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ABSTRACT

Evaluated was the Sight-Sound-Symbol (S-S-S) method of teaching basic reading skills with four groups of 16 trainable mentally retarded children. The method involved use of a musical keyboard to teach children to identify numbers, letters, colors, and shapes. Groups either received individual S-S-S instruction for 10 minutes daily, received S-S-S instruction on a group basis for 10 minutes daily, were allowed to pursue game activities, or received no form of treatment. Ss were pretested and posttested on selected cognitive, social, and motor subtests of the Illinois Test of Psycholinguistic Abilities (ITPA), and the S-S-S Inventory. Results of the posttesting revealed no significant differences across treatment groups on any independent variables, either academic or social. (DB)

EVALUATION OF SIGHT, SOUND, SYMBOL INSTRUCTIONAL METHOD

AN ESEA TITLE III PROJECT

SPONSORED BY

POTTAWATTAMIE COUNTY SCHOOL SYSTEM

Dr. Calvin Bones, Superintendent

Mr. Alan Bergstrom, Project Coordinator

Prepared By

Dr. Michael C. Massarotti
University of Wyoming

Dr. William M. Slaichert
University of Denver

June, 1972

The purpose of this study was to determine the effect of Sight, Sound, and Symbol methodology on selected cognitive, social, motor variables measured by the Illinois Test of Psycholinguistic Ability, Sight-Sound-Symbol (S-S-S) Inventory and Social Inventory.

METHOD

Subjects

The subjects (Ss) were 64 trainable mentally retarded children from Halverson Education Center, Pottawattamie County, Iowa. The Ss were randomly assigned to one of four experimental groups.

Procedure

The experimental design was a one-way analysis of covariance with pretest scores on each dependent variable utilized as covariates.

In order to relate empirical data to the propositions contained in the purpose, four levels of treatment were designed. These levels which define the treatment or the main independent variable manipulated in the treatment were

1. Subjects were removed from their classrooms and received Sight, Sound, and Symbol instruction for 10 minutes daily on a one-to-one basis.
2. Subjects were removed from their classrooms and received Sight, Sound, and Symbol instruction for 10 minutes daily on a group basis.

3. Subjects were removed from their classrooms and were allowed to pursue game activities that were in their experience dimension.
4. Subjects received no form of the treatment.

The Pretest-Posttest Control Group Design was utilized in this investigation. A schema of this design is as follows:

$$\begin{array}{llll} R & O_1 & X & O_2 \\ R & O_3 & X_2 & O_4 \\ R & O_5 & X_3 & O_6 \\ R & O_7 & & O_8 \end{array}$$

Where R represents random assignment to groups, O represents an observation or measurement, and X represents a variation of the treatment.

Subjects assigned to Group 1 were randomly selected for individual treatment each day in order to control for an order of treatment bias within the group. The order of small group treatment was also randomly ordered for Group 2 subjects. Group was designed to control for the effect of systematic removal from the existing classroom environment.

Teachers of subjects in all groups were cautioned to pursue conventional activities. It was recognized that reduced class size could stimulate the teacher to re-organize the instructional pattern and as a consequence contribute to unaccountable variance in pupil performance.

The following ITPA subtest posttest scores were employed as dependent variable measurements:

1. Auditory Reception
2. Visual Sequential Memory
3. Verbal Expression

Also, the following S^3 subtest posttest scores were utilized as dependent variable measurements:

1. Colors - Discrimination
2. Colors - Verbalization
3. Colors - Conceptualization
4. Colors - Total Score
5. Lines - Discrimination
6. Lines - Motor
7. Lines - Total Score
8. Letters - Discrimination
9. Letters - Motor
10. Letters - Verbalization
11. Letters - Conceptualization
12. Letters - Total Score
13. Shapes - Discrimination
14. Shapes - Motor
15. Shapes - Conceptualization
16. Shapes - Total Score
17. Numbers - Discrimination
18. Numbers - Motor
19. Numbers - Verbalization
20. Numbers - Conceptualization
21. Numbers - Total Score
22. Curves - Discrimination
23. Curves - Motor
24. Curves - Total Score
25. S^3 - Total Test Score

Three data collection instruments were utilized in this study. The Illinois Test of Psycholinguistic Ability, Sight-Sound-Symbol Inventory and Social Inventory. The latter two instruments were developed by project personnel to measure cognitive, psychomotor and social growth.

