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ABSTRACT

During the past reporting period the curriculum development staff of Project MORE (Mediated Operational Research for Education) has made substantial progress in attaining its program objectives. Design and development phases have proceeded on schedule. Four programs are currently in the field-testing stage, and four others are under development. The program dissemination editor has established procedures for obtaining and holding copyrights. Also, following the advice of a marketing consultant, arrangements have been made to list the Hair Rolling Program. In addition, plans have been made to write a book detailing the principles and procedures of the new technology required for the design, development, and dissemination of educational products by Project MORE. Furthermore, progress has been made in the McLean-Raymore Speech Articulation program. The program design and packaging, however, were not made efficient enough for large-scale application. Other aspects of program development will be temporarily delayed in deference to preparing the generlaization component for marketing. Moreover, the research staff together with the media group are proposing to develop a new program thrust using television. Finally, another project component is being proposed to teach pre-arithmetic skill to retarded children. (Author/WCM)

QUARTERLY PROGRESS REPORT

Project No. 26-2364
Grant or Contract No. OEG-0-71-0449(607)

PROGRAMMATIC RESEARCH TO DEVELOP AND DISSEMINATE IMPROVED INSTRUCTIONAL TECHNOLOGY FOR HANDICAPPED CHILDREN

Richard L. Schiefelbusch
and
James R. Lent

The University of Kansas, Bureau of Child Research
and
The Parsons State Hospital and Training Center

Parsons, Kansas

December 1, 1972

The research reported herein was performed pursuant to a grant with the Bureau of Education for the Handicapped, U.S. Office of Education, Department of Health, Education and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official position of the Bureau of Education for the Handicapped.

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Bureau of Education for the Handicapped

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Name of Institution: The University of Kansas, Bureau of Child Research
and
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Name of Project Director(s): Richard L. Schiefelbusch
and
James R. Lent

Bureau of Education
for the Handicapped
Division of Research

Title of Project: PROGRAMMATIC RESEARCH
TO DEVELOP AND DISSEMINATE
IMPROVED INSTRUCTIONAL TECHNOLOGY
FOR HANDICAPPED CHILDREN

1. Major Activities and Accomplishments During this Period
2. Problems
3. Significant Findings and Events
4. Dissemination Activities
5. Capital Equipment Acquisitions
6. Data Collection
7. Other Activities
8. Staff Utilization
9. Future Activities Planned for Next Reporting Period
10. Certification

R L Schiefelbusch

James R. Lent

Signature of Contract Officer

Signatures of Principal Investigators

Date

November 30, 1972
Date

TABLE OF CONTENTS

ABSTRACT

During the past reporting period the Curriculum Development (Lent) staff of Project MORE has made substantial progress in attaining its program objectives. Design and development phases have proceeded in accordance with the schedules determined by the loading charts established for each program (see Lent, Program Activity graph). Four programs are currently in the field-test stage and four others are under development. However, new procedures have been established for the field testing of products in order that testing can yield better data more quickly in the future.

The Program Dissemination Editor, working in accordance with guidelines of the USOE Copyright Office, has established the procedures for obtaining and holding copyright for products developed under the aegis of Project MORE. These procedures may serve as a guide for other similar projects needing to market products developed under USOE sponsorship (see Media Section: Procedure Lattice for Marketing Instructional Products).

Following the advice of marketing consultant, John Dostal, arrangements have been made to list the Hair Rolling Program for ordering through Psychologists and Educators, Inc., of Jacksonville, Illinois. The implementation of this step is regarded as a major breakthrough for the Project.

The technology required for the design, development, and dissemination of educational products has been developed during a two-year period by Project staff. In general the procedures have proven to be feasible and functional. The primary vehicle for planning and organizing Project activities has been systems analysis. The Curriculum Development group (Lent) and the Media group (McLean) have been analyzed and restructured by James Budde, the systems analyst for Project MORE. During this period the articulation group (J. E. McLean and Raymore) is being analyzed and restructured. Many of the procedures developed by Project staff, with the help of the systems analyst, are regarded as replicable and generalizable to similar projects. Accordingly, plans have been made to write a book detailing the principles and procedures of the new technology.

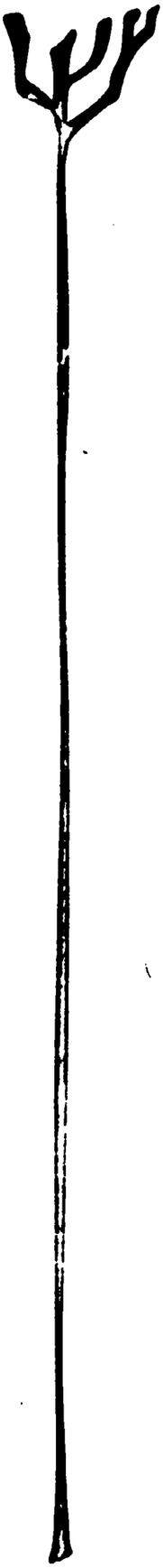
Solid progress has been made in the McLean-Raymore Speech Articulation program. Field-test data indicate the program is valid with a normal population in public school settings. The program design and packaging, however, were not made efficient enough for large-scale application. In order to streamline the program and make it maximally useful for application by professional and paraprofessional staff, the Project will redirect its efforts for the coming year. During the next period, the total staff effort will be directed toward the revision and revalidation of the generalization portion of the program. Other aspects of program development will be temporarily delayed in deference to preparing the generalization component for marketing.

The research staff of Project MORE, together with the Media group, are proposing to develop a new program thrust during the next grant year. The program content of an already developed program, such as the Showering Program, will be totally revised for presentation in another medium--television. The programs, when developed, will be released on regional CATV networks. The implications of this experiment could be far-reaching (see Media Section, Future Activities).

Another Project component is being proposed for funding in the coming year. Dr. Joseph E. Spradlin and Michael Dixon have submitted a proposal to develop techniques and materials to teach pre-arithmetic skills to retarded children. Since nearly all retarded children are seriously deficient in arithmetic skills required for daily living in the community and since these children do not possess readiness skills to enable them to enter a regular arithmetic-skill curriculum, the need for such a project is apparent.

The project as a whole is on sound footing. It is achieving its objectives. The technology includes methods of identifying and dealing with problems before they become unmanageable. In addition, new program thrusts are being identified and implemented.

PROJECT MORE
Mediated Operational Research for Education
James R. Lent, Director



Bureau of Child Research, University of Kansas at Parsons State Hospital and Training Center, Parsons, Kansas 67357

INTRODUCTION

This Programmatic Project is directed toward the development of instructional programs aimed at specific behavioral deficits among handicapped children. The instructional programs are being: 1) empirically validated; 2) organized through the application of systems technology; 3) implemented by optimal, multimedia materials; and 4) to be disseminated in a way which assures immediate application in educational environments by virtue of their systematic nature and their multimedia format.

This Project is organized to accomplish these objectives through the use of Systems for organization, the Central Office for administrative support, Media for implementation, and through the two programmatic research projects: 1) Curriculum Materials for the Mentally Retarded, conducted by James R. Lent; and 2) Research, Development, and Dissemination of Programs for Improved Instructional Technology for Articulation Therapy in Public Schools, conducted by James E. McLean and Sandra Raymore. (Reports contained herein are referred to as LENT, McLEAN/RAYMORE, MEDIA, and BUDDE.)

1. MAJOR ACTIVITIES AND ACCOMPLISHMENTS

The Hair Rolling Program has been completed and will be offered on the market in a few weeks (see Dissemination under Lent and Media sections). Four programs are being field tested, and six others are being developed. (See graphic illustration on following page.)

Complete pretest and posttest data has been collected from two sites, Parsons State Hospital and Hissom Memorial Center in Sand Springs, Oklahoma, on the Showering Program. Two of the required four observers have scored the videotapes for response data.

Pretest and posttest data is available from one field test site on the Ironing Program. Additional data will be available from Parsons State Hospital and from other field-test sites during the next quarter.

Pretest and posttest videotapes are available from Parsons and have been partially converted to data on the Feminine Shaving Program.

Pretest and posttest tapes are available from one field-test site and are scheduled for conversion to response data on the Face Shaving Program.

The Oral Hygiene Program is in the nonstaff testing phase. This means that the program has been written and tested by Project staff and found to be generally adequate. Testing by staff persons not associated with the Project, and the definitive writing of the programs, will form the basis for final, critical revision prior to field testing.

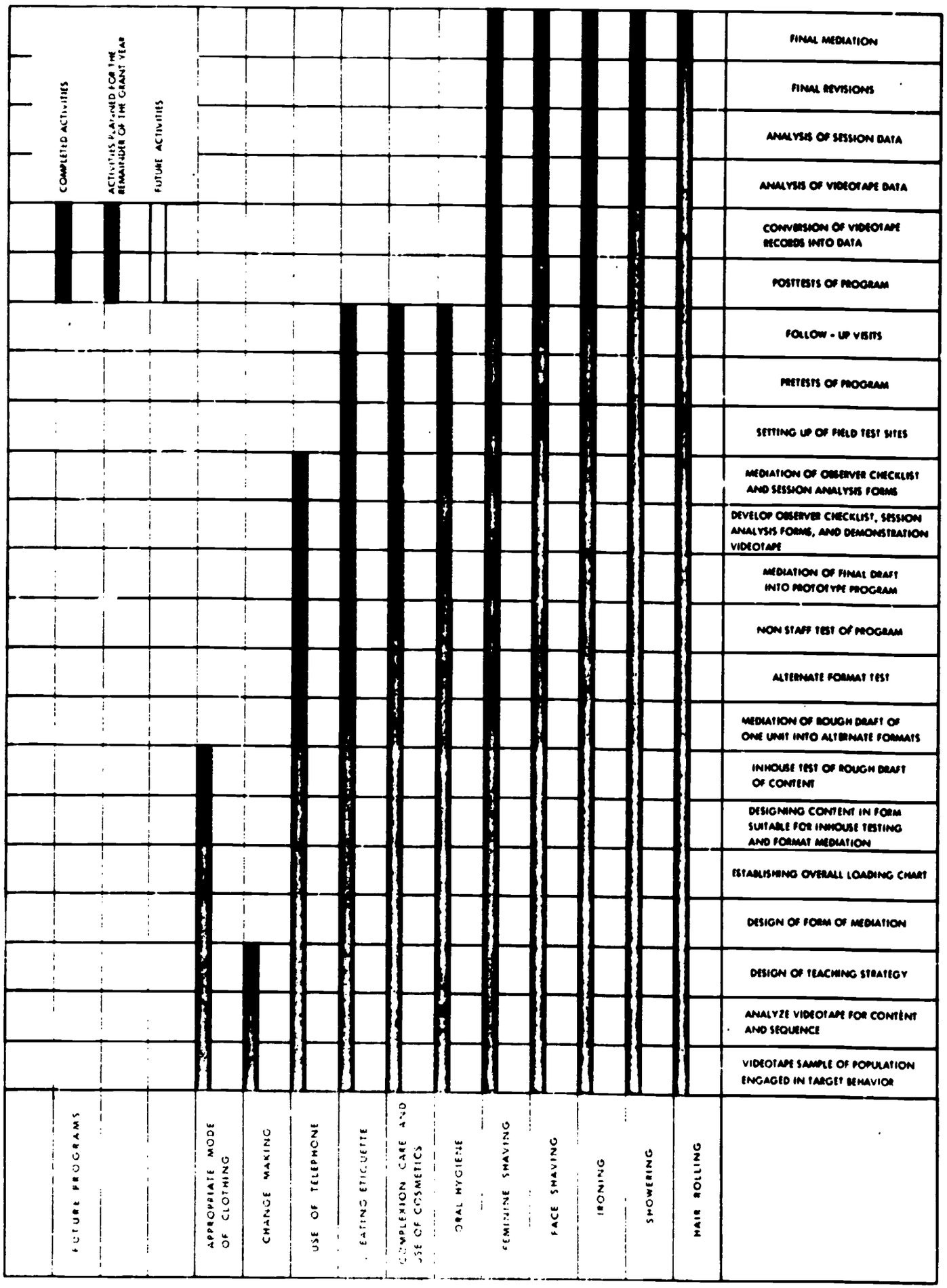
The data from in-house testing indicates the Telephone Usage Program is effective when taught by Project staff. Revisions in the manner in which the program is presented to the trainer are underway. The next phase will be non-staff testing.

The Complexion Care Program and the Eating Etiquette Program are being tested in-house. They will be ready for nonstaff testing in the near future.

The Appropriate Dress Program is nearly ready for in-house testing. As soon as the Media support group completes the preliminary materials, the testing will begin.

Booklets for teaching change counting have been developed and revised during in-house testing on the Change Making Program. Also, the pretest and posttest has been revised to allow the child to enter the program at his own level.

PROGRAM ACTIVITY



The Media component of Project MORE has offered its services to other research personnel affiliated with the Bureau of Child Research at the University of Kansas in all three of its settings--Lawrence, Kansas City, and Parsons. Criteria which have determined which research projects and personnel may be serviced are the following:

1. Is the research to result in a product?
2. Is this product to be an instructional package?
3. Will the instructional package undergo validation processes?

If these questions can be responded to affirmatively, the Media group considers its priority scheduling and projects a time estimate which a particular non-Project MORE service request might demand. The extramural service is then planned into the mediational system and assigned to various staff members. These criteria will continue to be adhered to *experimentally* during the coming grant year. (See Media section, Production by Initiator and Time-Involvement graphs; see also discussion under Media Problems.)

Two such service projects during this last grant year have been the completion of a self-contained workshop package for KU/SEIMC titled "Let the Cards Do the Talking," and a classroom package on the principles and procedures of behavioral management for validation research in the University's Department of Human Development.

The entire Project MORE staff has, on several occasions, served in a consultant capacity for research personnel of the Bureau of Child Research and the University's School of Education in terms of program development and product mediation and dissemination. This activity, which is becoming more and more frequent, again points up the need for the production of the Project's book on the technology of program development--from need-assessment through a continuum of activity to eventuate in product marketing.

2. PROBLEMS

During the past year design and development of programs has proceeded on schedules predetermined by loading charts developed for each program. Field testing, however, has been delayed. Programs have been placed in field-test sites in seven different states. Personnel at the field sites report that conflicting responsibilities have prevented them from administering the programs often enough and systematically enough. In addition to this delay, another source of variance has been introduced which confounds the interpretation of results. By design, the data will answer the question of program-content adequacy. If the program is administered systematically and frequently enough, and if the program is adhered to in the daily teaching sessions, it can be assumed that the major source of variance is within the program itself. If these necessary conditions are not sufficiently accounted for, then the data will not answer the question of program validity.

Earlier this year steps were taken to reduce the unwanted variance by tightening the field-test procedures. Test sites were chosen which had established personnel with the necessary professional competencies; these persons had volunteered to be responsible for conduct of the field testing at their own settings. These supervisory personnel were brought to Parsons and trained intensively in Project MORE's observation and data-gathering procedures. They returned to their home bases presumably able to ensure systematic program application. Unfortunately, this training has not worked as well as it should have. The supervisors, though willing and dedicated, do not have sufficient control over their own complex environmemts. The new procedures have not been uniformly unsuccessful, however; a few sites are returning usable data. These places will be retained as field-test sites, and the others will be dropped.

Recently, a new plan has been evolved and set in motion. The new plan will yield a greater degree of control. Most of the field-testing will now be conducted at Parsons State Hospital and other nearby sites. Although this plan sounds straightforward, perhaps even patent, it has called for a major redefinition of roles and responsibilities for a large number of Hospital staff. The Superintendent and other administrators have endorsed the idea of Hospital staff conducting programs for field testing. When the idea was presented to nursing services and the various therapy areas, these areas agreed to participate even though many of the professionals feel that the plan will necessitate their crossing professional boundaries in the process. For instance, music therapists will

be teaching the Feminine Shaving Program and recreation therapists and trainees will be teaching the Showering Program. Better, more expeditious data is the primary objective of this plan, but, in addition, the implications for training implicit in it are far-reaching and important, and assume an importance of their own.

