was not always aware of the purpose behind each training session. Consequently, should a curious or anxious subject have asked a question of the in-service trainer about evaluation (or vice versa), the answer tended to be less than satisfying.

A third possible contributor to the change in opinion was the pace with which the in-service trainers worked. The active involvement at all times left little time to discuss with the subjects the overall direction and expectations for the project. This, at times, left the subjects wondering what was expected of them. These feelings were mentioned in Statement Number 40.

The nature of the evaluation might have contributed another possible explanation. The evaluation of the ARITM was not undertaken to measure known outcomes or compare known outcomes with another treatment. This study evaluated the ARITM as a model in an attempt to identify what teaching skills, if any, might be enhanced by such a method. It was, therefore, essential that the specific focal behaviors being measured were not fully disclosed to either the subjects or the in-service trainers. To do otherwise would have permitted, in affect, teaching to the test. Because these measures of focal behaviors could not be revealed, some of the subjects believed that they, and not the ARITM, were being evaluated. Although a concerted effort was made to convince them that no such thing was intended, several continued to believe that they were being evaluated as teachers.

A fifth possible contribution to the opinion change lies in the natural demands of the graduate training program in which the I.T.s were enrolled. To be expected within a graduate program, certain criteria for growth in proficiency were required of the I.T.s in administration of assessment devices, mastery of instructional techniques and evaluation of student progress. The time limitations for completion of the master's program forced the I.T.s to start their graduate school

learning process while actually working in the project. On a few occasions, this need conflicted with their ability to engage in activities solely for the benefit of the subjects.

The last possible contributor that this investigator can identify concerns the title given the I.T.s. Throughout the report of this study, the investigator referred to the persons providing the in-service training as In-service Trainers. In reality, they were referred to as Interns during the ARITM project period. This fact and the young ages of the I.T.s led to several comments expressed by the subjects to this investigator. The general feeling on the part of some of the more experienced subjects was that a young person who is still interning could not teach the older staff members how to be better teachers. In fact, the I.T.s were not trying to teach the subjects about teaching; only some rather specialized aspects of the teaching process. Taken in its right context, the idea of being taught something quite specific and new is quite plausible and might have been more palatable for the older subject, but the thought of being taught how to teach was to some subjects disturbing.

CONCLUSIONS

If the reader accepts the assumptions of this investigator and can accept small gains and tendencies toward change as indication of change, then the following conclusions can be asserted.

In general, the ARITM appears to address some of the critical aspects of the purpose behind in-service training. That purpose generally is to improve teaching skills and to have this improvement

manifested in the classroom. As mentioned in the introduction and represented by MacIntyre's statement, the chief criticism of traditional models of in-service training is that they show no evidence of changing teacher behavior in the classroom. MacIntyre also faults the traditional model (he is referring to the lecture method) as having little information giving value. It is generally accepted that the lecture method is an efficient way of sharing large amounts of information on a cognitive level. This aspect of purposeful in-service training is a valuable one, and serves to maintain the rightful use of the lecture as a viable in-service model. It would appear that the ARITM is complimentary and not antagonistic to this traditional model. As such, the ARITM should be considered as a valuable model, not to supplant the lecture model, but to enhance it and to teach to other skill areas to which the lecture or traditional method is not intended or particularly well suited to address. The efficacy of the ARITM as evaluated by this study should only be assumed within the context of the study population or within the context of similar population. That population, of course, is teachers and aides of similar characteristics who work in similar public school programs for trainable and severely retarded students. Based on this general statement, some specific aspects of the ARITM as a change agent for populations of similar composition are discussed below.

The profile of subjects' positive change in skill in applying behavior modification techniques supports the assertion that the ARITM is well adapted to quite effectively promote the acquisition of skill in this area. This statement applies to all subjects irrespective of subgroup affiliation. Considering specific subgroups, the

ARITM in this dimension appears to be more effective with aides than teachers and more effective with day-training program aides than with trainable program aides. The ARITM's effectiveness in teaching these skills was substantiated by McBride in his study. However, he was unable to substantiate an intent to use the new skills.

If the reader can accept this investigator's assumption of the relationship between individualization and intent to incorporate, then the efficacy of the ARITM in this area can be substantiated. Having been trained by the ARITM, the subjects show a tendency to incorporate their newly acquired skills into their daily instructional activities. If the subjects really do see an individualized approach to instruction as a desirable one, then it may be assumed that the incorporation of new skills in the classroom will be maintained beyond the project period. If the reader cannot accept the intent to incorporate/individualization identity, then at a minimum, he might conclude that the ARITM does promote a more individualized approach to classroom instruction.

Although showing less strength in the verbal expression dimension, the ARITM does seem to promote a positive change for some subjects in skills necessary to better express an understanding of the process of prescriptive or assessment-based teaching. For this dimension, the ARITM is more effective with day-training aides than with teachers and trainable aides in promoting positive change in the acquisition of verbal expression skills.

The ARITM had little effect on changing the opinions of subjects in regard to their general feelings of dissatisfaction with

the quality of the in-service provided in their school districts. As implemented for this project, the ARITM influenced a decline in the subjects' positive feelings about participating in the project. It is, however, difficult to assert which specific aspects of the project had more influence in stimulating this decline. Furthermore, it appears reasonable to assume that the ARITM represented such a radical departure from traditional in-service training formats that it was not even perceived by the subjects as being "in-service training."

The ARITM promoted among the subjects' feelings of greater strength as instructors. The positive change in perceived strength was more evident among aides than among teachers. The importance of this positive change in perceived strength takes on special significance when one recalls the low formal educational level of aides as observed by Cortazzo, Bensberg, Roselle, Wislon, Harris, Barnett and Parker. Considering McBride's work in institutions and his observations about the way the attendants perceived their roles as caretakers, it might be asserted that the change in perceived strength as instructors, for this subgroup, is as important as actually possessing the strength.

Over all dimensions, the ARITM appears to be most effective with day-training aides and more effective with trainable aides than with teachers. In light of the current situation in Michigan regarding the increased use of aides and Harris' findings in regard to the need for in-service training for these personnel, the ARITM might prove to be a valuable model for use as an in-service training method for promoting desirable change in the instructional behavior of staff members.

IMPLICATIONS for FURTHER RESEARCH

Although the formative aspects of this evaluation were not formally reported in this study, certain recommendations were made for modification of the ARITM and/or its implementation. In addition to incorporating the recommendations born out of this study, other modifications to the ARITM have been made by its developers since the completion of this study. A brief description of these modifications would appear appropriate as they have implications for further evaluation of the ARITM.

The title "Intern" (used during the J-H-L Project) has been replaced with the term "In-service Trainer" and "Consultant." Written contracts with subjects have been initiated as a means of assuring the voluntary nature of subject participation and clarifying the goals and objectives of the training. Each in-service trainer now works in more than one school system and inexperienced trainers are teamed with experienced trainers. In-service trainers are now reimbursed through an intermediate school district rather than the university, thus minimizing the potential for subjects developing the feeling that the I.T.s are outsiders. Before actually providing in-service training, the I.T. participates in workshops and course work designed to develop to full criterion the I.T.'s skills in implementing assessment and training techniques. Short classroom sessions with discussions and demonstrations are held for the subjects before they actually work with their students using the ARITM procedures.

Because of these changes, another evaluation might be appropriate to study the effect of these changes upon subject performance in the four dimensions of this study.

Although this investigator feels confident that his index of intent to incorporate has some validity for indicating that the learned skills will be incorporated into the classroom structure and will be maintained beyond the project period, he feels that a follow-up study would prove of value in substantiating this assertion.

The great numbers of subjects showing growth in the application of behavior modification techniques who also showed growth in stimulus presentation as a primary learning facit might indicate some value in pursuing further study. The focus of such study might be in assessing the relative value of various tasks and aspects of the instructional cycle to the overall learning progress of the student.

Although it can be assumed that a well trained teacher will insure a well trained child, some evaluation of the ARITM that considers student gains would be most desirable as an index of the effectiveness of the ARITM.

Finally, even though this study was primarily interested in examining the internal aspects of the ARITM, and not in comparison of the ARITM with a control group, the ability to state conclusions with assurance was somewhat mitigated by the lack of control group comparison and the inability to manipulate the instructional organization of the school system. A study that can control for the factors of subject dependence, variation in group size, and non-subject units of analysis without violating the basic assumptions and characteristics of the ARITM would greatly increase the assurance with which conclusions about ARITM effectiveness could be made.

APPENDICES

APPENDIX A

Thank you very much for participating in the project evaluation. If you will take a few minutes to complete this survey it will be helpful. This survey is similar to the one you completed at the beginning of the project, but there are a few modifications.

Please answer all questions exactly as specified by the answer sheet.

e.g. a. Ranking questions need to have each alternative assigned a different numerical value from one to seven according to your opinion of the item's importance.

b. Most of the questions have circles next to the available alternatives. Fill in only one circle--the one which comes closest to your feeling.

c. For one question (#29) please place an "x" in the box which describes your feeling for each of the content statements.

d. Answer to the best of your ability even those questions you feel do not apply.

Your personalized opinions were very helpful when you completed the first survey so please continue to write them if you like. Write them to the side of the item to which you are referring after you have completed that item according to directions.

Again let me express my gratitude for your cooperation.

Dan Herbert

Please complete the following before proceeding:

1. Your job title: 0 Teacher
   0 Aide

2. Years of experience working in programs for the handicapped _____.

To assure confidentiality this section will be removed after your answers have been coded.

Name: _____

10 1. Inservice training (any training provided after you are employed) should be given strong emphasis in all school systems.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

11 2. In my experience inservice training has provided a good opportunity to improve my competence in working with children.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

12 3. In my experience of working with retarded children inservice training has been an important positive factor in my success.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

13 4. I am satisfied with the inservice training program that now exists in my school district.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

14 5. I find that little of the new information I obtain at inservice experiences I apply directly in the classroom.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

15 6. Are you interested in more inservice training?

0 yes
0 no

16 7. Are you interested in more inservice training pertaining to mental retardation?

0 yes
0 no

8. A very important component of an inservice training model should be providing release time from the classroom to participate in the program.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

9. Please rank in the order of <u>your preference</u> these opportunities for improving yourself in your work.
Give a one (1) to that choice which you most prefer, a two (2) to your second choice, a three (3) to your third choice, 4, 5, etc. until you have ranked <u>all the listed choices</u>.

___ Professional journals
___ College or university course work
___ Unsupervised work experiences
___ Text books
___ Planned inservice training
___ Conferences and institutes
___ Conventions

10. Please rank in order of your preference these various delivery styles that have been used in inservice training programs.
Give a one (1) to that choice which you most prefer, a two (2) to your second choice, a three (3) to your third choice, 4, 5, etc. until you have ranked <u>all the listed choices</u>.