The dissemination of special education materials constitutes another Project problem area--an area now finding solutions through various interagency liaison dissemination activities. These are discussed thoroughly in the Media section under the Dissemination category.

The cooperative KU/IMC-Project MORE training venture proposed as part of Project MORE continuation last year, although conceptually sound, has been delayed in implementation to date because of cut-backs in IMC budgets. During the next grant year, however, development of workshop packages for the training of teachers in the use of Project MORE instructional packages will proceed (see all Future Activities sections and Dissemination sections herein).

3. SIGNIFICANT FINDINGS AND EVENTS

The most significant finding of the past year is that the technology for design and development of products has proven to be functional. Although the system does not prevent mistakes or delays due to situational variables, it is an efficient technology which is generalizable to other similar projects.

4. DISSEMINATION ACTIVITIES

When the grantee's (the University of Kansas) programs of instruction were introduced to the publishing industry--specifically, to the full-process publishers--the programs were met with misunderstanding and apprehension. The programs and the techniques they contain have had few precedents; therefore, publishers have, in some cases, admitted they really did not know the marketing feasibility related to such products. As a result, grantee was advised to actively participate in the market development of its own products. This participation has centered on attempts to create markets through dissemination information regarding the nature and potential of the products.

The United States Office of Education has endorsed the idea that researchers must find ways to get their products to their intended consumers; therefore, USOE has been recently in the process of establishing implementation guidelines and procedures to support this idea.

What follows is an itemization of the steps taken by Project MORE and its grantee organization, the University of Kansas, during this grant year to obtain commercial outlets for its products (see also Approval for Dissemination: Flow Chart):

1. Numerous letters were sent in an attempt to interest a full-process publisher of the materials.

2. Procedures were initiated to copyright The Hair Rolling Program, The Ironing Program, and The Showering Program, using the regulations set forth

3. The grantee has requested and was granted permission from the Office of Education to claim developmental copyright for a period of two years on all of the Project MORE materials.

4. Because of the uniqueness of the programs, it was decided to provide as much public exposure of the programs as possible. Such a step has already produced results in the creation of demand for the Project MORE programs, thus enhancing their marketability.

5. A direct result of the public exposure of the program was communication with Psychologists and Educators, Inc. of Jacksonville, Illinois. As a result, a distribution agreement between the grantee and that firm is being drafted. Edmark, Inc., of Seattle has expressed an interest in the products, and representatives of that firm have been in contact with Dr. Lent. The Project expects to add other distribution outlets as well, and follow-ups on inquiries are being processed with several companies.

6. An agreement is currently being drawn which would authorize the Extramural Independent Study Center of the University of Kansas to act as agent for the grantee. This agreement is being considered for approval by the University of Kansas' Office of Research Administration. The University attorney is advising on internal and external agreement papers also.

At present, the Project, through its grantee organization, is placing on the market experimental versions of The Hair Rolling Program with experimental versions of other programs to follow as validation testing for each is completed. The marketing of the experimental versions of the programs permits the Project to gather market analysis data in addition to collecting more comprehensive data on the effectiveness of the programs through widespread use.

Through the two-year development copyright authorization agreement with USOE, the grantee through Project MORE may market such experimental versions of its products until September 15, 1974. At any time prior to that date, it is the option of the grantee, if it should reach a satisfactory agreement with a publisher, to submit to the USOE Copyright Administrator a copy of that agreement for approval. If such approval is granted, the grantee will receive an authorization to market products commercially as "final material."

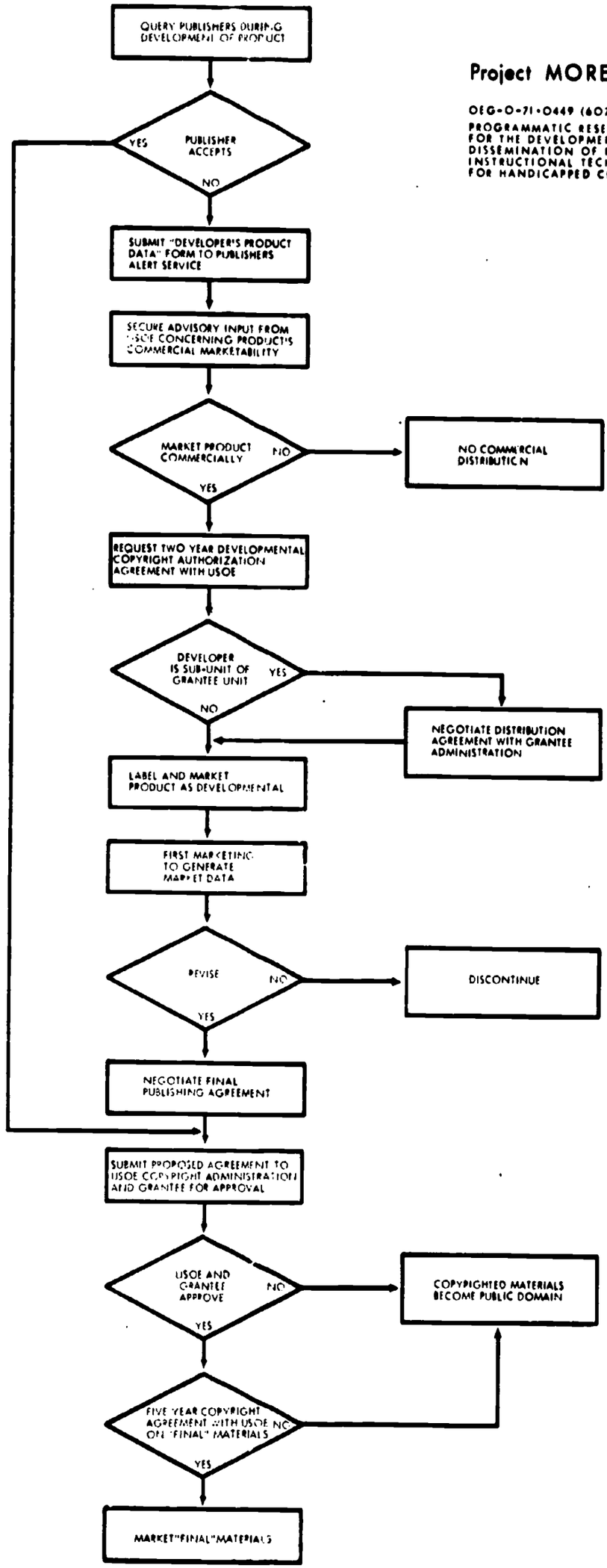
APPROVAL FOR DISSEMINATION: FLOW CHART

Lent (4)

Project MORE

OEG-0-71-0449 (607)

PROGRAMMATIC RESEARCH FOR THE DEVELOPMENT AND DISSEMINATION OF IMPROVED INSTRUCTIONAL TECHNOLOGY FOR HANDICAPPED CHILDREN



This page was set aside to carry the distribution agreement between the grantee organization and a potential distribution agent, but that agreement is just now being finalized and approved. After the first week in December, it will be available in its final form.

5. CAPITAL EQUIPMENT ACQUISITIONS

Docuflex 35 camera system with reprovit 35 reproduction stand (316791), $3,360.00
Bowens Illumitran (#98,770), $416.00

The following items of replacement equipment were also purchased:

Lady Sunbeam Service Hairdryer (HD-E), $22.97

Brother--Mademoiselle Electric Hairdryer (HD #3700), $22.97

IBM typehead (tri-lingual element for Selectric typewriter), $18.00

Two microphones for tape recorders, $5.00 each

Bell and Howell Tape recorder (#2394B), $49.95

Ross tape recorder (#8295), $49.00

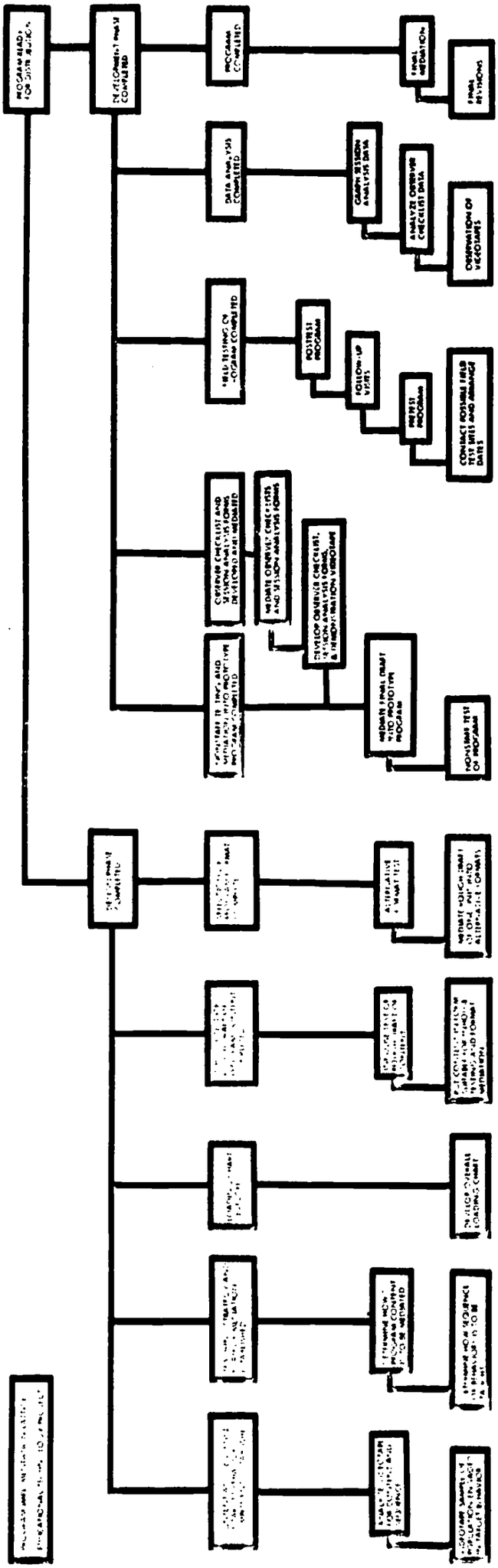
Four Penncrest tape recorders (Model #6523), $25.00

The Program Implementation Lattice, shown in Graphic (6)1, prescribes eleven points at which data is collected. The data collection activities at these points range from such sophisticated procedures as the conversion of videotapes to raw data and, consequently, assessing the reliability of that data to less sophisticated procedures such as tabulating the frequency at which specific behaviors occur across subjects. This section will review data collection activities as outlined in the Program Implementation Lattice according to the following sequence:

1. ANALYZE VIDEOTAPE FOR CONTENT AND SEQUENCE
2. DEVELOP OVERALL LOADING CHART
3. ALTERNATIVE FORMAT TEST
4. IN-HOUSE TEST ON ROUGH DRAFT
5. NONSTAFF TEST OF PROGRAM
6. PRETEST PROGRAM
7. FOLLOW-UP VISITS
8. POSTTEST PROGRAM
9. OBSERVATION OF VIDEOTAPES
10. ANALYZE OBSERVER CHECKLIST DATA
11. GRAPH SESSION ANALYSIS DATA

Graphic (6)1

Lent (6)



ANALYZE VIDEOTAPE FOR CONTENT AND SEQUENCE. Videotapes of nine retarded individuals performing the target behavior are converted into nine lists of behaviors contributing to the target behavior. Videotapes or personal reports of three non-retarded individuals are converted into three lists of behaviors contributing to the target behavior. This data is organized into 1) a list of behaviors performed by the retarded individuals and the frequency of the behaviors across the nine subjects, and 2) a list of behaviors performed by the non-retarded individuals and the frequency of the behaviors across the three subjects. These two lists are combined to form the sequential listing of behaviors representing the steps involved in performing the target behavior (see Graphic (6)2).

DEVELOP OVERALL LOADING CHART. A chart is prepared which lists the steps of the implementation lattice on the left hand margin and the project days across the top (see Graphics (6)3 and (6)4). The number of project days that will be required to complete each step of the implementation lattice is estimated. Data in the form of actual number of days required to complete the step is compared to the estimated days. When the actual number of days necessary to complete a step exceeds number of days estimated, the reasons for the discrepancy are analyzed to determine possible ways in which the efficiency of program development can be improved.

ALTERNATIVE FORMAT TEST. Media Support Services prepares as many as three alternative formats which are shown to a sample of institutional and project personnel. Data, such as their preferences and misunderstandings, is recorded and these responses are reviewed by the program supervisor and research assistant(s). One format or selected portions of two or more formats are selected as the model for a prototype program.

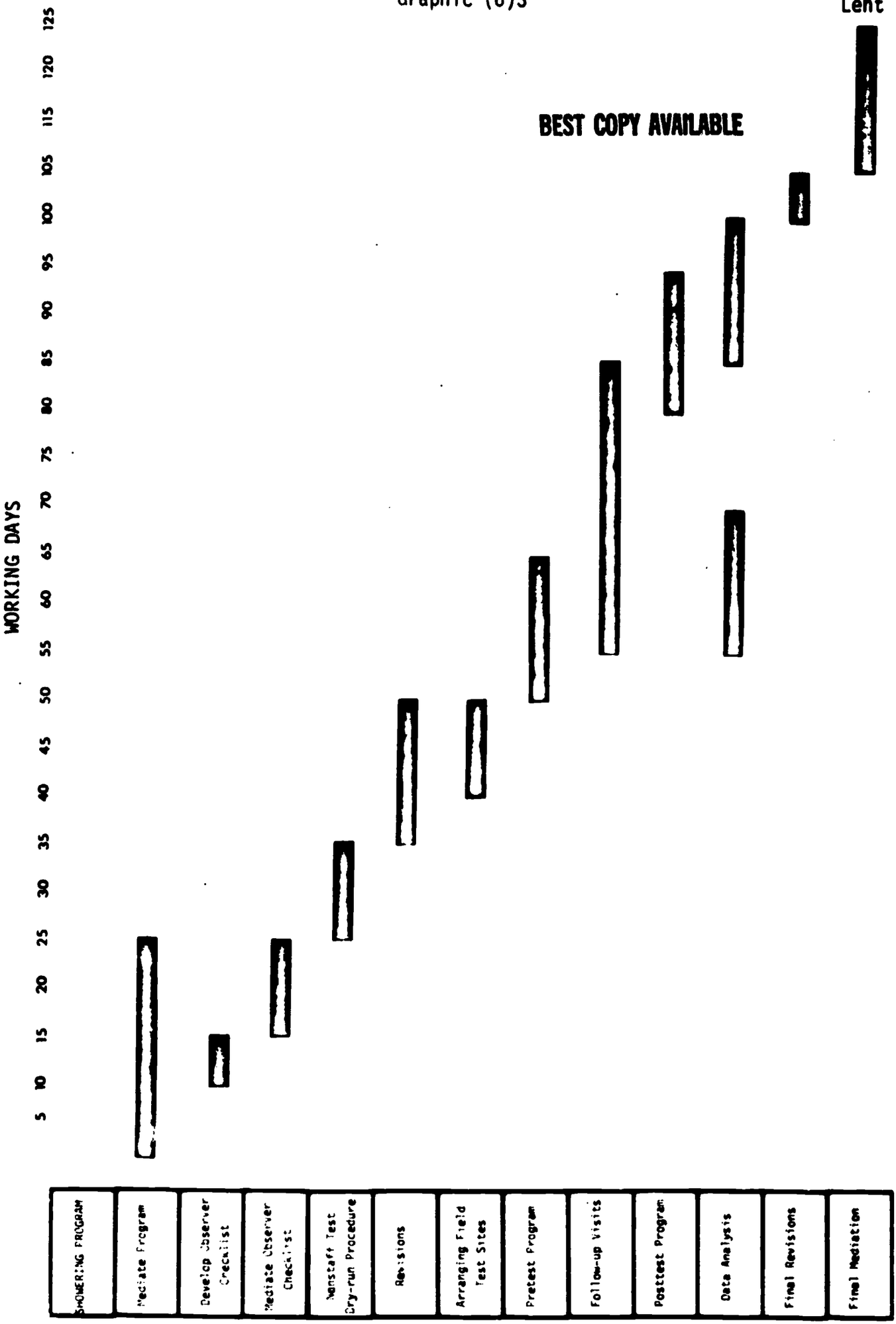
The subjective nature of this type of data collection has led to the decision to develop a more objective data collection procedure. In the future, a list of variables crucial to effective presentation of the content of a program will be listed and a rating scale devised to enable a more objective decision on format selection.