___ Group workshops (activities)
___ Individual instruction
___ Speakers
___ Closely supervised practice
___ Small group discussions
___ Demonstrations to the group
___ Self instruction

11. What are the things you would most like to get from a program of inservice training? (Be as specific as possible)

34 12. Most consulting teachers or itinerant specialists have lost touch with the everyday necessities of instruction in a class of mentally retarded children.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

35 13. Have you ever had a consulting teacher or itinerant specialist come into your class to assist you in working directly with a child?

0 yes
0 no

If yes to question 13 please respond to statement 14.

36 14. I found this contact valuable.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

37 15. Prescriptive teaching is an important technique in the education of retarded children.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

38 16. Behavior modification has much to contribute to the education of the whole child.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

39 17. Providing love and understanding is the most important thing I can do for the children

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

40 18. Behavioral objectives are important tools for educators of the retarded child.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

41 19. Megavitamin therapy (giving large doses of vitamins) has little to contribute to the education of mentally retarded children.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

42 20. I believe teaching is more of an art than a science.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

43 21. A learning disabilities approach to the education of retarded children is an important consideration in program planning.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

This section refers to your program or building administrator. This person should be the individual who has overall administrative, supervisory, and programming decision making responsibilities. I know that it is very difficult to answer questions about another person's opinions, however would you please answer the questions as best you can concerning how you think he or she might feel.

44 22. Your administrator is dissatisfied with the quality of the inservice training in his/her school.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

45 23. Your administrator is aware of your individual needs for inservice training.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

46 24. Your administrator places a high priority on inservice training.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

25. Briefly state what you think your administrator's description of a good inservice training might be.

47 26. I would feel competent to stop my work with one of my children to explain to his parents what I was doing and why I was doing it.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

48 27. When I ask a specialist for technical assistance I am very specific in outlining the areas in which he/she may be of help.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

49 28. Most special education teachers who use a lot of technical language are poor teachers.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

29. Please check (✓) the level of your strength in the following areas.

		Very Strong	Strong	Adequate	Weak	Very Weak
50	Observation of meaningful child behavior					
51	Program planning					
52	Conferencing with parents					
53	Current research in my field of work					
54	Assessment of functional level of the child					
55	Staff/student relationships					
56	Skill in teaching children					
57	Evaluation of student progress					
58	Knowledge of handicapping conditions I work with					
	Other					

59 30. I prefer working with groups of children rather than with an individual child.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

60 31. I feel I can teach any child something new.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

32. In your opinion, what are the necessary steps in an instructional process.

61 33. Making the child uncomfortable can be an acceptable teaching practice.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

62 34. If you cannot measure it you have not taught it.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

63 35. I find it difficult to measure growth of some of my children.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

64 36. The Doman/Delcato Method has contributed much to the education of retarded children.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

65 37. Sometimes I find it difficult to decide what to teach a child.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

66 38. I would like being video taped while I work with children.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

67 39. In my work I find it is important to understand the technical vocabulary related to the instruction of handicapped children.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

68 40. I feel positive about participation in this year's inservice training program.

0 strongly agree
0 agree
0 uncertain
0 disagree
0 strongly disagree

41. The following are suggestions for improving an inservice training of this type in the future.

_____

_____

_____

_____

_____

_____

_____

_____

Thanks again,

Ben

APPENDIX B

APPENDIX B

Center ___ Program ___

Staff ___ Intern ___

Count. ___ Indiv. ___

Whole Class School Day Program Schedule

Time Span	Nature of Activity	Indi-vidual	Sml. Grp. Individ.	Whole Class Individual	Small Group Same Actv.	Whl. Clss. Same Actv.

APPENDIX C

APPENDIX C

INSTRUCTIONS FOR COMPLETING CLASSROOM SCHEDULES

Talk with the teachers and aides with whom you work about the activities that go on in their classroom on a typical day. Try not to threaten the staff member by showing your feelings if you dislike or disagree with what they are telling you, or if they do not appear to be able to specify what they are doing.

Take notes and get specific times, types of activities, and teaching arrangements used for these activity times. Be as accurate as possible in these specifications as observation will continue to be a primary tool during this inservice training period. Record the information on the form provided. Most of the notations you will be asked to make are self explanitory in looking at the form. Teaching arrangement will need some definition. Use the following definitions:

INDIVIDUAL One staff member working with one child on a task that is particularly appropriate to that child's performance level.

SMALL GROUP INDIVIDUAL A staff member working with a small group of children on activities and levels appropriate to each child.

SMALL GROUP SAME ACTIVITY A staff member working with a small group of children on the same group activity and gearing instruction to the same ability level for all the children.

WHOLE CLASS INDIVIDUAL A staff member working with the whole class and gearing the same activity to individual performance levels.

WHOLE CLASS SAME ACTIVITY A staff member working with the whole class on the same activity and gearing instruction to a common performance level.

This interview and form should be completed during your first visit to your assignments.

Approximately two weeks later, after you know your staff better, you will re-examine these schedules and make a judgment as to the accuracy of the information given during the interview. If there are discrepancies, they should be noted on the form.

APPENDIX D

APPENDIX D

INSTRUCTIONS FOR COMPLETING THE TEACHING SAMPLE

Self Care
Language
Motor Skills
Arithmetic Skills

Name _____

Student _____

Center _____

Date _____

We would like you to teach a student something you think he needs to learn.

STEP 1: Choose a student you would like to work with for the next 30 minutes or so.

STEP 2: Select one of the four areas below you would like to work in:

A. Self Care (grooming, dressing, undressing, etc.)

B. Language (non-vocal, vocal and written)

C. Motor Skills (large and small muscle movements)

D. Arithmetic Skills (learning to understand and use numbers)

DIRECTIONS:

We would like you to teach your student something you think he needs to learn in the area you have chosen.