OBSERVER CHECKLIST FEMININE SHAVING PROGRAM	LOWER RIGHT LEG	LOWER LEFT LEG	UPPER RIGHT LEG	UPPER LEFT LEG	LEFT UNDERARM	RIGHT UNDERARM
1. Puts razor blade in razor or changes blade						
2. Draw a pan (or tub) of warm water by adjusting hot and cold faucets						
3. Wets washcloth prior to applying it to:						
4. Wrings excess water from washcloth (not required if in tub)						
5. Applies water (with wet washcloth) to:						
6. Applies soap to:						
7. Rubs hands on soap working it into a lather						
8. Shaves by:						
a. holding razor with correct grasp						
b. holding razor at correct angle to skin						
c. maintains proper pressure on razor						
d. taking short careful strokes (3 inches or less)						
e. rinsing razor after each 5 to 10 strokes						
9. Tests for smoothness after shaving skin						
10. Rinses skin						
11. Dries all skin areas after shaving of all leg and underarm areas is complete						

Put a ✓ beside each behavior performed by the student without assistance.

Graphic (6)3

Lent (6)



IN-HOUSE TEST OF ROUGH DRAFT. At least three subjects are administered the program using the rough draft. Pre- and posttest videotapes are converted to data using a preliminary observer checklist (see Graphics (6)5 and (6)6). In addition, the research assistant completes a data sheet at each session and the acquisition of the behaviors as they are taught in each unit over the sessions is plotted. This data is used to revise and strengthen the program steps prior to the preparation of the prototype program.

NONSTAFF TEST OF PROGRAM. At least two nonstaff trainers use the rough draft of the program to teach a minimum of three subjects a prescribed behavior. Pre- and posttests are performed on each subject and converted to data. A research assistant completes a session data sheet showing the acquisition over each session of the behaviors taught by each unit (see Graphic (6)7). The research assistant also scores the trainer's performance in following the program. In this manner data is provided to revise both the content of the teaching strategy and the manner in which information pertaining to verbal and nonverbal teaching actions is presented to the trainer.

PRETEST PROGRAM. The data at this point is the actual videotapes of the pretest. The procedure for conversion of the videotapes into data is presented in OBSERVATION OF VIDEOTAPES.

FOLLOW-UP VISITS. During a follow-up visit each trainer is observed conducting a session. The trainer is scored on errors in following the program by an observer using a session data sheet. The across follow-up visits data is used to determine the extent to which the trainer followed the program.

POSTTEST PROGRAM. As in pretesting, the data collected is the actual videotapes of the posttests.

OBSERVATION OF VIDEOTAPES. At this point videotape records are converted to data. The pre- and posttests of the first four subjects are all reviewed by four independent observers according to predetermined random order.

SHOWERING (BATHING) PROGRAM DATA SHEET

Student's Name _____

Date _____ Session Number _____

Observer _____

Field Test Site _____

Put a √ beside each behavior performed by the student during the "WET RUN."

_____ Put soap on washcloth

Face
_____ Forehead
_____ Right cheek
_____ Left cheek
_____ Chin
_____ Nose

Ears
_____ Right ear inside
_____ Right ear behind
_____ Left ear inside
_____ Left ear behind

Neck
_____ Neck right side
_____ Neck back
_____ Neck left side
_____ Neck front

Shoulders
_____ Right shoulder
_____ Left shoulder

_____ Chest

Arms
_____ Right arm underside
_____ Right arm back and elbow
_____ Left arm underside
_____ Left arm back and elbow

Sides
_____ Right side
_____ Left side

Back
_____ Top right portion
_____ Top left portion
_____ Lower portion
_____ Rectal area

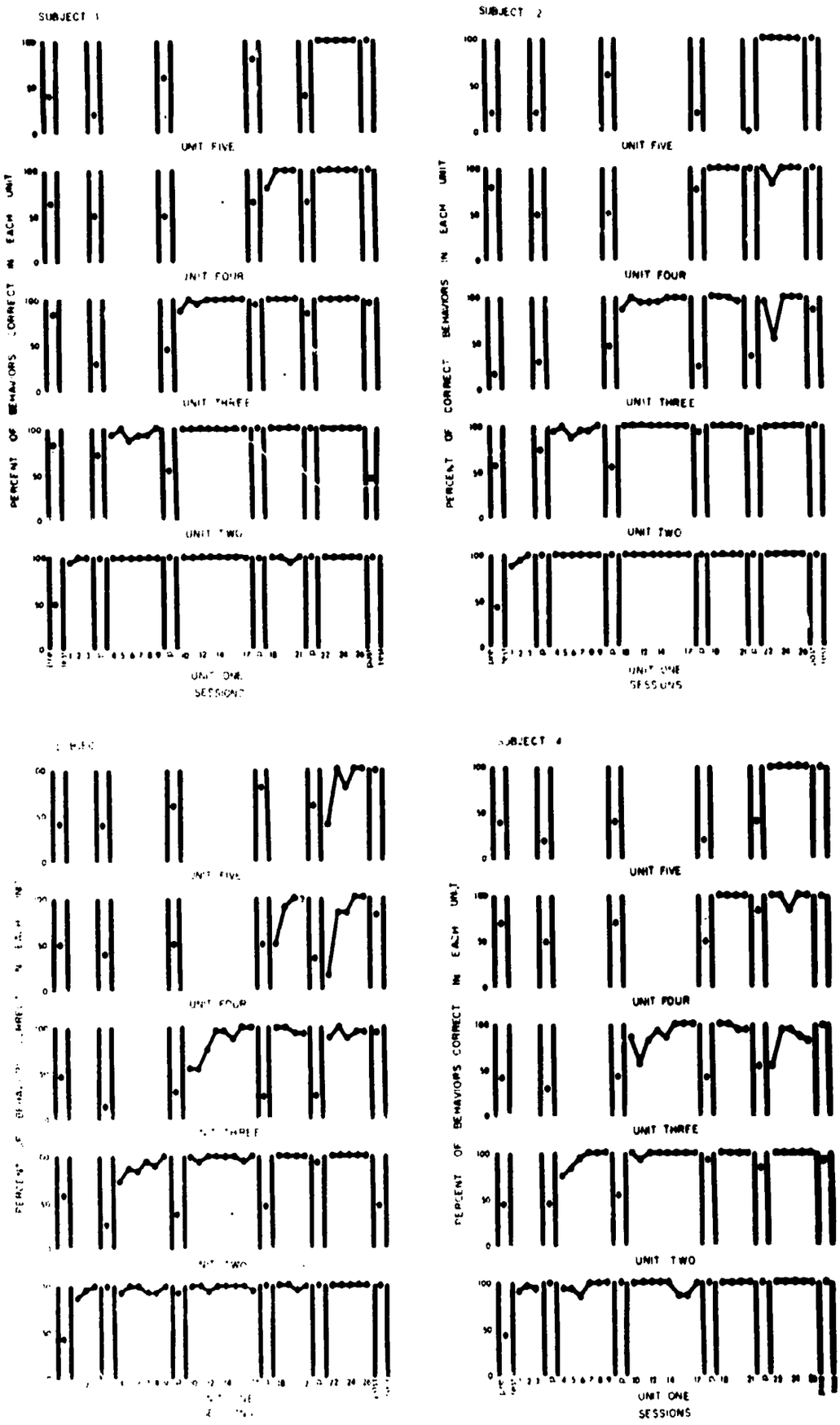
_____ Stomach and genital area

Hips
_____ Right hip side
_____ Right hip back
_____ Left hip side
_____ Left hip back

Legs
_____ Right leg front
_____ Right leg back
_____ Right knee
_____ Left leg front
_____ Left leg back
_____ Left knee

Feet
_____ Right heel
_____ Toes right foot
_____ Bottom right foot
_____ Top right foot
_____ Left heel
_____ Toes left foot
_____ Bottom left foot
_____ Top left foot

IN-HOUSE DATA: EATING ETIQUETTE PROGRAM



UNIT ONE	TE	CIRCLE WHAT HAPPENED			
1. You comb the tangles out of your hair.		Student combed out tangles beginning at the nape. Combed through hair to the ends.	Teacher explained a second time and/or guided the student's hands.	Student given a third try, performed successfully, and teacher went on to next step.	Student given a third try, did not perform successfully and teacher went on to next step.
Comb the crown hair downward.		Student combed out tangles from the back and crown combing hair downward.	Teacher explained a second time and/or guided the student's hands.	Student given a third try, performed successfully, and teacher went on to next step.	Student given a third try, did not perform successfully and teacher went on to next step.
and the top hair forward		Student combed out tangles from the sides and top, combing hair forward.	Teacher explained a second time and/or guided the student's hands.	Student given a third try, performed successfully, and teacher went on to next step.	Student given a third try, did not perform successfully and teacher went on to next step.
2 You apply some setting gel to your hair		Student dipped fingertips of right hand into setting gel and scooped out approximately 1/4 to 1/2 tablespoon of setting gel.	Teacher explained a second time and/or guided the student's hands.		
		Student applied half of setting gel to left hand.	Teacher explained a second time and/or guided the student's hands.		
		Student used both hands to work gel vigoriously and evenly into hair.	Teacher explained a second time and/or guided the student's hands.		
3 You recomb your hair. Comb the crown hair downward and the top hair forward		Student recombed hair beginning at the nape. Combed through hair to the ends.	Teacher explained a second time and/or guided the student's hands.	Student given a third try, performed successfully, and teacher went on to next step.	Student given a third try, did not perform successfully and teacher went on to next step.
		Student recombed back and crown combing hair downward.	Teacher explained a second time and/or guided the student's hands.	Student given a third try, performed successfully, and teacher went on to next step.	Student given a third try, performed successfully, and teacher went on to next step.
		Student recombed top and sides combing hair forward.	Teacher explained a second time and/or guided the student's hands.	Student given a third try, performed successfully, and teacher went on to next step.	Student given a third try, did not perform successfully and teacher went on to next step.
4 Watch me roll your hair.		Student observed teacher rolling her hair.	Teacher had to tell student to watch her a second time.	Teacher had to tell student to watch her a third time.	Teacher had to tell student to watch her four or more times.
5 Brush your hair starting at the nape. Brush the top hair to the side		Student brushed through her hair to the ends, brushing top hair in the direction it was rolled.	Teacher explained a second time and/or guided the student's hands.	Teacher explained a third time and faded cues.	

All possible combinations of observers are compared item by item and reliability of the observations are computed by dividing the total number of agreements by the total number of agreements and disagreements. A criterion of eighty percent agreement is used to indicate adequate observer reliability. If eighty percent agreement is not reached by one or more pairs of observers, the behavioral definitions on items of disagreement are strengthened and the observations are repeated and rescored according to the revised behavioral definitions. Reliability is recomputed and the process is repeated until all reliability figures attain eighty percent agreement or above.

On subjects 5 through 10 two observers view each pre- and posttest according to a predetermined schedule and reliability is computed. If the reliability of these observations attains eighty percent agreement or above, one observer views the videotapes of subjects 11 through 26 with reliability measures taken on one of each set of four videotapes. If reliability is below eighty percent, the behavioral definitions are strengthened and the videotapes of subjects 5 through 10 are rescored. When observer reliability reaches eighty percent agreement or above, the predetermined schedule of observations for subjects 5 through 10 is repeated on subjects 11 through 16.

ANALYZE OBSERVER CHECKLIST DATA. At this point the data collected during OBSERVATION OF VIDEOTAPES is used. One data sheet for the pretest and one data sheet for the posttest on each subject is selected in the following manner:

a) on subjects 1 through 4 one data sheet is randomly selected from the pair of observers with the highest reliability on the pretest and from the pair with highest reliability on the posttest;
b) on subjects 5 through 10 one data sheet is randomly selected from the two data sheets on the pretest and one is randomly selected from the two data sheets on the posttest for each subject;
c) for the remaining subjects there is one reliability check on each block of four subjects. On those subjects where reliability checks were made, one of the two data sheets is randomly selected to use for computational purposes.

This data is used to determine the significance of change on the total program and the significance of change on each item in the program. Those items that do not change significantly are revised on the basis of the nature of the change exhibited from pre- to posttest.

GRAPH SESSION ANALYSIS DATA. The number of behaviors acquired and the rate at which they were acquired over sessions is used to make decisions on possible program revisions (see Graphic(6) 6)

7. OTHER ACTIVITIES

The assistant director made two Project related presentations at the Columbus Behavior Modification Workshops in Columbus, Ohio, October 22-24.

Project MORE products were exhibited at the Regional AAMD Convention at Hot Springs, Arkansas, October 10-13, and at the 5th International Congress on Mental Retardation in Montreal, Canada, October 2-6.

The Project Director discussed Project MORE activities at the Nashville Conference, Nashville, Tennessee, September 20-22.

The Assistant Director and the Research Associate discussed the utilization of Project MORE products at the Memphis School for the Mentally Retarded in Memphis, Tennessee, September 6-8.

A Post-Doctoral Trainee working with Project MORE discussed his work in conjunction with Project MORE activities at the Psychology Colloquim Series, Kansas State University, Manhattan, Kansas, September 21.

The following publications have stemmed from Project MORE activities during this grant year:

Ferneti, C. L., J. F. Holvoet, J. R. Lent, I. Keilitz, and D. J. Tucker. Direction Following of Retarded Adolescents as a Function of Verbal Rehearsal. Working Paper #283. Parsons Research Center, Parsons, Kansas, 1972.

Lent, J. R., J. F. Holvoet, C. L. Ferneti, I. Keilitz, and D. J. Tucker. Direction Following of Retarded and Nonretarded Adolescents. Working Paper #280. Parsons Research Center, Parsons, Kansas, 1972.

Keilitz, I., D. J. Tucker, and R. D. Horner. Increasing Mentally Retarded Adolescents' Verbalization About Current Events. Working Paper #278. Parsons Research Center, Parsons, Kansas, 1972.

Horner, R. D. Multiple Probe Technique: A Variation of the Multiple Baseline. Parsons Research Center, Parsons, Kansas, in press.

Horner, R. D. and J. R. Lent. Field Trials of Procedure for Teaching Hair Rolling to Moderately Retarded Females. Parsons Research Center, Parsons, Kansas, in press.

Keilitz, I., Attention: general or selective. Perceptual and Motor Skills, Missoula, Montana, in press.

McLean, James E., David E. Yoder, and Richard L. Schiefelbusch (Barbara M. McLean, editor). Language Intervention with the Retarded: Developing Strategies. University Park Press, Baltimore, 1972.

Lent, J. R., Michael Dixon, R. L. Schiefelbusch, and Barbara M. McLean, "The Hansons," in Case Studies in Mental Retardation.. Wm. C. Brown Co., Dubuque, Iowa, 1972.