Here is a box of things that may help you. Feel free to use anything else you might need.

You have up to 20 minutes, with or without your student, to decide what you want to do.

After you have decided what you want to do with the student, we would like you to take 5 minutes alone with the student to work on teaching him whatever you have decided to do.

Thank you for your cooperation.

APPENDIX E

APPENDIX E

POST VTR RESPONSE SHEET

Code _____

1. What activities or groups of activities did you teach?

2. How did you determine that these activities needed to be taught?

3. Why did you teach the student the way you did?

4. Why did you think it was important to teach this activity or these activities?

APPENDIX F

APPENDIX F

JUDGE'S RESPONSE

Subsection A

☐ ____ Shows a better understanding of the concept of "prescriptive teaching"

☐ ____ Shows a better understanding of the concept of "prescriptive teaching

---

Subsection B

Indicate by placing an "X" in the box next to the statement which most appropriately reflects your feelings or you decided which description was the better one.

____ The two descriptions were so nearly equal that I could just as well have flipped a coin to decide.

____ The decision was very difficult, but my decision was definitely made based on the quality of the content in the description.

____ Although the quality of some aspects of the description caused me concern, generally the decision posed little difficulty.

____ Although the overall difference in the two descriptions was not vast, I had no trouble deciding which was the better.

____ The difference was like night and day.

Subsection C

☐ ____ Shows more use of technical language.

☐ ____ Shows more use of technical language.

Subsection D

Indicate by placing an "X" in the box next to the statement which most appropriately reflects your feelings or you decide which description was the better one.

____ The two descriptions were so nearly equal that I could just as well have flipped a coin to decide.

____ The decision was very difficult, but my decision was definitely made based on the quality of the content in the description.

____ Although the quality of some aspects of the description caused me concern, generally the decision posed little difficulty.

_____ Although the overall difference in the two descriptions was not vast, I had no trouble deciding which was the better.

_____ The difference was like night and day.

APPENDIX G

APPENDIX G

FOLDER CONTENTS

Each folder contains three units of information:

1. A description sheet provided by the staff member of interest upon which that individual described what he or she was doing during a video taped segment of instruction undertaken before receiving in-service training.

2. A description sheet similar to the above mentioned except that it was done after having received in-service training.

3. A two sheet unit upon which you will be asked to record your judgement on two particular dimensions.

Background and content of the description sheets:

At the beginning of the in-service training project, each staff member was asked to choose a child (student) with whom the staff member was comfortable. The staff member was to choose and give instruction to the student in one of four broad areas: 1) self care, 2) arithmetic skills, 3) language skills, 4) motor skills. Furthermore, the student could not yet have mastered the concept of skill which would be taught.

This instruction (5 minutes in duration) would be video taped. After the session was over, the staff member was asked to give a written response to four questions concerning the instructional session that was just completed.

This procedure was undertaken in the fall before in-service training and in the spring after in-service training. Both description sheets (pre and post) are in the folder. Each description sheet has been coded randomly so their position in the folder and the code assigned to each description bear no relationship to the time (pre/post) they were given.

APPENDIX H

APPENDIX H

EVALUATION PROCEDURE

Judge's Task

The task of the evaluator (you) is to decide which of the two descriptions better illustrates the staff member's verbal command of two (2) dimensions:

1. An understanding of the "Prescriptive Teaching" concept.

2. Greater use of the technical language of instruction.

"Prescriptive Teaching" will be here defined as:

> The orderly process of instruction characterized by: 1) the setting of goals and objectives, 2) assessment of the child's current understanding and ability levels, 3) the designing of the instructional process appropriate for a given student, the evaluation of the degree to which the student achieved the instructional objectives.

Judge's Procedure

1. Read both description sheets.

2. Turn to the sheets you are being asked to complete:

   a. place a checkmark in the box that preceeds the statement which best represents your feelings.

   b. you must place one (ond only one) "X" in each of the four subsections on these response sheets.

3. You may read each staff description as often as you desire to help you make your decisions.

APPENDIX I

INSTRUCTIONAL BEHAVIOR OBSERVATION CHECKLIST

Trainer _____ Date _____

Staff _____ Center _____

Student _____ Program _____

TASK DESCRIPTION _____

_____

_____

_____

_____

Stimulus Format				Response Format		Consequence Format			
Trial	Task Change	Attention	Stimulus Presentation	Prompts	Response	Feed back	Reinforcement	Aversive or Extinction	TOTAL
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T -	R VP + T PP -	
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T -	R VP + T PP -	
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T -	R VP + T PP -	
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T -	R VP + T PP -	
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T -	R VP + T PP -	
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T -	R VP + T PP -	
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T -	R VP + T PP -	
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T -	R VP + T PP -	
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T -	R VP + T PP -	
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T -	R VP + T PP -	
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T -	R VP + T PP -	
	A -	G + ✓ -	V D VS + S O VSD -	+ ✓ -	(+) + O -	+ ✓ -	S ST + T	R VP + T PP -	

APPENDIX J

INSTRUCTIONAL BEHAVIOR OBSERVATION
CHECK LIST CODE KEY

Some of the categories below are divided into sub-divisions titled classifications (C), or judgements (J). Classifications are attempts to identify the type of behavior that is occurring and will be used in making later judgements as to the staff's attempts to shape the child's behavior. The judgements represent those behaviors which are immediately judged as appropriate or inappropriate in relation to the accepted techniques of operant conditioning.