8. STAFF UTILIZATION

The implementation system continued to provide for effective utilization of staff personnel in program design and development. The staff remained divided into project teams, with one or more programs under the supervision of either the Project Director, Assistant Director, or Research Associate. In addition to program development, the efforts focused on (1) contacting possible field-test sites, (2) arrangement of dates, (3) pretesting of programs, (4) follow-up visits, and (5) posttests of programs. This arrangement of field testing and program evaluation limited Project MORE staff contact with and control of field-test site target population and training staff to pretest sessions, follow-up visits, and posttest sessions. Various members of the staff, one person per field-test site, were utilized in field testing.

The proposed extensive involvement of PSHTC and its University Affiliated Facility in field testing and validation of Project MORE programs will involve less travel but more observation and data gathering. In addition to pretest and posttest monitoring, more staff time will be devoted to the monitoring of daily training sessions, a procedure heretofore prohibited by cost and distance. The increase in staff utilization in this endeavor will be well worth the return in terms of valid, reliable training-session data.

In the last quarter, Project MORE and its staff have served in a training capacity for students and other professionals. The demand for this training has paralleled the growth of the staffs' competence in program development and implementation for the mentally retarded.

Ingo Keilitz, post doctoral trainee for the University of Kansas, has been working under the supervision of Dr. James R. Lent and with the Project MORE Staff. During his tenure with the Project, Dr. Keilitz has made several research contributions to the ongoing activities of Project MORE. In one study (Keilitz, Tucker, and Horner, 1972) antecendent and consequent conditions that influence complex verbal behavior in instututionalized mentally retarded adolescents was investigated.

In another recent study, Keilitz (with Lent, Holvoet, Ferneti, and Tucker, 1972) investigated the direction-following of retarded and nonretarded adolescents.

The final task completed by Keilitz during the grant year comprises a theoretical statement dealing with general and selective attention theories.

Norma Blankenship, Special Education Practician student from the University of Kansas, was with the Project MORE staff for six weeks under the supervision of Dr. James R. Lent. In addition to her responsibilities in teaching a class of moderately retarded adolescent girls, Miss Blankenship also made important contributions to the Project by:

(1) Determining the extent to which programmed materials can be incorporated in a daily teaching curriculum; and

(2) Assessing the limitations of teaching the Hair Rolling Program to a group, as differentiated from one-to-one instruction.

Finally, in the last quarter, both the Assistant Director, the Research Associate, and the Media Personnel, have served as faculty members and lecturers in Hospital In-Service Training Programs (HIST) and a University Affiliated Facility (UAF) course entitled "Comprehensive Survey of Mental Retardation."

9. FUTURE ACTIVITIES PLANNED FOR NEXT REPORTING PERIOD

Discussion of future activities and proposed budgets may be found in the Continuation Proposal of 12/1/72, transmitted with this Report.

1. MAJOR ACTIVITIES AND ACCOMPLISHMENTS

Major activities and accomplishments during the grant year have covered five broad categories: (1) Stimulus Shift Generalization Program; (2) Phoneme Boundary Program; (3) Parent-Aide-Paraprofessional Instructional Program; (4) Response Development Program; and (5) establishment of reliabilty on the foregoing. Generally, the activities pertained to refinement and validation of procedures, development of a training procedure for support personnel, manual refinements, film-scripting, and statistical treatment of accumulated data. These activities are described herein.

Stimulus Shift Generalization Program

The evaluation of the Stimulus Shift procedure with public school children was terminated in May, 1972, due to the close of the academic year. The procedure used during the evaluation underwent many revisions: stimulus changes, criterion alterations, and substitution and deletion of training steps. It was found that procedural modifications used successfully with previously trained retarded children were, in many instances, not specifically effective with a public school population. As a result of the differing learning abilities of the two populations, the training strategies were separate after the independent-word training phase. The resultant modifications for public school children were placed in revised manual formats with terminology and format designed for support personnel. (Data specific to the public school program were analyzed and are discussed under Significant Findings and Events.)

A study to evaluate the modified program and the related manuals was initiated in one elementary public school in Parsons, Kansas. The therapist-data collector is a paraprofessional who has participated in the same position in earlier investigations. At the present time, 17 public school children are participating as experimental subjects. Phoneme programs being used are /th/, /l/, /s/, /ch/, /sh/, and /r/. The children are seen two or three times per week for 20 to 30 minutes per therapy session.

Additional activities related to the Stimulus Shift Generalization program involved the selection and ordering of equipment to change all slide-presented stimuli to the filmstrip medium. The present form of stimulus delivery has been functional for research; stimulus changes were

not problematical due to the relative ease of slide changing. However, portability of carousel equipment for the itinerant speech therapist is a major consideration for program acceptance, thus the substitution of filmstrip-presented stimuli. Consultations with Media personnel resulted in the ordering of the equipment necessary for the transition.

Further accomplishments in the Stimulus Shift category include preparatory activities for the scripting of a pilot film to demonstrate the procedure to paraprofessionals. Consultation with the Media staff led to the following component parts of the instructional package.

A. Written Article:
   A presentation of the theoretical overview of the Stimulus Shift and Response Development Programs, it will be directed to a professional audience and published in a professional journal (i.e., Journal of Speech and Hearing Disorders or Journal of Speech and Hearing Research).

B. Overview Films (Two 10-minute 16mm. color films):
   Stimulus Shift: A presentation of the basic components of articulation therapy, to include (1) identification and evaluation of errors, (2) role of the paraprofessional, and (3) role of the professional. This film will be directed to a paraprofessional audience and will be shown by a professional. Response Development: A presentation of the basic components and need for Response Development therapy, the present plans include the direction to be to a professional audience.

C. Parent-Aide-Paraprofessional Manual. The manual will be a presentation of written information with a supplementary audio-tape to train supportive personnel to make accurate and consistent phoneme judgments and will provide information about the Stimulus Shift Generalization program.

D. Procedural Films (Two 15 minute 16mm color films). Each film (Stimulus Shift and Response Development) will describe the basic training steps of the procedures. The Stimulus Shift film will be directed toward a paraprofessional audience while the Response Development film will be directed toward a professional audience. Both films will be therapist/child oriented.

E. Procedural Manuals. Seven manuals for the Stimulus Shift Generalization Program have been developed. The procedure remains constant with separate manuals for each of the following phonemes: th, s, l, r, sh, ch, k. Six manuals have been developed for the Response Development program. They are created to train sh, s, k, l, r, and Oral Awareness and Tongue Control.

Due to the probable need for changes after evaluation of each of the films in the package, it was decided to make pilot films on videotape, subject the videotaped material to field test evaluation, then reshoot on 16mm color film. Such a procedure will minimize experimental costs and will result in a more accurate film package.

In a course parallel to that of the evaluation of the Stimulus Shift Generalization procedure with public school children, appraisal of the procedure continues with a small (N=8) population of retarded children. The Stimulus Shift procedure has been modified extensively to promote phoneme generalization to situations outside the clinical setting. At this writing, phoneme performance on the program occurs at high levels of correctness; these levels do not generalize, however, to settings which are untrained. The Project staff has made a number of program modifications to enhance the generalization process; these modifications include alterations of stimuli, reinforcement schedules, and criteria. The modifications also include a decrement of the number of therapy sessions per week from five to three meetings. These modifications are currently being investigated.

Phoneme Boundary Program

To quickly review, Phoneme Boundary training became necessary when a child overgeneralized correct production of the phoneme being trained to words calling for correct production of the previously substituted phoneme. For example, a child who substituted the phoneme /th/ for the phoneme /s/ would say the word *thun* for the word *sun*. After training the child to use the /s/ phoneme correctly in words in the initial position, he would say *sun* using the /s/ correctly, but he may also use the /s/ for the /th/ in the word *thumb*, hence *sumb*. The child has confused the boundaries that distinguish the /th/ from the /s/. While the occurrence is common in phonological training, effective systematic procedures are not common. The programing principle involves training the

child to discriminate through verbal production between the substituted phoneme and the trained phoneme.

Originally, our procedures called for Phoneme Boundary programing within the structures of the Stimulus Shift Generalization Program. The training involved discriminative verbal responding between the two phonemes (trained-versus-previously-substituted) using the Stimulus Shift procedure. Research with this procedure revealed that (a) different children have different phoneme substitutions and, therefore, different over generalization patterns and (b) over generalization often occured at the sentence configurational levels of training.

Consequently, the Phoneme Boundary programs have been written in separate manuals from those of the Stimulus Shift. Seven programs were written, one for each of the Stimulus Shift training programs. Each program contrasts the training phoneme with a number of commonly substituted phonemes. The contrasted phonemes are trained in the initial position in words and in all three sentence configurations (as per the Stimulus Shift program). Correct responses are those in which overgeneralized phoneme production does not occur. In the event that the child does not produce a phoneme correctly (other than the phoneme being trained on the Stimulus Shift program) the production is judged as correct as long as that response is not an overgeneralized response.

The seven discriminative Phoneme Boundary programs are:

(1) /s/ contrasted with /th, sh, t, d/
(2) /th/ contrasted with /f, s, d, t/
(3) /l/ contrasted with /w, j, d/
(4) /r/ contrasted with /w/
(5) /sh/ contrasted with /th, s, ch, t/
(6) /ch/ contrasted with /t, sh, s/
(7) /k/ contrasted with /t/

These programs, in manual form, are being evaluated in the public schools and with retarded, institutionalized children.

Parent-Aide-Paraprofessional

Due to the lack of qualified personnel in the immediate public school area, a large number of public school children requiring remediation services of a speech pathologist were not being treated. Numerous parents called the Project office requesting speech services, but,

due to the lack of funding and increased therapy caseloads, the parent's request could not be filled. A likely solution to the problem appeared to be (a) the utilization of paraprofessional (i.e., teacher or counselor) staff, under the supervision of a clinically certified speech pathologist to relieve the large caseload of the speech pathologist; (b) the utilization of parents under the supervision of the speech pathologist in the treatment of articulation irregularities of their child; or (c) the use of public school aides under the supervision of the speech pathologist in the remediation of articulation problems of children in the public schools.

Previous research already reported indicated that the most significant area of concern when dealing with the use of paraprofessional staff for articulation therapy is that of the inability of these persons to make accurate and consistent phoneme judgments. It was noted that, separate from the training program, phoneme judgment accuracy and consistency was the key to successful termination of therapy. For this reason, a Parent-Aide-Paraprofessional (PAP) manual was written. The manual, accompanied by cassette tapes for the delivery of stimuli is divided into two sections: (1) practice and performance for making phoneme judgments and (2) information about the Stimulus Shift Generalization training program.

The PAP program is presented in a manual format. The entire package for the pilot evaluation of the program was mediated by the Media staff of Project MORE. The pilot project was evaluated with five adults undergoing training on the federally funded Hospital In-Service Training program. (The results of the pilot project are discussed under Significant Findings and Events).

Response Development Program

Major Activities and Accomplishments for the Response Development component have been revisions of the pilot programs according to the needs of the pilot subjects; these revisions were subsequently written in and mediated by the Media component of Project MORE. Completion of these activities have allowed the staff to initiate the formal study in the public schools and continuation of the formal study with the mentally retarded subjects.

Generally stated, the Response Development programs are designed to

train a subject who was unable to imitate the production of a specified phoneme in words, to produce the sound in words under echoic stimulation of the therapist or until the subject met criterion for entry into the Stimulus Shift Generalization program: 30 percent stimulability in the initial position in words. The programs are designed to teach the sound in isolation (if needed), nonsense syllables in final, medial, and initial positions, and in production of words under echoic control of the therapist. From data gathered in a pilot study, it was found there was need for the revision of existing programs (see Significant Findings and Events).

Response Development program manuals were written for the following phonemes: ch, r, s, l, k, sh and Oral Awareness and Tongue Control. The manuals consist of: 1) objectives for each step in the program, 2) stimulus guides which directed the therapist in what to do to obtain 3) the response or the action of the subject, 4) reinforcement procedures which explained the action of the therapist after the subject's response, and 5) criterion levels which indicated when the subject had completed or failed the step along with direction for the next step. These programs were processed by Media personnel.

The formal study is being conducted with public school subjects from one public school in Parsons, Kansas, and with mentally retarded residents of Parsons State Hospital and Training Center.

Reliability

Due to a procedural error, reliability for the evaluation of the Stimulus Shift and Phoneme Boundary programs was not obtained for the academic year 1971-72. To obtain a measure of reliability for the data gathered over that period, all involved personnel were asked to participate in a reliability evaluation. Seven staff members participated. The procedure involved each member in the evaluation of phonemic responses of three retarded subjects on an audiotape. Individually, the staff members evaluated each child's responses on an articulation test (the Goldman-Fristoe Test of Articulation) and in conversation.

The data collected from the evaluations were analyzed to determine the reliability of judgments made by this Project's personnel during the evaluation and therapeutic processes. (These data are reported in Significant Findings and Events).

2. PROBLEMS

Four problems were encountered during the past experimental year:

(1) Lack of adequate staff to fulfill the objectives,

(2) Lack of adequate travel funds,

(3) Need for incentive funding and/or college credit, and

(4) Need for modification of program format for retarded children.

Staff

As described in an earlier progress report, the number of staff members involved in this research program over the past year proved inadequate for efficient and effective management of the various programs under investigation. Figures 1 and 2 describe the approximate number of hours expended per program per staff member. The sum of the approximate hours expended (Figure 2) illustrates the over-extension of time for some staff members. The solution to the problem could be found by either (a) increasing the staff to include one additional professional and one additional paraprofessional or (b) decrease involvement in or number of committed projects.

With the impending staff changes (see Staff Utilization), the Project staff has decided to restrict its activities to the validation of only the Stimulus Shift Generalization Program (with the Phoneme Boundary Program component) with public school children during the forthcoming grant year. The change-in-activity strategy was seen as a solution to the problem of involving new staff members coupled with the previously mentioned short-staff problem. (See Future Activities section for further discussion.)

Travel

The present travel allotments have not met the needs of the Project staff during the past experimental year. Travel monies, used for consultant travel, were quickly depleted. Future funding should include increased allotments to allow for:

a) consultant travel,

b) field test site travel, and

c) public school travel.

FIGURE I

APPROXIMATE NUMBER OF HOURS PER WEEK
EXPENDED PER PROJECT PER STAFF MEMBER

PROJECT	APPROXIMATE EXPENDED HOURS PER WEEK
STIMULUS SHIFT	0 10 20 30 40
1. Public School	W G M R*
2. Filming	R
3. Manuals	W R
4. Retarded	R W
5. Filmstrip	RW
6. Presentations (Oral, Written)	WR
7. Misc. (Clinic Responsibilities)	M W G
RESPONSE DEVELOPMENT	
1. Public School	R BS
2. Manuals	W RS
3. Retarded	R BS
4. Presentations (Oral, Written)	WRS
5. Misc. (Clinic Responsibilities)	B S

*R=Raymore
S=Shackelford
W=White
G=Gorman
M=McKenna
B=Bayless

FIGURE 2

APPROXIMATE TOTAL NUMBER OF
EXPENDED HOURS/WEEK/STAFF MEMBER

PERSONNEL	HOURS
McLean (consultant)	3
Raymore	63.5
Shackelford	44
White	48
Gorman*	23
Bayless*	23
McKenna*	25

*Part-time or Temporary Staff

Incentive

To encourage participation of professionals or paraprofessionals in field-test evaluations, incentive monies or college credit would serve as effective motivational devices. A $10-per-child incentive figure would invite participation as would the availability of college-credit hours for involvement in the training program and therapy.

Program

As mentioned under Major Activities and Accomplishments, retarded institutionalized children being trained on the Stimulus Shift Generalization program have not demonstrated sufficient phoneme generalization to allow for termination of training. While program modifications have been made, it appears that further evaluation is necessary. Further, empirical evidence suggests the presence of a universal language and phonological code with regard to retarded, *institutionalized* speech. Informal observation indicates that specific phonological training, where the goal is "normal" phoneme production in the noninstitutionalized world, teaches a secondary phonological code, secondary to the resident-preferred production in the institutionalized setting. While these observations have not been subject to formal evaluation, the phenomenon suggests a possible rationale for the lack of situational carry-over with the institutionalized child. Normal children, exposed environmentally to "normal" phonological production in the home and at school, demonstrate effective carry-over; these children are not subject to the exposure of two competing codes. Institutionalized children, however, are taught the phonological code of the adult and "outside" word and are taught to carry this production over to the institutionalized environment where a separate phonological code prevails with peers.

A possible solution to the problem would be to involve the institutionalized, retarded child in training on the resident site or a cottage. Training would be done with a number of children in the same cottage with minimal participation of cottage supervisory personnel in the program. In effect, the hypothesis could be stated as follows: by stimulating correct phoneme production in the cottage environment, the adult code (or secondary code as it pertains to the institutionalized, retarded child) would take on new reinforcing properties that would assist in the carry-over process. Later, cottage supervisory personnel might participate as therapists, thereby encouraging further reinforcement for correct phoneme production.

3. SIGNIFICANT FINDINGS AND EVENTS

The following section will discuss the findings and events of this Project's involvements for the grant year. The discussion will include information about the following projects: (1) results of Stimulus Shift Generalization public school study, (2) reliability, (3) Phoneme Boundary Program, (4) Parent-Aide-Paraprofessional Program, and (5) Response Development Program.

Public School Study

During the 1971-1972 academic year, public school children participated in the evaluation of the Stimulus Shift Generalization Program. The procedure used was described in earlier reports. The following is a brief discussion of the results of the evaluation. The discussion will be divided into four sections: (1) subjects and termination, (2) children trained on two phonemes, (3) specific phoneme effects, and (4) time differences. It must be noted that mean ($\bar{x}$) scores are used to describe the data. (All raw data are shown in Appendix A.)

Subjects and Termination

The total number of children who participated in the evaluation was thirty-two. All children were enrolled in three elementary schools in Parsons, Kansas, and ranged in grade placement from kindergarten to fourth grade. Of these thirty-two subjects, six subjects were trained on two phonemes bringing the total of therapy programs presented to thirty-eight. Subjects on twenty-three phoneme training programs reached or surpassed the termination criterion (96 percent correct phoneme production in spontaneous conversation); expressed differently, 62.5 percent of the subjects demonstrated complete carry-over of the training phoneme to conversation.

Carry-over at the 90 percent or better level (inclusive of the 96 percent figure) occurred with subjects on thirty-one programs. The percentage of carry-over at the 90 percent level is 81.6 percent. These figures indicate a general effectiveness of the Stimulus Shift Generalization program with public school children in the elementary grades. There is, however, need for further modification to increase program effectiveness. Presently, a revised program is being evaluated.

Of the thirty-two subjects and thirty-eight programs involved in the 1971-1972 study, seven subjects did not reach the termination criterion. All seven participated in the study until the close of the school year. If these subjects had been able to continue training, the termination criterion would have been realized.

Children Trained on Two Phonemes

When six of the subjects reached the termination point in the program, they were given additional training on a second phoneme. All six subjects demonstrated carry-over of the trained phonemes to conversation at the 90 percent or above level. All children demonstrated a decrease in needed therapy time from training time on the first phoneme to that of the second phoneme. The mean decrement in time was 3 hours and 40 minutes. Also, all six subjects were shown to improve their general articulation score, when given the Goldman-Fristoe Test of Articulation (GFTA), by a mean of 21.8 percentage points. The following table indicates the phoneme combinations and mean score increments:

TABLE 1

Number of Subjects, Mean Percentage of Score Increase on the Goldman-Fristoe Test of Articulation (GFTA) Before and After Training, and the Phoneme Combinations Trained

N	GFTA	COMBINATION
1	21%	ch and l
1	20	ch and l
1	23	ch and s
1	17	ch and s
1	13	f and l
1	37	l and sh

The above scores indicate articulatory profile improvements at significant levels.

Specific Phoneme Effects

The following section will discuss specific phonemes as they were ranked according to (a) 96 percent criterion, (b) 90 percent criterion, (c) therapy time, and (d) Goldman-Fristoe Test of Articulation. Table 2 illustrates the percentage of subjects/programs meeting the 96 and 90 percent criterion levels.

TABLE 2

Ranking of Phoneme Programs
(With Number of Subjects) at the
96 Percent and 90 Percent Levels of Termination

96% Termination Level			90% Termination Level		
Phoneme Ranking	Total N	% Meeting Criterion	Phoneme Ranking	Total N	% Meeting Criterion
r	2	100	r	2	100
f	1	100	f	1	100
l	9	77.7	ch	8	87.5
ch	8	62.5	s	14	85.7
sh	4	50	l	9	77.7
s	14	49.9	sh	4	50

Criterion Levels

The information shown in Table 2 indicates the order of criterion demonstration for the six phonemes involved in the study. It can be seen that while many of the subjects did not reach the 96 percent termination criterion on the /ch/ and /s/ phonemes, a majority of the subjects trained on these two phonemes did reach phoneme correctness levels of 90 percent or above. The table also provides a view of a ranking order with regard to success of phoneme acquisition, however, due to the small number of total subjects per phoneme program, the significance of the ranking requires further validation.

Therapy Time

Table 3 illustrates the mean length of therapy required for each phoneme program. The phonemes are ranked from the least to the most therapy time needed.

TABLE 3

Ranked Order of Phoneme Programs
With Total Number of Participating Subjects
According to Mean Length of Therapy

Phoneme	Total N	$\bar{x}$ Time
s	14	9'01"
r	2	9'20"
ch	8	9'37"
sh	4	10'40"
l	9	11'04"
/f/ Phoneme Excluded (Only 1 subject at 4'10")		

The mean length of therapy for all subjects on all programs was 9 hours and 10 minutes. Table 3 shows that training on the /s/ phoneme required less time while that of the /l/ phoneme required the most therapy time. The /f/ phoneme was not included in the ranking because only one subject trained on the program; however, it is interesting to note the comparatively short length of training needed. It must be mentioned that the subject involved in the /f/ program had previously been trained on the /l/, therefore, the length of time is related to previous involvement with the procedure.

Goldman-Fristoe Test of Articulation

The information included in Table 4 indicates the ranking of phonemes according to influence on each subject's articulatory profile as determined by the Goldman-Fristoe Test of Articulation.

TABLE 4

Mean Percentage Increments on the
Goldman-Fristoe Test of Articulation
and Ranking of Phonemes in Terms of Increments

Total N	Phoneme	% Increments
5	l	12.20
12	s	11.33
4	ch	9.25
2	r	7.5
3	sh	3

The data shown in Table 4 indicate that the subjects involved in this study, training on the /l/ phoneme had the most effect on the subjects over-all articulatory profile. Training on the /sh/ phoneme yielded the least effect on general performance on the GFTA. It is interesting to note that the /l/ phoneme is evaluated in a number of blend contexts on the GFTA, thereby allowing increased opportunities for performance. The same is true of the /s/ and /r/ phonemes; while the /s/ phoneme ranks second in the list, /r/ ranks fourth. It could be assumed that generalization of correct production of the /r/ phoneme to blends did not occur as effectively as did the /l/ and /s/ phonemes.

Time Differences

Therapy time as related to phoneme ranking was discussed earlier (Table 3). That analysis showed that the /s/ phoneme required the least therapy time while the ranking continued in order with /r/, /ch/, /sh/, and /l/. Further investigation demonstrated that female subjects, regardless of phoneme and grade, required less therapy time than males. Table 5 demonstrates the mean length of time per grade and sex.

TABLE 5

Mean Length of Therapy Time
Required for Male and Female Subjects
in Grades K-4 and Total Mean Length Per Grade

Grade	Male	Female	$\bar{x}$ Total Length
K	11'11"	12'10"	11'36"
1	10'38"	8'03"	9'34"
2	8'55"	7'14	7'43"
3	12'45"	5'33"	9'52"
4	10'33"	—	10'33"

Table 5 demonstrates that, with the exception of kindergarten female subjects, female subjects tend to require less training time than males. Table 5 also demonstrates that therapy time decreases successively in Grades K through 2, but successively increases in Grades 3 and 4.

Reliability

The reliability of the data reported herein was examined. It was assumed that judgment by different listeners of articulatory performance would not be in 100 percent agreement and that the degree of such reliability error would have an effect on the data reported. The purpose of the reliability analysis was to determine the outer limits of the effect of examiner disagreement and in turn, the effects of maximum probable disagreement on the significance of reported results. It was clear from this analysis that, although reliability may have influenced reported data, examiner error was not significant to account for the reported changes, i.e., subject improvement had to be attributed to some variable besides errors in examiner judgment. Supportive data are also available.

Phoneme Boundary Program

The program is divided into two sections: (1) training on words and (2) training on three levels of sentence complexity. All possible phoneme substitutions are included in each discriminative task, regardless of the substitution status of the child. For example, a child who overgeneralizes the production of the trained phoneme /s/ to the previously substituted phoneme /th/ will be trained to verbally discriminate between the /s/ and /th/. He will also be given exposure to three additional phonemes which might possibly be involved in the overgeneralization process, i.e., three phonemes which share similar distinctive features (place and/or manner) with the /s/ and /th/ phonemes are /t, sh, and d/.

The participating paraprofessional therapists recommend that the program be reconstructed so that the child does not train on *all possible substitutions*, but rather only the specific phoneme(s) affected by the overgeneralization process. It is the observation of the therapists that the therapy message appears to be confusing to the child under the present method.

The above modification, and others, will be analyzed and the program revised when the present investigation is completed.

Parent-Aide-Paraprofessional Program

A pilot study was designed to investigate an appropriate validation procedure for the Parent-Aide-Paraprofessional (PAP) program. Involved

in the pilot investigation were five subjects who were participating in the Hospital In-Service Training program at Parsons State Hospital and Training Center. Among the participants were an occupational therapist, psychiatric aide, nursing service representative, recreation therapist, and special education teacher.

The investigation procedure commenced with the researcher gathering pretraining or baseline information. Each participant was given a written examination to complete. The examination covered material in Part II of the PAP manual. Each subject was then asked to evaluate phonemic responses of two retarded children on the Goldman-Fristoe Test of Articulation and in conversation. All phonemic stimuli were presented on a reel-to-reel tape recorder with the speakers elevated to ear level. Each subject judged the stimulus tapes as they were presented in the following sequence:

A. Goldman-Fristoe Test of Articulation
    1. Stimuli presented twice
    2. Judge responses as correct or incorrect

B. Conversation I
    1. Listen for specific phoneme in words in conversation
    2. Record words containing the phoneme
    3. Judge production of the specified phoneme as correct or incorrect

C. Conversation II
    1. Each subject is given a list of words identified as being in the conversation samples by a speech pathologist
    2. Listen twice and make judgements regarding the correct/incorrect production status

The subjects were then given the PAP manuals and cassette tapes with instructions to spend a minimum of one-half hour daily studying the material. At the end of the two-week period. each subject was given the posttest, identical in procedure and materials to the pretest. Tables 6 and 7 show the results of the pretests and posttests.

TABLE 6

Scores on Program Evaluation of
the PAP Manual
Before and After Training
(Pilot Study)

Subject Occupation	No. Correct		Possible Correct		% Correct	
	Pre	Post	Pre	Post	Pre	Post
Occupational Therapist	24	28.5	37	37	65	77
Psychiatric Aide	13	24	37	37	35	65
Nursing Service	7.5	29	37	37	18	78
Recreation Therapist	20.5	34.5	37	37	55	93
Teacher	15.5	27	37	37	42	73

TABLE 7

Percentage of Agreement Between
Paraprofessional Personnel Before and After
PAP Training Program
(Pilot Study)

	Tape No.1			Tape No. 2		
	GFTA	A	B	GFTA	A	B
Pre-Test	43.6	29	100	61.6	32	64
Post-Test	60	70	100	56	44	48

LEGEND

Tape No. 1 = Subject A (Mild Articulation Disorder)
Tape No. 2 = Subject B (Severe Articulation Disorder)
GFTA = Goldman-Fristoe Test of Articulation
A = Identification of words in conversation/correct-incorrect
B = Judgements of conversation correct-incorrect

The results of the pilot evaluation of the PAP program revealed the following:

1. All subjects improved their scores on the program evaluation test (Table 6). The percentage of improvement ranged from 16 percent to 78 percent with a mean of 51 percent improvement. These indicate an improved knowledge of the Stimulus Shift Generalization program.
2. The percentage of agreement between all subjects was determined to be an indicator of each subject's ability to make accurate and consistent phoneme judgements (Table 7).
   a. Tape Number 1. The percentage of agreement between all five subjects showed improved agreement on the posttest on the articulation test and on the first conversation task and maintained 100 percent agreement on the second conversation task.
   b. Tape Number 2. The phonemic responses on the second tape were taken from responses made by a child who exhibited a more severe articulatory impairment than those of the child recorded on the first tape. Generally, only a minimal increase in agreement occurred on the articulation test and the first conversation task. Agreement was significantly lower from pretest to posttest situations on the second conversation task.

The results of the pilot evaluation of the PAP program indicate a need for revision of the manual material and/or the evaluation process. The PAP program appears to be effective in that general improvement occurred in most areas (excepting the second conversation task on Tape 2) for all subjects. However, modifications are necessary for further improvement and agreement.

Response Development Component

From informal data gathered in the pilot study, it was found that there was a need for further revision of the Response Development Program in order that manuals could be mediated. Specific to the programmatic needs demonstrated by the pilot subjects, stimulus modes and materials were clarified,

alternative methods were devised, and pretest, posttest, and intratraining probes were revised.

The Response Development programs used stimulus modes which employed indirect modeling cues (tactile cues, auditory cues, and visual cues). Added to the programs were most specific instructions for the use of tactile and moto-kinesthetic cues regarding the stimulation by the therapist for tongue placements for various sounds. Suggestions for the use of verbal instructional cues were included. Since specific types of errors required specific verbal instructions, the wording of the verbal instructions on certain steps were left to the therapist, but suggestions were stated in the manual. The stimulus cues were then systematically faded until the child was able to respond correctly in nonsense syllables with only the auditory and visual cues remaining. If the child was unable to meet criterion within the nonsense syllable, alternative steps were designed to train the phoneme in isolation with highly concentrated tactile and moto-kinesthetic cues. After training the target phoneme in nonsense syllables or in isolation, the subject was trained to use five different vowels (/i, ʌ, ɑ, u, æ/) in nonsense syllables with the position of the target phoneme remaining constant. Position of the target phoneme was varied; training continued until the child could produce the target phoneme in the new position with the five different vowel combinations. Training proceeded in this manner for the remaining positions. When training in all positions (initial, medial, and final) had been completed, a sequencing step for practice and production of the sound in nonsense syllables was instituted; the subject was then probed for stimulability in words in all positions. If the subject met criterion for entry into the Stimulus Shift program, he was dropped from the Response Development Program and included in the Stimulus Shift Generalization program. Subjects involved in the training program have not required echoic training on words. However, should such a need occur, the Stimulus Shift program contains training as an alternative step.