Task — the instructional activity in which the staff member and the student are engaged. This should contain a complete enumeration of the objectives included in the activity, e.g., if the activity has objectives relating to matching colors and shapes, and labeling both color and shape, then all four should be mentioned as objectives. If one is omitted but instructional time is given to this omitted objective it will be considered as being irrelevant and possibly interfering with the instructional efficiency.

Task Change — refers to shifting the instructional interaction to evoke a response that has not been outlined as a specific objective listed under task. Includes child initiated behavior divergent from those behaviors specifically listed under Task and responded to by the staff member in some way. For example; Child puts away training materials without being asked - staff member thanks child.

In recording a task change as either productive(A) or non-productive(-) the skill with which the teacher handles the task change is not important. The important thing in judging if the Task Change is productive or non-productive is whether it was introduced for appropriate or inappropriate reasons. Since all task changes are recorded as a separate trial, errors made by the teacher in the execution of the Task Change will be

recorded in the same way as they are in any other trial.

C ⟶ 1. A. = a Task Change that is introduced because the teacher saw its introduction as being productive or necessary to the overall attainment of the instructional goals. Includes: "Fold your hands", "Sit still", "Blow your nose". Token exchange. Does not include commands for attention, "Look at this", "Look at me".

T ⟶ 2. - = a Task Change that is non-productive or destructive to the stated objective. Includes: Any changing of the subject or the nature of the interaction that is not specifically intended to expedite the child's learning or to manage the child's behavior. Switching from receptive labeling tasks to expressive labeling tasks with a non-verbal child. Introducing humour when tension release is not necessary.

Trial — a trial is a discreet segment of instructional interaction which represents one of a series of similar segments directed toward the completion of the specific task. Each trial begins with a stimulus presentation and ends with whatever instructional interaction that takes place immediately before the next stimulus presentation. A trial may contain a) Stimulus Presentation, b) prompting, c) child response, and d) some staff behavior contingent upon the child's response.

Attention — refers to any activity on the part of the trainer used to gain/regain control of the child's focus on the task; and does not include hand folding commands. The symbol used in recording Attention

(✓, G, -, or +) represents the stimulus presentation, any prompts, the response and any consequence needed to get Attention, and therefore recording this process is done when you mark one of these symbols.

C ⟶
1. ✓ = Attention had to be evoked and was <u>before</u> stimulus presentation (S.P.)
2. G = refers to general instructions or explanatory statements given to direct the child's attention to the task at hand. Includes explaining the rules of a game before giving the stimulus presentation.

J ⟶
3. - = Attention was absent at the time of S.P. and remained in an absent state.
4. + = Attention was present at the time of S.P. and was unnecessarily evoked by the staff member; includes Attention getting that is too complex or repetitious.

5. ____ = Attention was present and not evoked.

<u>Stimulus Presentation</u> is the use of vocal, gestural, tactual and/or demonstrative presentation of the desired task for the purpose of commanding a response on the part of the child.

C ⟶
1. V = Vocal command
2. S = a visual command or a command that is intended to cue by Sight only (non-verbal)
3. D = a Demonstration of the desired activity by the instructor, or walking the child through the activity.
4. O = implicit command; one that is understood by the child without having it explained in any explicit form. For example; displaying of

object; pointing to or touching the specific object.

C
- 5. VS = a simultaneous combination of Vocal and Sight.
- 6. VSD= a simultaneous combination of Vocal, Sight and Demonstrative

J
- 7. - = less than sufficient or absent stimulus presentation (usually absence of vocal component) Includes child initiated action.
- 8. + = a stimulus presentation that is too complex, too frequent, unnecessary or inconsistant.

Prompts cues given to the subject at some time after the completion of the stimulus presentation but before the completion of a correct, an approximation or incorrect response. Includes physical assistance, imitative prompting, encouragement to complete a response,etc.

C
- 1. ✓ = appropriate prompt

J
- 2. - = absent when should have been present
- 3. + = over prompting - unnecessarily high frequency of prompts per trial or a type of over prompting (other than frequency) which means that the prompt offered more help than was necessary e.g. too many media used or complete prompt used when partial would have sufficed.
- 4. _____ no prompt was given and was not needed

a prompt can be distinquished from the reintroduction of a preceeding stimulus presentation according to the degree to which the two resemble one another.

-a stimulus repetition would be worded very closely to the stimulus as it was initially presented.

e.g. SP = What is this? (staff holding a cup)

SP = John, what is this?

SP = What am I holding?

-a prompt would be worded differently from the stimulus and may reflect a slightly different but related intent.

e.g. SP - What is this? (staff holding a cup)

P - Is this a cup?

P - Say cup.

P - Cup.

Response refers to the type of response emitted by the child as a direct result of the trial attempts

C →
1. - = incorrect response
2. + = correct response
3. (+)= an approximation of the desired response
4. 0 = no response

Consequence the action taken by the instructor as a means of providing information to the subject concerning the nature of his response

A. Feed Back

C → 1. ✓ = correct feedback for correct or incorrect child response

J →
2. - = incorrect insufficient feedback or no feedback where there should have been
3. + = feedback that is too complex, too frequent, unnecessary or inconsistant.

B. Reinforcement - feedback of a rewarding nature

C →
1. S = Social reinforcement (includes gestural, vocal or tactual)
2. T = includes Tangible reinforcers; such as toys, food, or tokens
3. S.T.= a combination of Social and Tangible reinforcements

J → { 4. - = no reinforcement for correct response, or consequence was not reinforcing.
5. + = too much or too extravagent reinforcement or reinforcement for inappropriate response or reinforcement for an approximation when child can make a better response.