With the initiation of the formal study, more specific pretest, posttest, and intratraining probes were written. The Goldman-Fristoe Test of Articulation (GFTA) was employed in locating error phonemes and to indicate the level of stimulability. The target phoneme was then selected. If the subject was not stimulable on the GFTA, the subject was then given a pretest

in which the presentation of stimuli were arranged from most difficult to the least difficult. The procedure for presentation of pretest material is as follows: conversation (nonechoic); echoic words in initial position, medial position, and final position; randomized echoic words and echoic nonsense syllables in initial, medial, and final positions; nonrandomized echoic words in initial, medial, and final positions and nonrandomized echoic nonsense syllables in initial, medial, and final positions; and isolated echoic stimulation of the target phoneme. Words and nonsense syllables were balanced with both trained and untrained vowels to give an indication of generalization to those vowel combinations which were not trained. The posttest material was the same as the pretest and administered in the session following the completion of the last step (sequencing of nonsense syllables in initial, medial, and final positions) in the Response Development program. Intratraining probe material was the same as the pretest and posttest material with the exception of the addition of one section of words to the pretest and posttest materials. These words were added to give a larger selection of words on which to base the data. These words were not selected for trained and untrained vowels; the words were selected randomly. The intratraining probes were administered after training the phoneme in isolation, after final position training, after medial position training, and after initial position training. The pretest and posttest data will yield information which will indicate the effectiveness of the Response Development program for reaching the target behavior of 30 percent correct in initial position of echoic words. The intratraining probes were designed to give information for additional studies in the Response Development programs which may lead to an efficiency cut in the Response Development programs or the Stimulus Shift Generalization programs. The superfluity of testing is necessary for research purposes. Future programs will contain only the pretests and posttests.

Additional programs had been developed for Stimulus Discrimination of the /s/ and /sh/ phonemes and for the Establishment of Tongue-Control. The Stimulus Discrimination program has not been mediated. Mediation of this manual has been delayed until further need for assessment has been completed.

Revision of the Response Development programs, specification of stimulus modes and materials needed for the programs, and revision of the pretest, posttest and intratraining probes enabled the programs to be mediated. These manuals, unlike the Stimulus Shift manuals which were written for use by paraprofessionals, were written for the professional. More technical terms of anatomical structures and critical phoneme judgments of certain steps tended to make the use of paraprofessionals less desirable at this point in the program.

Evaluation of Data

The pilot study regarding the effectiveness of the Response Development procedure with public school children is now complete for five public school subjects and eight mentally retarded subjects. Informal data gathered during the pilot study enabled the staff to make revisions in specific programing of the training steps. From the public school subjects, data revealed that all of the subjects completed the programs and were above the stimulability criterion (30 percent stimulable in the Initial position in words) for entry into the Stimulus Shift Generalization Program (See Table 8). Data from the mentally retarded subjects showed that six of the subjects completed the Response Development Program and were above criterion for entry into the Stimulus Shift Generalization Program; one subject (H) had not yet completed training, and one subject (G) was dropped from the study due to increasing disfluencies (See Table 9).

TABLE 8

Results of Pre-Test and Post-Test
Data on Response Development Pilot
Study with Public School Subjects
(Percentage Correct Responses)

SUBJECTS	PRE-TEST							Training	POST-TEST					
	Echoic (GFTA)*				Conversation			on	Echoic Words			Conversation		
	Isolation	Words I	Words M	Words F	I	M	F	Words	I	M	F	I	M	F
A	0	0	0	0	0	0	0	No	100	100	100	7	0	10
B**	0	0	0	0	17	2	0	No	100	100	100	11	0	67
1st Phoneme C***	0	0	0	0	13	12	0	No	100	100	100	18	13	6
2nd Phoneme **	0	0	0	0	5	27	0	No	100	100	100	8	0	40
D	0	0	0	0	0	0	17	No	90	100	100	50	40	60

*Goldman-Fristoe Test of Articulation
**Sequencing step not completed due to end of school year
***Subject trained on two pnonemes

TABLE 9

Results of Pre-Test and Post-Test
Data on Response Development Pilot Study
with Retarded Subjects (Percentage Correct Responses)

SUBJECTS	PRE-TEST							Training on Words	POST-TEST					
	Echoic (GFTA)*				Conversation				Echoic Words			Conversation		
	Isolation	Words I	Words II	Words F	I	M	F		I	M	F	I	M	F
A	0	0	0	0	0	0	0	No	100	100	100	32	11	53
B	100	0	0	0	0	0	0	No	80	40	40	29	0	20
C	0	0	0	0	0	0	0	No	60	80	60	0	33	0
D	0	0	0	0	40	0	0	No	100	67	100	33	0	0
E	0	0	0	0	13	3	0	No	90	30	60	50	38	23
F	0	0	0	0	0	0	0	No	90	80	60	62	22	0
G	0	0	0	-	0	0	-	-	DROPPED					
H	0	0	0	0	0	0	0	-	INCOMPLETE					

*Goldman Fristoe Test of Articulation

The formal study for the mentally retarded and public school population has not been completed. At the writing of this report, six mentally retarded subjects and eleven public school subjects have been included in the formal study. One public school subject and one mentally retarded subject have completed the program; one mentally retarded subject has met criterion for entry into the Stimulus Shift Program during the pretest for Response Development. The public school subject met criterion for entry in Stimulus Shift after training of the phonemes in final position nonsense syllables and was entered directly into the Stimulus Shift Program. The data of these subjects will not be used in analysis of the Response Development data, but will be held for further analysis toward streamlining the Response Development Program. The data are being gathered and will be analyzed as the subjects complete the program.

Reliability

Data for the reliability of phoneme judgments is being gathered for each subject. This study is in conjunction with the Stimulus Shift Program reliability and will be reported later.

4. DISSEMINATION ACTIVITIES

In October, copies of the following were available to the general public:

Raymore, Sandra, and McLean, James E. A clinical program for carry-over of articulation therapy with retarded children. In Language Intervention with the Retarded, McLean, J. E., Yoder, D. E., and Schiefelbusch, R. L. (Eds.), University Park Press, 1972.

In addition, preparatory scripting was completed for the videotape pilot of the procedural demonstration for the Stimulus Shift program. This work was done in collaboration with the Media staff.

In preparation for field testing outside the Parsons area, Raymore disseminated information about the Project to superintendents and school principals from five counties in Southeast Kansas. All representatives expressed an interest in participating in the field-test evaluation of the programs. Materials have also been demonstrated for parents, along with one classroom aide, all of whom are interested in participation.

5. CAPITAL EQUIPMENT ACQUISITIONS

In anticipation of the change of stimulus medium from slides to filmstrips, the following equipment was ordered and received:
1 Docuflex Camera Systems with Reprovit 35 reproduction stand, $3,599.20.

6. DATA COLLECTION

At the present time, all data for the public school evaluation of the academic year 1971 - 1972 has been analyzed for the Stimulus Shift Generalization and Response Development programs (see Significant Findings and Events).

Additional data are now being collected on all programs in the public schools. Under evaluation are

a) Stimulus Shift (second revised format and procedure);

b) Phoneme Boundary (first evaluation of the procedure);

c) Response Development (first revised format and procedure).

Specific mention of the data collection procedures is discussed in Significant Findings and Events. See Appendix A for Raw Data.

APPENDIX A

RAW DATA

FOR 1971-1972

PUBLIC SCHOOL STUDY

KINDERGARTEN

Phoneme	Sex	GFTA	CONV.	Time
ʧ	F	59-66	0-100	15'
ʃ	M	79-86	0-100	7'55"
ʃ	M	61-63	0-88	18'10"
r	M	80-86	7-96	11'20"
r	M	89-98	11-100	7'20"
l	F	52-56	0-60	13'30"
l	F	62-76	53-100	8'

GRADE I

Phoneme	Sex	GFTA	Conv.	Time	
2t (l)	F	61-82	16-100	8'00"	(less 6'10")
2t (s)	M	70-93	27-100	6'35"	(less 2'10")
2t (l)	M	43-63	0-100	7'35"	(less 4'30")
2t	M	47-61	7-50	8'20"	
2t (s)	M	70-87	40-93	11'55"	(less 1'0")
1l	F	87-99	8-100	7'25"	
1l (t)	F	61-82	0-100	14'10"	
1l (t)	M	43-63	0-100	12'05"	
l	M	61-76	27-100	13'20"	
1s (t)	M	70-93	17-91	8'45"	
s	M	82-95	3-92	12'20"	
s	M	66-91	22-100	12'25"	
1s	F	89-99	0-100	9'35"	
1s (t)	M	70-87	6-94	12'55"	
s	F	82-97	25-96	5'25"	
s	F	95-100	7-66	5"25"	
s	F	84-99	0-93	6'20"	

GRADE 2

Phoneme	Sex	GFTA	Conv.	Time
	F	84-84	30-71	7'25"
[1]l (f)	F	79-92	43-100	8'45"
l	M	79-95	37-83	10'25"
s	F	92-100	12-100	5'50"
s	M	86-97	0-100	7'25"
s	F	79-88	0-93	10'0"
[2]f (l)	F	79-92	31-100	4'10" (less 4'35")

GRADE 3

Phoneme	Sex	GFTA	Conv.	Time
ʧ	M	56-66	8-100	16'10"
ʧ	F	83-89	70-94	3'20"
s	M	78-84	0-93	11'35"
s	M	91-99	28-97	10'30"
s	F	88-99	20-70	7'45"

GRADE 4

Phoneme	Sex	GFTA	Conv.	Time
l	M	43-80	14-97	11'55"
ʃ			0-100	9'10"

NUMBER NOT MEETING

CRITERION
(≥96%)

Grade	Phoneme	Sex	GFTA	Conv.	Time
K	ʃ	M	61-63	0-88	18'10"
K	l	F	52-56	0-60	13'30"
1	2tʃ	M	47-61	7-50	8'20"
1	1tʃ	M	70-87	40-93*	11'55"
1	1s	M	70-93	17-91*	8'45"
1	1s	M	82-95	3-92*	12'20"
1	1s	M	70-87	6-94*	12'55"
1	s	F	95-100	7-66	5'25"
1	s	F	84-99	0-93*	6'20"
2	ʃ	F	84-84	30-71	7'25"
2	l	M	79-95	37-83	10'25"
2	s	F	79-88	0-93*	10'00"
3	tʃ	F	83-89	70-94*	3'20"
3	s	M	78-84	0-93*	11'35"
3	s	F	88-99	20-70	7'45"

NUMBER MEETING

CRITERION
(96%)

N = 23

Grade	Phoneme	Sex	GFTA	Conv.	Time
K	t	F	59-66	0-100	15'00"
K		M	79-86	0-100	7'55"
K	r	M	80-86	7-96	11'20"
K	r	M	89-98	11-100	7'20"
K	l	F	62-76	53-100	8'00"
1	2t	F	61-82	16-100	8'00"
1	2t	M	70-93	27-100	5'35"
1	2t	M	43-63	0-100	7'35"
1	l	F	87-99	8-100	7'25"
1	l1	F	61-82	0-100	14'10"
1	l	M	43-63	0-100	12'05"
1	l	M	61-76	27-100	13'20"
1	s	M	66-91	22-100	12'25"
1	s	F	89-99	0-100	9'35"
1	s	F	82-97	25-96	5'25"
2	l	F	79-92	43-100	8'45"
2	s	F	92-100	12-100	5'50"
2	s	M	86-97	0-100	7'25"
2	f	F	79-92	3[illegible]-100	4'10"
3	t	M	56-66	8-100	16'10"
3	s	M	91-99	28-97	10'30"
4	l	M	43-80	14-97	11'55"
4	f	M	43-80	0-100	9'10"

PERCENTAGE CORRECT PRODUCTION FOR
96% CRITERION & 90%
CRITERION PER PHONEME

	96%	90%
ch	= 62.5% N = 5/8	= 87.5% N = 7/8
sh	= 50% N = 2/.	= 50% N = 2/4
r	= 100% N = 2/2	= 100% N = 2/2
l	= 77.7% N = 7/9	= 77.7% N = 7/9
s	= 42.9% N = 14	= 85.7% N = 12/14
f	= 100% N = 1	= 100% N = 1/1

THERAPY TIME
PHONEME

ch	sh	r	l	s	f
15'0"	7'55"	11'20"	13'30"	8'45"	4'10"
8'0"	18'10"	7'20"	8'0"	12'20	
6'35"	7'25"		7'25"	12'25"	
7'35"	9'10"	18'40"	14'10"	9'35"	4'10"
8'20"			12'05"	12'55"	
11'55"		N = 2	13'20"	5'25"	$\bar{x}$ = 4'10"
16'10"			8'45"	5'25"	
3'20"	42'40"	$\bar{x}$ = 9'20"	10'25"	6'20"	
			11'55"	5'50"	
76'55"	$\bar{x}$ = 10'40"			7'25"	
				10'0"	
$\bar{x}$ = 9'37"			99'35"	11'35"	
				10'30"	
			$\bar{x}$ = 11'4"	7'45"	
				126'15"	
				$\bar{x}$ = 9'1"	

TRAINING ON TWO PHONEMES

Grade	Phoneme	Sex	GFTA	Conv.	Time	
K	None					
1	l	F		0-100	14'10"	6'0"
	ch		61-82	16-100	8'10"	
	s	M	70-93	17-91	8'45"	2'10"
	ch			27-100	6'35"	
	l	M		0-100	12'05"	4'30"
	ch		43-63	0-100	7'35"	
	s	M	70-87	6-94	12'55"	1'00"
	ch			40-93	11'55"	
2	l	F	79-92	43-100	8'45"	4'35"
	f			31-100	4'10"	
3	None					
4	l	M	43-80	14-97	11'55"	2'45"
	sh			0-100	9'10"	

MEAN SCORES

M	F	GFTA	CONV	TIME
4	2	21.6%	81.8%	9'41"

$\bar{x}$ - TIME DIFFERENCE
Between 1st and 2nd Phoneme

3'40"

PHONEME(S) AND EFFECT ON GFTA PERFORMANCE

ch		sh		r		l		s	
59-66	7	79-86	7	80-86	6	52-56	4	82-95	13
47-61	14	61-63	2	89-98	9	62-76	14	66-91	25
56-66	10	84-84	0		15	87-99	12	89-99	10
83-89	6		9			61-76	15	82-97	15
	37					79-95	16	95-100	5
	$\bar{x}$ = 9.25		$\bar{x}$ = 3		$\bar{x}$ = 7.5		61	84-99	15
								92-100	8
							$\bar{x}$ = 12.20	86-97	11
								79-88	9
								78-84	6
								91-99	8
								88-99	11
									136
									$\bar{x}$ = 11.33

COMBINATIONS

ch + l		ch + s		f + l		l + sh	
61-82	21	70-93	23	79-92	13	43-80	37
43-63	20	70-87	17				
	41		40				
	$\bar{x}$ = 20.5		$\bar{x}$ = 20				

THERAPY TIME
GRADE

K	1	2	3	4
15'0"	8'	7'25"	16'10"	11'55"
7'55"	6'35"	8'45"	3'20"	9'10"
18'10"	7'35"	10'25"	11'35"	
11'20"	8'20"	5'50"	10'30"	
7'20"	11'55"	7'25"	7'45"	21'05"
13'30"	7'25"	10'0"		
8'0"	14'10"	4'10"		$\bar{x}$ = 10'36"
	12'05"		49'20"	
81'15"	13'20"	54'0"		
	8'45"		$\bar{x}$ = 9'52"	
$\bar{x}$ = 11'36"	12'20"	$\bar{x}$ = 7'43"		
	12'25"			
	9'35"			
	12'55"			
	5'25"			
	5'25"			
	6'20"			
	162'35"			
	$\bar{x}$ = 9'34"			

THERAPY TIME VS SEX OF SUBJECT

GRADE	M	F
K	7'55", 18'10", 11'20", 7'20" } $\bar{x}$ = 11'11"	15'0", 13'30", 8'0" } $\bar{x}$ = 12'10"
1	6'35", 7'35", 8'20", 11'55", 12'05", 13'20", 8'45", 12'20", 12'25", 12'55" } $\bar{x}$ = 10'38"	8'0", 7'25", 14'10", 9'35", 5'25", 5'25", 6'20" } $\bar{x}$ = 8'03"
2	10'25", 7'25" } $\bar{x}$ = 8'55"	7'25", 8'45", 5'50", 10'0", 4'10" } $\bar{x}$ = 7'14"
3	16'10", 11'35", 10'30" } $\bar{x}$ = 12'45"	3'20", 7'45" } $\bar{x}$ = 5'33"
4	11'55", 9'10" } $\bar{x}$ = 10'36"	———
TOTAL	$\bar{x}$ = 10'38"	$\bar{x}$ = 8'14"

ALL THERAPY TIME $\bar{x}$ = 9'10"

16 10
5 50
7 25
15 00
7 55
14 10
8 00
8 45
6 35
11 20
3 20
18 10
12 05
7 35
12 20
7 25
11 35
7 20
12 25
10 30
8 20
10 00
13 20
9 35
13 30
11 55
9 10
12 55
11 55
7 25
7 45
5 25
8 45
4 10
10 25
5 25
8 00
6 20

367'75"

7. OTHER ACTIVITIES

Jim Budde, systems analyst for the Bureau of Child Research and Project MORE, worked with the McLean/Raymore staff in developing implementation lattices as a prelude to breaking down each Project component into the functional steps needed for Project realization. This procedure led to better organization, communication, and improved overall efficiency for all staff members.