C. Aversive and/or extinction procedures-

C { 1. R = Removal of Reinforcers given for prior performance
2. T = Time out
3. VP = Verbal Punishment (harsh reprimands)
4. PP = Physical Punishment

J { 5. - = Absence of aversive or extinction procedures when there should have been.
6. + = Unnecessary or too frequent use of aversive and/or extinction procedures.

APPENDIX K

APPENDIX K

IBOCL RELIABILITY CHECK

Three types of reliability checks were originally planned. A test retest, an interrater, and a rating against models were attempted. The last formal training period occurred eight days before the check list was to be used for evaluating the subjects. The last twenty minutes of this period was scheduled for the first of the test retest reliability checks. However, a technical problem with the video tape recorder necessitated cancellation of the session. There was not enough time to arrange another session, so there are no test retest data.

The reliability check session proceded in the following manner. Seven teaching samples were chosen from a bank of tapes developed at other facilities. These seven were chosen on the basis of similarity to project interactions. Of these seven, three were randomly selected for use in the reliability check. The middle three minutes of each interaction were edited from each of the three tapes selected. These three-minute segments were ordered A, B, and C. Two duplicate tapes were then made of these interactions.

The six observers were then divided into two groups of three observers in each group. Each group was housed separately with a video tape recorder for each group. Within each group, the observers were seated around a large table. Enough distance between each observer was allowed to reduce distraction and encourage independence in evaluation. All observers in each group faced a large (21") TV monitor. The observers were told that, unlike the training session, no conversation

would be allowed and no comments could be made during the observation periods. The only comments permitted were requests to stop the tape. This request could be made as often as needed by any of the observers. Only that observer who made the request to stop the tape could request that it be started again. The investigator handled the video tape recorder for one group, and the project coordinator handled it for the other group.

IBOCL forms were given to each observer in sufficient quantity to allow recording all trials in all three interaction segments. Each IBOCL contained a description of the instructional segment that the intern would be observing.

After each segment was completed, the IBOCL's for that segment were collected and marked with an A, B, or C, depending upon which segment was scored. After all segments were scored, the observers were asked to rate all three segments as to which segment showed the "best," the "middle," or the "poorest" application of behavior modification techniques. Upon completion of this task, the observers were dismissed.

Prior to the reliability check session, the investigator and the project coordinator viewed the three taped segments. This observation was made according to the IBOCL format. After observing the tapes, each independently rated the segments as to "best," "middle," or "poorest." There was perfect agreement between the two raters. This rating then constituted the model against which the reliability of the observers' judgments would be measured.

Interrater reliability was measured by taking each I.T.'s IBOCL for each segment. For a given segment column, totals of negative

judgments were calculated. Each observer's column totals for a segment were compared. Data can be seen at the end of this Appendix.

Kendall's Coefficient of Concordance was applied to the data to yield an interrater reliability of .86.

In comparing the observer's rating of the three segments against the model constructed by the investigator, five (5) out of six (6) of the observers had perfect agreement. One of the observers gave a middle rating to the model segment rated best. That observer also rated as "best" that segment that was rated "middle" according to the model. No formal analysis for reliability was made of this "against model" reliability check, as it was assumed to be equal to or better than the .86 obtained in the interrater reliability check.

RELIABILITY CHECK

RAW DATA

Evaluator (I.T.)	Tape	Col. Tot. for Neg. Judgments						Ranking of Tapes		
		t.c.	atn.	s.p.	prm.	f.b.	rnf.	Top	Middle	Poorest
1	A	4	2	3	0	0	0			X
	B	0	2	3	4	0	3		X	
	C	0	1	1	0	0	0	X		
2	A	5	1	2	0	0	0			X
	B	0	1	1	0	0	0	X		
	C	0	1	3	0	0	3		X	
3	A	5	2	3	0	0	0			X
	B	0	1	0	0	0	0	X		
	C	0	0	2	0	0	2		X	
4	A	4	1	3	2	1	0			X
	B	0	1	1	0	0	0	X		
	C	0	0	2	0	0	3		X	
5	A	4	1	2	0	0	0			X
	B	0	1	1	0	0	0	X		
	C	0	0	2	0	0	3		X	
6	A	4	0	2	0	0	0			X
	B	0	1	1	0	0	0	X		
	C	0	0	2	0	0	3		X	

APPENDIX L

APPENDIX L

GENERAL DIRECTIONS

EACH FOLDER CONTAINS A PAIR OF SEGMENTS. AFTER COMPLETING THE REQUIRED OBSERVATION AND EVALUATION, PLACE THE FORMS BACK INTO THE APPROPRIATE FOLDER AND GO TO THE NEXT FOLDER. AFTER COMPLETING ALL FOLDERS, MAKE SURE THAT EACH CONTAINS ONLY THE THINGS THAT ARE APPROPRIATE TO THAT FOLDER.

YOU SHOULD HAVE ALL THE MATERIALS YOU NEED. FEEL FREE TO ASK FOR ANYTHING YOU NEED OR FOR ANY INFORMATION YOU REQUIRE ON THE PROCEDURE THAT I HAVE ASKED YOU TO GO THROUGH. I CANNOT ANSWER ANY QUESTIONS YOU MAY HAVE ABOUT WHAT YOU SEE ON THE TAPE.

READ THE TASK DESCRIPTIONS YOU HAVE FOR EACH INTERACTION YOU ARE TO VIEW. DO THIS PRIOR TO VIEWING THE TAPE.