Future plans for field evaluation of the articulation manuals were discussed with superintendents and principals from the surrounding counties in Southeast Kansas. In an effort to encourage further participation by parents, an agreement was reached with the University Affiliated Facility at Parsons State Hospital to train parents of children with speech problems. The parents, under the supervision of a clinically certified speech pathologist, will be given training (via the Parent-Aide-Paraprofessional program) so that they will be equipped to train their child at home.

8. STAFF UTILIZATION

Staff changes occurred with three positions:

1) Dr. James E. McLean, co-principal investigator, resumed a non-salaried position on September 1, 1972;
2) Mrs. Vivian Gorman was rehired on September 1, 1972 (temporary appointment to January 31, 1973) to assist in data collection for the Stimulus Shift Generalization program in the public schools. Mrs. Gorman held the same position during the 1971-1972 academic year. Funding for this position was obtained from the Lent portion of the Project due to inadequate funds for personnel in this component;
3) Mrs. Shannon Bosley was hired on a temporary basis (to January 31, 1973) to assist in data collection for the Response Development Program in the public schools and with retarded children at Parsons State Hospital and Training Center. The position was effective November 1, 1972.

9. FUTURE ACTIVITIES PLANNED FOR NEXT REPORTING PERIOD

Discussion of future activities and proposed budgets may be found in the Continuation Proposal of 12/1/72, transmitted with this Report.

1. MAJOR ACTIVITIES AND ACCOMPLISHMENTS

During this quarter a portable display of Project MORE products has been assembled. This display includes a rotating carousel on which various products are placed for viewing. An additional display item produced during this last quarter is a syncronous slide/tape package to demonstrate the efficacy of Project MORE products. The multimedia package is shown in a self-contained rear screen projection system on a continuous loop. These display items have created positive responses at conferences and other activities.

Rerecording of "The Toothbrushing Song" was accomplished to incorporate changes in the program. This entailed original quarter-inch tape recording and dubbing to cassettes for testing purposes.

The following pages illustrate the year's activity in relation to a) Project MORE program mediation, and b) the supplemental activity of the print-production unit of the Media group. The supplemental activity listing, it should be pointed out, does not reflect time-involvement of personnel as heavily as the actual number of jobs might imply; many of the job entries listed were simple reproduction tasks (Type A activity).

Project MORE Program Mediation to December 1972

PROGRAM	STAGE OF DEVELOPMENT	TYPE(S) OF MEDIA UTILIZED*	NUMBER OF PAGES
Hair Rolling Program	Dissemination	Manual	188
Showering (Bathing) Program	Validation	Audiovisual, Disc or Tape Recording	47
Ironing Program	Validation	Manual	192 (11 Units)
Face Shaving Program	Validation	Manual	78
Feminine Shaving Program	Validation	Manual	72
Stimulus Shift Generalization Program and Stimulus Shift Phoneme Boundary Program	Validation	Manual and Slides	368 (7 Manuals)
Oral Hygiene Program	Design	Disc or Tape Recording	Unknown at This Time
Eating Etiquette Program	Design	Manual	Unknown at This Time
Telephone Usage Program	Design	Manual	Unknown at This Time
Appropriate Dress Program	Design	Manual	Unknown at This Time
Complexion Care Program	Design	Manual	Unknown at This Time

* Some additional programs will utilize instructional-overview 8 mm films, several will have a film strip component which will be an option to a manual, and some few will be mediated via C A T V formats experimentally.

Media Major Activities (other than Project MORE)

Description	Client	Work Classification*
Parsons Research Report #4	Fulton, BCR (Parsons)	A
Working Paper #261	Hollis, BCR (Parsons)	A
Data Test	Kral, BCR (Parsons)	A
Data Sheets	Kral, BCR (Parsons)	A
Early Education Proposal	DeBriere, PSHTC	A
Memo	Fulton, BCR (Parsons)	A
Data Cards	Fulton, BCR (Parsons)	A
Working Paper #262	Longhurst, BCR (Parsons)	A
Record Sheet	Fulton, BCR (Parsons)	A
Working Paper #263	Longhurst, BCR (Parsons)	A
REFS Lattice	Budde, BCR (Lawrence)	A
Research Subjects	Fulton, BCR (Parsons)	A
State Grant	Carrier, BCR (Parsons)	A
Working Paper #264	Longhurst, BCR (Parsons)	A
Data Sheets	Striefel, BCR (Parsons)	A
Data Sheets	Dixon, BCR (Parsons)	A
Data Sheets	Fulton, BCR (Parsons)	A
Data Sheets	Hollis, BCR (Parsons)	A
Data Sheets	Striefel, BCR (Parsons)	A
Parsons Research Report #5	Kral, BCR (Parsons)	A
Working Paper #265	Smeets, BCR (Parsons)	A
Working Paper #156	Striefel, BCR (Parsons)	A
Data Sheets	Striefel, BCR (Parsons)	A
Data Sheets	Kral, BCR (Parsons)	A
UAF Programing	Lent, Project MORE	A
Data Sheets	Striefel, BCR (Parsons)	A
Photograph	Fulton, BCR (Parsons)	B
Data Sheets	Striefel, BCR (Parsons)	A
Employment Card	Jones, BCR (Parsons)	A
Subjects Schedules	Fulton, BCR (Parsons)	A
Graph	Fulton, BCR (Parsons)	C
Programs	Stremel, BCR (Parsons)	A
Data Sheets	Dixon, BCR (Parsons)	A
PPVT Test Sheets	Research Center	A
Systems Models	Budde, BCR (Lawrence)	B
Schematic	Fulton, BCR (Parsons)	C
Working Paper #266	Hollis, BCR (Parsons)	A
Monograph Diagrams	Fulton, BCR (Parsons)	C
Imagery Test	Holvoet, BCR (Parsons)	A
Imagery Answer Sheets	Holvoet, BCR (Parsons)	A

*A = Print ready copy
B = Make ready work
C = Requires all media functions

Description	Client	Work Classification*
Utterance	Longhurst, BCR (Parsons)	A
Reprints	Kral, BCR (Parsons)	A
Image Redrawings	Holvoet, BCR (Parsons)	A
Grant Application	Carrier, BCR (Parsons)	A
Data Sheets	Striefel, BCR (Parsons)	A
Working Paper #267	Smeets, BCR (Parsons)	A
Data Sheets	King, PSHTC	A
Flow Chart	DeBriere, PSHTC	C
Organization Chart	DeBriere, PSHTC	C
Word Cards	Kamala, PSHTC	A
Data Sheets	Dixon, BCR (Parsons)	A
Flow Chart	DeBriere, PSHTC	C
Monograph Diagrams	Fulton, BCR (Parsons)	B
Demonstration Project	Shickel, BCR (Parsons)	A
Working Paper #268	Striefel, BCR (Parsons)	A
HIP Final Report	Ney, PSHTC	A
AAMD Handouts	Budde, BCR (Lawrence)	A
Data Sheets	Hollis, BCR (Parsons)	A
Data Sheets	Hollis, BCR (Parsons)	A
Appendices to Proposal	Carrier, BCR (Parsons)	A
Statements	DeBriere, PSHTC	A
Subjects Schedules	Fulton, BCR (Parsons)	A
PSHTC Trademark	DeBriere, PSHTC	C
Table 1	Striefel, BCR (Parsons)	A
Data Sheets	Bayless, BCR (Parsons)	A
Working Paper #271	Tucker, Project MORE	C
Data Sheets	Striefel, BCR (Parsons)	A
Data Sheets	DeBriere, T., BCR (Parson	A
UAF Building Blueprints	DeBriere, PSHTC	B
Data Sheets	Striefel, BCR (Parsons)	A
Working Paper #270	Budde, BCR (Lawrence)	C
Pre-evaluation Sheets	Striefel, BCR (Parsons)	A
Reinforcer Sheets	Striefel, BCR (Parsons)	A
Data Cards	White, BCR (Parsons)	B
Data Sheets	Striefel, BCR (Parsons)	A
Data Sheets	Dixon, BCR (Parsons)	A
Working Paper #269	Budde, BCR (Lawrence)	C
Schematic Drawings	Fulton, BCR (Parsons)	B
Data Sheets	Smeets, BCR (Parsons)	A
Subjects Schedules	Fulton, BCR (Parsons)	A
Data Sheets	Striefel, BCR (Parsons)	A
Program Dedication	Bair, PSHTC	B
Illustrations	Carrier, BCR (Parsons)	B
Working Paper #273	Smeets, BCR (Parsons)	A
Sketches	Dixon, BCR (Parsons)	B
Achievement Place Novel	Fixen, BCR (Lawrence)	A
Graphs	Longhurst, BCR (Parsons)	B
Data Sheets	Longhurst, BCR (Parsons)	A
HIST Diploma	Smith, PSHTC	C
Data Sheets	Holvoet, BCR (Parsons)	A
Patent Agreement	Jones, BCR (Parsons)	A
Data Sheets	Smeets, BCR (Parsons)	A
Under/In Front Discrimination	Dixon, BCR (Parsons)	B

Description	Client	Work Classification*
Data Sheets	Smeets, BCR (Parsons)	A
Working Paper #274	Longhurst, BCR (Parsons)	A
Schematics	Fulton, BCR (Parsons)	B
Working Paper #276	Longhurst, BCR (Parsons)	A
Letter	Carrier, BCR (Parsons)	B
Data Sheets	Smeets, BCR (Parsons)	A
Summary Form	DeBriere, PSHTC	A
JABA Reprints	Wolf, BCR (Lawrence)	C
Leave Sheets	Jones, BCR (Parsons)	A
Working Paper #277	Kral, BCR (Parsons)	A
Data Sheets	Dixon, BCR (Parsons)	A
Title I Evaluation Report	Hellwig, PSHTC	A
Child Development Services Brochure	Smith, PSHTC	C
Data Sheets	Dixon, BCR (Parsons)	A
Monograph	Fulton, BCR (Parsons)	B
"Ducks"	Dixon, BCR (Parsons)	C
Vegetable Sketches	Friedman, BCR (Parsons)	C
Forms	DeBriere, PSHTC	A
Subjects Schedules	Dear, BCR (Parsons)	A
Program Interview Form	Budde, BCR (Lawrence)	C
Vegetable Transfer	Friedman, BCR (Parsons)	B
Forms & Information Sheet	DeBriere, PSHTC	A
Motor Imitation Pretest	Striefel, BCR (Parsons)	A
Current Events Working Paper	Keilitz, Project MORE	C
Schedule Cards	Fulton, BCR (Parsons)	A
"Application of Functional Analysis"	Carrier, BCR (Parsons)	A
Data Sheets	Striefel, BCR (Parsons)	A
Graphs	Smeets, BCR (Parsons)	B
Data Sheets	Hollis, BCR (Parsons)	A
Effects of Dosage	DeBriere, PSHTC	A
Working Paper #275	Waryas, BCR (Parsons)	A
Working Paper #279	Waryas, BCR (Parsons)	A
UAF Training Brochure	Smith, PSHTC	C
Tables	Stremel, BCR (Parsons)	A
Working Paper #271 Revision	Keilitz, Project MORE	C
Working Paper #278	Keilitz, Project MORE	A
Data Sheets	Striefel, BCR (Parsons)	A
Working Paper #281	Holvoet, BCR (Parsons)	C
Working Paper #276	Longhurst	A
Achievement Place Novel Reprints	Fixen, BCR (Lawrence)	A
Trial Monthly Summary Forms	DeBriere, PSHTC	A
Subjects Schedules	Fulton, BCR (Parsons)	A
Headings for Photos	Smith, C., PSHTC	B
Language Training Reprint	Fulton, BCR (Parsons)	A
Parsons Research Handbook	Fulton, BCR (Parsons)	C
Boy Scout Program	Yanez, PSHTC	C
Data Sheets	Striefel, BCR (Parsons)	A
Data Sheets	Striefel, BCR (Parsons)	A
State Dept. of Education Process Unit	Thorsell, UAF/Project MORE	C
Working Paper #282	Smeets, Striefel, BCR (Parsons)	A
Parsons Research Report #6	Raymore, Project MORE	A
UAF Course Brochure	Smith, PSHTC	C

Description	Client	Work Classification*
Speech & Hearing Department	Fulton, BCR (Parsons)	A
UAF Course Duplications	Smith, PSHTC	A
Dixon News Release	Fulton, BCR (Parsons)	C
Subjects Schedules	Fulton, BCR (Parsons)	A
UAF Slide Show	Thompson, Project MORE	B
UAF/MR Course Brochure	Smith, PSHTC	C
Data Sheets	Carrier, BCR (Parsons)	A
Journal Article	Kral, BCR (Parsons)	A
"Decision Making"	Keilitz, Project MORE	A
Boxes	Dixon, BCR (Parsons)	B
Science Magazine Binding	Dixon, BCR (Parsons)	B
HIST Workshop Brochure	St.Louis, PSHTC	C
PSHTC Grounds Display	Spellman, PSHTC	C
Copies	Fulton, BCR (Parsons)	A
Subjects Schedules	Fulton, BCR (Parsons)	A

2. PROBLEMS

During the past year the print-production Media group has made great strides in overcoming organizational problems caused by the fact that several people with complementary skills must be involved in each project. Because the end product often demands the full thrust of Media potential--editing, graphics, typing, printing, binding--a system of full communication between the different elements within the organization had to be set up. To do this, the editor assigned to each specific product was designated to be in charge of full-production coordination.

Working with Jim Budde, systems analyst for the Bureau of Child Research and Project MORE, a systematic procedure for production was designed. Although a systematic work-order form, based on this procedure, has been a problem in the past because of the great detail necessary to it, it has been redesigned in the last three months. The new work order is both clear and direct, easily understandable for all who are involved in production. A copy of this new work order may be found in this section.

As a direct result of the reorganization and of the new work order, job descriptions for all of the Project MORE Media personnel have been redefined. The clarification of these job descriptions has added greatly to the efficiency and productivity of Media personnel.

However, many production problems are still to be found, stemming from the fact that much of Print Media's equipment is inadequate for growing needs for more versatility. The biggest problem begins as projects are completed by the editors and artists and enter the production stage. The work flow must then narrow to pass through the single press. Our duplicating capability, at maximum output, is 7,000 sheets per hour. However, half that number is a more realistic figure for most products, and in the past few months Media has constantly been faced with down-time of the duplicating equipment, including the press itself and the collator; this of course, caused production delay.