APPENDIX M

APPENDIX M

LIST OF CODED SEGMENTS

TO: _____

The numbers that appear on this sheet are code numbers that have been assigned to the segments of tape you will view. Under "I", the codes are listed in a straight line. This tells you that they will appear in that order on the tape you are about to watch. Under "II" you will see the same list of code numbers giving further information according to the way that they are paired. This means that the two paired numbers belong to the same staff member and one of the numbers represents the pre tape and one of the numbers represents the post segment. A coin was flipped to decide which one of the two segments would be mentioned first in the pair so their order has no bearing on when they were taken.

I. Codes in order of appearance

49-33-13-17-71-39-64-47-2-44-41-67

II. Codes in order of appearance and coupled to staff member's pairs

49 -- 33

13 -- 17

71 -- 39

64 -- 47

2 -- 44

41 -- 67

APPENDIX N

APPENDIX N

INSTRUCTIONAL BEHAVIOR ANALYSIS SHEET

Please answer the following items to the best of your recollection. You may refer to the Instructional Behavior Check Lists you have completed on the two video tape segments you have just viewed. Do not replay the two segments during this process.

I. Of the two segments you have just viewed, which one do you feel reflected the effect of the inservice training. In other words which segment was the better one.
The segments are listed with the code number in the order viewed by you. Place an "X" in the box preceding your choice.

/_/ _____ was the better segment

/_/ _____ was the better segment

II. Place an "X" in the box preceding the statement which most appropriately reflects your feelings as you decided which segment to choose as the better one.

/__/ The two segments were so nearly equal that I could just as well have flipped a coin to decide.

/__/ The decision was extremely difficult, but my decision was definitely made based on the quality of the content of the segment.

/__/ Although the quality of some aspects of the segment caused me concern, generally the decision posed little difficulty.

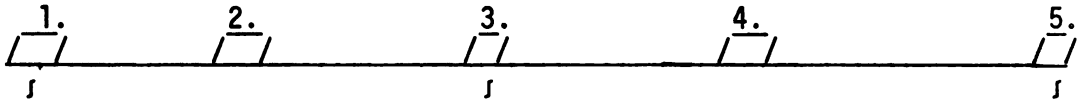
/__/ Although the overall difference in the two segments was not vast, I had no trouble deciding which was the best.

/__/ The difference was like night and day.

III. NOW, CONSIDER ONLY THAT SEGMENT WHICH YOU CHOSE AS THE BETTER ONE. On each of the following pages (4, 5, 6, 7, 8, 9, 10) one dimension or aspect of interest will be addressed concerning the content of the better segment.

Attempt to give your estimate of the staff member's strength in each of the following dimensions. Place an "X" in the box which best describes your estimate of that person's strength as reflected by the performance in the segment. Boxes 1, 3 and 5 on the line have descriptions underneath them to help you in deciding the meaning attached to that respective choice. Place an "X" in box 2 or 4 if your estimate lies somewhere in between. The choices with the written description mark one box only. You must make some judgment on each dimension.

1. Sticking to the described TASKs or making only task changes which were essential to achieving the instructional objective.

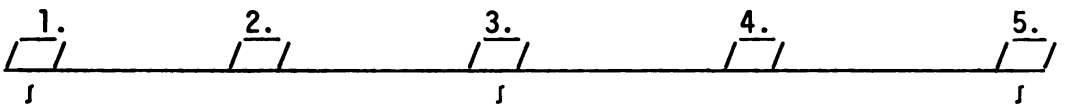


Extremely poor-lack of skill stands out as a deficit

Adequate

Excellent skill-an outstanding characteristic of the segment

2. Holding or efficiently regaining the child's ATTENTION during instruction.

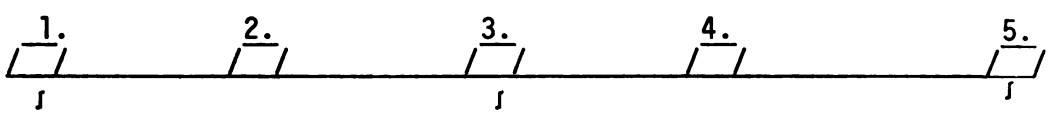


Extremely poor-lack of skill stands out as a deficit

Adequate

Excellent skill-an outstanding characteristic of the segment

3. Clear concise STIMULUS PRESENTATION.

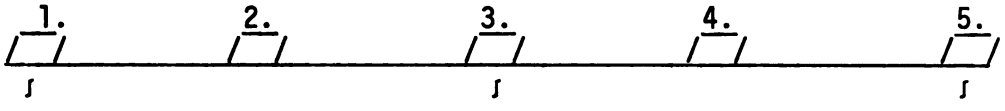


Extremely poor-lack of skill stands out as a deficit

Adequate

Excellent skill-an outstanding characteristic of the segment

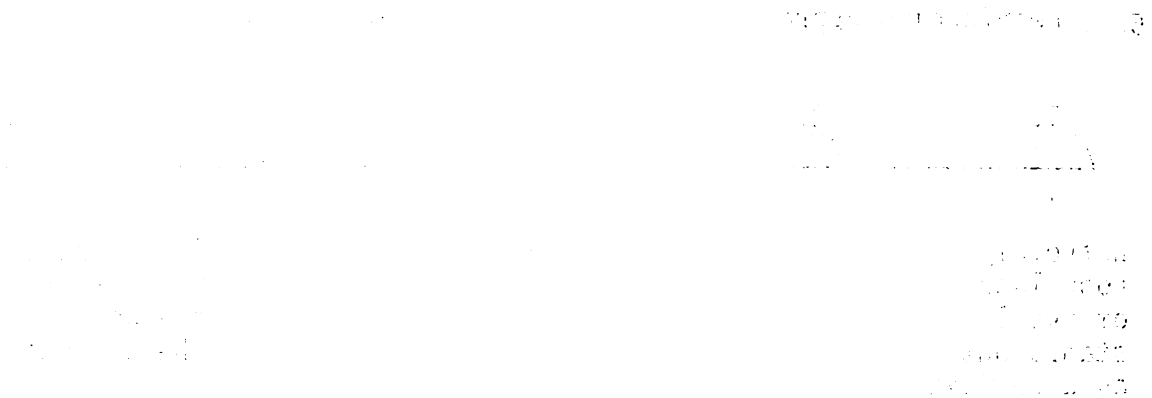
4. Appropriate use of PROMPTING.