In addition, because of the limitations of the press, the formats must conform to a maximum 9" x 13" area on 10" x 14" stock with no bleed-off. This not only limits layout, but confines the creative input of the program developers (See Budget section for new equipment items.)

While overall efficiency of the Media group has increased considerably, problems normal to the growth aspect of such a group do need to be solved at this juncture. Flexibility and feasibility factors need to be reassessed and quantified in terms of personnel resources and time relationships.

Media is also faced with severe limitations in its binding equipment. The equipment available is capable of handling only normal duplicating demands, not the demands of instructional materials' production. When the point to begin binding is reached, many extra man hours are required to complete a full-production job.

PRODUCT WORK ORDER, AND SCHEDULING FORM

PRODUCT NAME_____WORK ORDER NO._____

DATE REQUESTED_____DATE NEEDED_____MUST APPROX

RESEARCHER_____GRANT NO._____

DIRECT ALL QUESTIONS TO_____

PHASE 1 -- PLANNING

☐ FILL OUT INITIAL SECTION OF WORD ORDER

☐ ATTACH MANUSCRIPT

☐ ATTACH GRAPHICS

☐ ROUTE TO EDUCATIONAL MEDIA ANALYST

COORDINATOR_____

- ☐ SPECIFY USE OF PRODUCT _____
- ☐ SPECIFY MAKE-UP OF PRODUCT _____
- ☐ SPECIFY QUANTITY TO BE PRODUCED _____
- ☐ SPECIFY SPECIAL NEEDS AND CONSTRAINTS _____
- ☐ SPECIFY DATE NEEDED _____
- ☐ WILL ITEM BE PRODUCED (YES/NO) _____
- ☐ (SUBCONTRACTING?) _____
- ☐ RETURN TO PRODUCTION COORDINATOR _____

ASSIGNED TO PROJECT EDITOR _____

DEADLINE _____ ANALYST _____

ANALYST							TOTAL

EDIT MANUSCRIPT _____

- ☐ CORRECT MANUSCRIPT _____
- ☐ ESTABLISH RHETORICAL STYLE _____
- ☐ SET UP CONVENTIONS _____
- ☐ INDICATE FORMAT DETAILS _____
- ☐ STATE TYPE TO BE USED _____
- ☐ STATE PAGE AND SHEET SIZE _____
- ☐ STATE SIZE OF MARGINS _____
- ☐ PLAN FOR FOLDS AND INSERTS _____

COPYFIT TEXT FOR COMPOSITION

- ☐ INDICATE DISPLAY AREAS AND SIZES ON MANUSCRIPT _____
- ☐ SHOW EXACT SPACE REQUIRED FOR GRAPHICS _____
- ☐ HALF TONES _____
- ☐ SPECIAL LETTERING _____
- ☐ DRAWINGS _____
- ☐ CHARTS AND GRAPHS _____
- ☐ SHOW WHITE SPACE DIMENSIONS _____
- ☐ INDICATE COLOR SEPARATION _____
- ☐ INDICATE PAGINATION _____
- ☐ ATTACH DUMMY TO WORK ORDER _____
- ☐ SECURE APPROVAL OF DUMMY FRIM RESEARCHER _____

☐ SPECIAL ORDERS

EDITOR	TIME ESTIMATE	COMPLETED	HOURS WORK	HOURS COST	SUPPLIES	COST	TOTAL

☐ SPECIAL INSTRUCTIONS FOR REFINNING GRAPHICS

GRAPHICS	TIME ESTIMATE	COMPLETED	HOURS WORK	HOURS COST	SUPPLIES	COST	TOTAL

- [ ] DO SPECIAL LETTERING
- [ ] DO HALFTONES
- [ ] CROP AND SCALE TO MEET DUMMY'S LAYOUT
- [ ] DO COLOR SEPARATIONS

- [ ] SPECIAL INSTRUCTIONS

SECURE EDITORS APPROUAL_____

- ☐ MARGINS
- ☐ SPACING
- ☐ SIZE PAPER
- ☐ TYPING HEAD
- ☐ TYPE SET COPY AS MANUSCIPT COPY SPECIFIES
- ☐ PROGRAM ONTO MAGNETIC TAPE
- ☐ RECORD REFERENCE CODES FOR RECALL
- ☐ PLAY OUT SET COPY FOR PROOFING
- ☐ TAPE NOL
- ☐ REF. CODES
- ☐ SPECIAL INSTRUCTIONS

TYPING	TIME ESTIMATE	COMPLETED	HOURS WORK	HOURS COST	SUPPLIES	COST	TOTAL

- ☐ PERFORM FIRST PROOF READING
- ☐ SPECIAL INSTRUCTIONS
- ☐ HAVE TYPIST CORRECT PROOFED COPY
- ☐ PERFORM SECOND PROOFREADING
- ☐ CHECK FOR PASTE-UP (W/EDITOR)

PROOFING							TOTAL

- ☐ NUMBER OF COPIES PER MASTER
- ☐ COLOR OF PAPER
- ☐ FRONTS ONLY
- ☐ FRONTS & BACKS
- ☐ COVER SHEET COLOR
- ☐ COLLATED
- ☐ PRINTER'S PROOF TO EDITOR
- ☐ SPECIAL INSTRUCTIONS

FRONTS & BACKS
NO. OF COPIES (IMPRESSIONS)
NO. OF MASTERS

PRINTING	TIME ESTIMATE	COMPLETED	HOURS WORK	HOURS COST	SUPPLIES	COST	TOTAL

TYPE

- ☐ THERMAL
- ☐ STAPLE
- ☐ PLASTIC
- ☐ SPECIAL INSTRUCTIONS

BINDING	TIME ESTIMATE	COMPLETED	HOURS WORK	HOURS COST	SUPPLIES	COST	TOTAL

☐ FINAL CHECK

☐ SPECIFY PACKAGING

FINAL CHECK	TIME ESTIMATE	COMPLETION	HOURS WORK	HOURS COST	SUPPLIES	COST	TOTAL

☐ PACKAGE

☐ SPECIAL INSTRUCTIONS

DELIVERY	TIME ESTIMATE	COMPLETED	HOURS WORK	HOURS COST	SUPPLIES	COST	TOTAL

☐ INVENTORY

☐ ORDER SUPPLIES

TYPE OF JOB

PRICE

BOOKKEEPING

OVERHEAD COSTS

	TOTAL HOURS	TOTAL HRS. COST		TOTAL SUPPLIES COST	TOTAL JOB COST
TOTALS					

3. SIGNIFICANT FINDINGS AND EVENTS

Not Applicable

4. DISSEMINATION ACTIVITIES

In April, as The Hair Rolling Program's validation testing neared completion, John Dostal, a consultant in the marketing of educational materials, was contacted. Mr. Dostal visited the site during April and recommended that, since the major publishers of educational materials were reluctant to handle the products developed by Project MORE, the project should begin activities directed at enhancing the consumer market for its products. The first priority was to decide on an appropriate label for the project that could be used universally to identify all of the products developed by the project. The acronym Project MORE (Mediated Operational Research for Education) was formulated as the project indentifier.

Charles Cartwright, who joined Media Support Services in September, 1971, as an editorial assistant, was promoted to the position of program dissemination editor. The creation of this position established the full-time utilization of a staff member for the purpose of implementing the marketability of Project MORE products.

In May an exhibit displaying selected Project MORE products was shown at the National AAMD Convention in Minneapolis, Minnesota. The exhibit was received well and many queries concerning methods of obtaining Project MORE instructional packages were received. An important outgrowth of the Project MORE exhibit and other presentations given by staff members was the negotiation of a distribution agreement between Project MORE (through the University of Kansas Extramural Independent Study Center) and Psychologists and Educators, Inc., of Jacksonville, Illinois.

The Program Dissemination Editor contacted professional book exhibitors to make arrangements to have the Project MORE products exhibited at conferences that project staff members would be unable to attend. The Combined Book Exhibit of Briarcliff Manor, New York, and Academia Book Exhibits of Fairfax, Virginia, agreed to add Project MORE to their lists of exhibitors. These two book exhibit firms have displayed products developed by Project MORE at the following conventions:

1) The Pennsylvania Library Assoc ation Convention held in Pittsburgh, Pennsylvania, from October 4-7;

2) The Maryland State Teachers Association Convention held in Baltimore, Maryland, form October 4-7;

3) The Oklahoma Education Association Convention held in Oklahoma City, Oklahoma, October 19-20; and

4) The World-wide Conference of the International Schools Association held in Frankfurt, Germany, from August 9-16.

The book exhibit companies compile a list of those interested in ordering copies and/or of those wishing more information concerning the books on exhibition. This list is forwarded, upon payment of the exhibition fee, to the owner of the book on display. Should the exhibit companies' reports yield favorable data, exhibits at other conventions will be arranged.

Mr. Cartwright and Dr. Casper Ferneti, Project MORE Research Associate, attended the 5th International Congress on Mental Retardation in Montreal during October. An Exhibit was prepared and a simple brochure was distributed in Montreal and, as a result, about 50 inquiries were received by November 1 requesting copies of the Project MORE programs of instruction. This is considered a good reponse due to the large number of students in attendence and others at the Congress whose primary concern was not programs to teach self-care skills. The vast majority of the responses have been from institutions for the mentally retarded and others who would, in all probability, require quantities of the Project MORE products.

Also during October, several Project MORE staff members gave presentations and exhibited the Project MORE display at the Regional AAMD Convention held in Hot Springs, Arkansas. Additional brochures were distributed and the results are following a pattern similar to that of the International Mental Retardation Congress in Montreal.

Karen Brown, writer/editor, attended the Annual National Meeting of Women in Communications in Houston, Texas, October 5-9. The meeting brought together outstanding women journalists from across the country and many contacts with newspapers and special interest publications were made for Project MORE. Mrs. Brown also attended the fall meeting of Missouri Press Women in Kansas City on September 23 which led directly to meetings with the medical/science editor of the Kansas City Star and to an interview with a WDAF (Kansas City) disc jockey who aired the "Shower Song" on his "Feminine Forum" radio program.

Project MORE is currently planning an open house for November 15. November is National Retarded Children's Month and is being sponsored by the National Association for Retarded Children. One of the goals of the month is to increase public understanding of the handicapped and the special needs of this group. Because Project MORE's products are directed toward the special needs of the developmentally and mentally handicapped, National Retarded Children's Month presented a most timely opportunity to provide exposure for the project and also provide a community service.

Since the majority of parents and others who would benefit most from a knowledge of programs of instruction that are available or are being developed for the handicapped work the same hours as the project staff, it was decided to invite representatives of the media to the open house. In this manner the mass media could be used to convey the information to the public and a much broader audience could be reached. Invitations were sent to approximately 100 radio and television stations and newspapers.

5. CAPITAL EQUIPMENT ACQUISITIONS

(Media) Capital Equipment Acquisitions

Video Waveform Monitor, $914.00

Three Twin RF Monitors, $1,432.00

Docuflex 35 mm Camera Filmstrip System, complete reprovit slide duplication system, $3,360.00

6. DATA COLLECTION

Not Applicable

7. OTHER ACTIVITIES

The combined PSHTC and Project MORE audiovisual staff has now completed a motion picture entitled "Graduation Day," describing the programs and systematic training now being used in the PSHTC Title One Program for younger severely and profoundly retarded children. The sixteen-minute color motion picture illustrates for trainers, parents, and paraprofessionals the step-by-step procedures, coupled with behavior modification methodology, that are used to teach one part of a long-range program to develop language imitation. The title, "Graduation Day," is used throughout the film to emphasize the importance of imitation in a child's development, preparing him to accept a variety of new skills and abilities through imitation training.

Another motion picture, "The Temporal Parameters of Operant Audiometry," has now been scripted and recorded on motion picture film for the Research Center and Speech and Hearing Department. Using considerable animation, this motion picture follows a previous film, "Operant Audiometry with Severely Retarded Children," to explain the exacting program procedures to assure consistent and accurate measurements of the child's hearing abilities. This film is now being synchronized and edited and should be released during the next quarter.

8. STAFF UTILIZATION

Two additional staff members have joined the audiovisual Media during this quarter to supplement the engineering and photographic production. Mr. Joe Crabtree has had ten years of commercial television experience as an engineer and production worker; he will assist in the installation and maintenance of television and audio equipment, as well as serving as sound-recording engineer in motion-picture production. Performing still photographic and motion picture requirements, Mr. Robert Pierce has had previous child-related experience in photography at the University of Kansas Bureau of Child Research. Both new staff members are funded under SRS-59P-351167-01, with the University Affiliated Facility program.

9. FUTURE ACTIVITIES PLANNED FOR NEXT REPORTING PERIOD

Discussion of future activities and proposed budgets may be found in the Continuation Proposal of 12/1/72, transmitted with this Report.

1. MAJOR ACTIVITIES AND ACCOMPLISHMENTS

Since the conception of the Educational Technology Grant, systems technology has been used to design, develop, and implement an operational system that would produce validated training packages for the retarded. In the initial stages, systems techniques were used to plan the grant. First, a program lattice (program blueprint) was fabricated to illustrate the design of each project within the grant. Second, an implementation lattice was used to illustrate the steps or implementation system necessary to develop and validate the products of each project.

Once the grant was awarded, systems techniques were used to establish the composite operational system. Project implementation systems were established according to plans specified in the program lattices. In numerous instances the plans were modified until the implementation system reached a tolerable level of effectiveness. During this process, programs within projects were also modified so that they could be made more practical, usable and economical.

The primary support system incorporated into the Educational Technology Grant is Media Support Services. In order to meet the needs of each project, a basic system was planned and resources and personnel were allocated accordingly. As projects were implemented, the need for Media services increased tremendously and, as a result, systems analysis was applied. Components of the system were isolated and the flow of products through the system was studied. A systems algorithm, used to modify the initial system, was synthesized to control mediation of products. This plan underwent modifications until Media reached a higher level of effectiveness (see (Media) Problems).

2. PROBLEMS

Since some requirements for the Educational Technology system have changed since its conception, certain components of the system continually need to be modified in order for the system to adapt to these changes. Objectives must be reviewed periodically and compared to need. Once discrepencies or gaps are pinpointed, systems techniques may be applied.

Certain components of the operational system requiring application of systems technology can be specified. For example, the validation portion of the Lent implementation system must be made more efficient. The implementation of new software, to increase effectiveness in Media Support Services, must undergo its final testing and implementation. The feasibility of new costing procedures to increase efficiency needs to be examined. One area of planned expansion is in the process of obtaining copyrights for educational products. This process can be incorporated into a system for use by other researchers or developers. Another area is dissemination (see (Budde) Dissemination Activities).

In addition, there are few organizations of projects that deal with validated products. Therefore it is difficult to establish the efficiency and effectiveness of the operational system. If assessments are to be made, it is necessary to compare present operations with a baseline. Systems techniques will be applied to this problem on a continuous basis so that systems can be enforced as needed.

3. SIGNIFICANT FINDINGS AND EVENTS

Not Applicable

4. DISSEMINATION ACTIVITIES

Developing, validating, and disseminating educational products for the retarded is a relatively unique field. In the last few weeks certain constraints have been lifted, opening up new paths for dissemination. As a result, the operational systems needs to be expanded to incorporate this aspect (see all Future Activities and Dissemination sections herein). .

5. CAPITAL EQUIPMENT ACQUISITIONS

Not Applicable

6. DATA COLLECTION

Not Applicable

7. OTHER ACTIVITIES

Not Applicable

8. STAFF UTILIZATION

Not Applicable

9. FUTURE ACTIVITIES PLANNED FOR NEXT REPORTING PERIOD

Discussion of future activities and proposed budgets may be found in the Continuation Proposal of 12/1/72, transmitted with this Report.