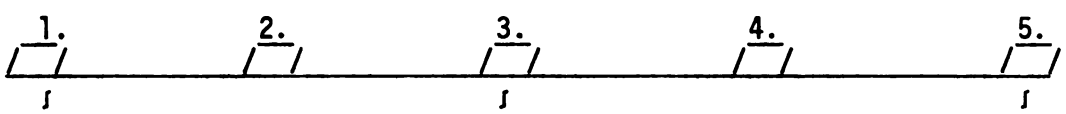
Extremely poor-lack of skill stands out as a deficit

Adequate

Excellent skill-an outstanding characteristic of the segment



5. Reinforcing appropriate approximations (SHAPING).

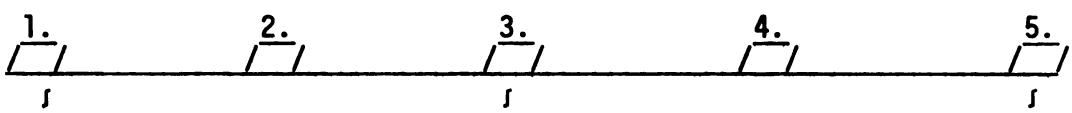


Extremely poor-lack of skill stands out as a deficit

Adequate

Excellent skill-an outstanding characteristic of the segment

6. Appropriate application of REINFORCEMENT and FEEDBACK.

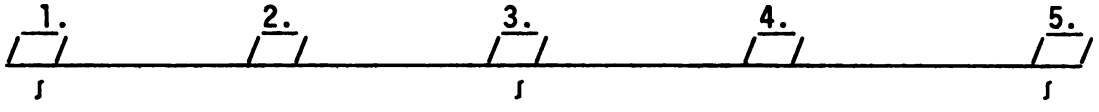


Extremely poor-lack of skill stands out as a deficit

Adequate

Excellent skill-an outstanding characteristic of the segment

7. Overall CONTROL of the situation (use any cues that impress you to determine if you feel the teacher was generally in good command of the situation).



Extremely poor-lack of skill stands out as a deficit

Adequate

Excellent skill-an outstanding characteristic of the segment

Now, please consider those dimensions you have just marked. Go back and consider each one separately. Circle the number in front of only those dimensions which you feel have shown growth. To do this you must mentally compare the two tape segments you have just viewed and note the differences between the two. GROWTH WILL BE DEFINED AS THE DIFFERENCE IN PERFORMANCE BETWEEN THE TAPE SEGMENT YOU REJECTED AND THE TAPE SEGMENT YOU CHOSE AS THE BETTER OF THE TWO.

APPENDIX O

APPENDIX O

PRE TREATMENT CHARACTERISTICS OF THE INSTRUCTIONAL ENVIRONMENT AS THEY RELATE TO THE RESPECTIVE SUBJECT DYADS

Characteristics of Pre Treatment Instructional Environment	Subject Dyads							
	1	2	3	4	5	6	7	8
Length of Instructional Day in Hours	5	5.25	4.5	4.5	5.6	6	5.6	5.75
Number of Discrete Instructional Interaction Units	11	9	9	7	11	9	8	9
Range of Time in Minutes Taken For Instructional Units	15 to 50	15 to 60	15 to 45	15 to 60	15 to 60	15 to 60	15 to 90	15 to 90
Average Time in Minutes Taken Per Unit	27	35	30	39	29.5	40	35	38
Modal Type of Instructional Interaction on 5 Point Scale	5	4	5	2	5	5	5	5
Range of Instructional Interaction Types Using 5 Point Scale	1 to 5	1 to 5	4 to 5	2 to 5	3 to 5	3 to 5	2 to 5	3 to 5
No. of Units Recorded for Modal Interaction	7	5	7	3	8	6	6	7

APPENDIX P

APPENDIX P

POST TREATMENT CHARACTERISTICS OF THE INSTRUCTIONAL ENVIRONMENT AS THEY RELATE TO THE RESPECTIVE SUBJECT DYADS

Characteristics of Post Treatment Instructional Environment	Subject Dyads							
	1	2	3	4	5	6	7	8
Length of Instructional Day in Hours	5	5	5	6	5.25	5.25	5.25	5.25
Number of Discrete Instructional Interaction Units	10	11	10	10	9	8	10	11
Range of Time in Minutes Taken for Instructional Units	15 to 50	15 to 60	15 to 60	10 to 100	15 to 75	30 to 50	15 to 75	15 to 75
Average Time in Minutes Taken Per Unit	30	37.5	30	35	38	38	37.5	31
Modal Type of Instructional Interaction on 5 Point Scale	5	2	5	5	5	5	5	5
Range of Instructional Interaction Types Using 5 Point Scale	2 to 5	1 to 5	1 to 5	1 to 5	1 to 5	2 to 5	2 to 5	1 to 5
No. of Units Recorded for Modal Interaction	5	4	6	6	6	4	6	3

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