The Social Inventory consisted of rating (dichotomous assessment) of the status of selected social-personal behaviors. Anslysis of frequency of response for each item was achieved with the Chi Square method.

RESULTS

ITPA Subtests

The summary of results of the three ITPA subtests is shown in Table 1.

Analyses revealed no significant differences across treatment groups on any subtest performance. The hypotheses that Ss receiving S-S-S methodology would achieve significantly higher scores on auditory reception, visual sequential memory and verbal expression are not supported.

S-S-S Inventory

The summary of results of the S-S-S Color subtest are represented in Table 2.

Analyses of components of the Color subtest revealed no significant differences across treatment groups on any component of the subtest. The hypotheses that Ss receiving S-S-S methodology would achieve significantly higher scores on color discrimination, color verbalization, color conceptualization, and color total score are not supported.

TABLE 1

SUMMARY OF ANALYSIS OF COVARIANCE[a] OF ILLINOIS TEST OF PSYCHOLINGUISTIC ABILITY SELECTED SUBTEST SCORES

Dependent Variable Posttest Scores	Mean Square Error (df = 58)	F-ratio for Treatment[b] (df = 3)	P
Auditory Reception	32.[illegible]	1.229	N.S.
Visual Seq. Memory	7.668	0.473	N.S.
Verbal Expression	7.522	0.743	N.S.

[a]The covariate in each analysis consisted of the pretest score on the same test as the dependent variable.

[b]Mean Square term for treatment is reproducible by $MS_e \times F$.

TABLE 2

SUMMARY OF ANALYSIS OF COVARIANCE[a] OF

SIGHT-SOUND-SYMBOL COLOR SUBTEST SCORES

Dependent Variable Posttest Scores	Mean Square Error (df = 58)	F-ratio for Treatment[b] (df = 3)	P
Color - Discrimination	8.438	0.784	N.S.
Color - Verbalization	18.997	0.624	N.S.
Color - Conceptualization	22.880	0.525	N.S.
Color - Total Score	64.359	0.960	N.S.

[a]The covariate in each analysis consisted of the pretest score on the same test as the dependent variable.

[b]Mean Square term for treatment is reproducible by $MS_e \times F$.

The results of the Line subtest appear in Table 3.

The summary of analyses of the Line subtest revealed no significant differences among treatment group performances. The hypotheses that Ss receiving S-S-S treatment would achieve significantly higher scores on lines discrimination, lines motor and lines total score are not supported.

The summary of analyses of Letters subtest is reported in Table 4.

Component analyses of the Letters subtest showed no significant differences in treatment group performances. The hypotheses that Ss receiving S-S-S treatment would achieve higher scores on letter discrimination, letters motor, letters verbalization, letters conceptualization and letters total score components are not supported.

The results of the Shapes subtest are reported in Table 5.

Analyses of components of the Shapes subtest revealed no statistically significant differences. The hypotheses that S-S-S treatment Ss would score higher on shapes discrimination, shapes motor, shapes conceptualization and shapes total score are not supported.

Results of the Numbers subtest analyses appear in Table 6.

The Numbers subtest component analyses revealed no significant differences across treatment groups. The hypotheses that Ss in S-S-S groups would score significantly higher on numbers discrimination, numbers motor, numbers verbalization, numbers conceptualization, and numbers total score are not supported.

The summary of results of the Curves subtest is reported in Table 7.

TABLE 3

SUMMARY OF ANALYSIS OF COVARIANCE[a] OF

SIGHT-SOUND-SYMBOL LINES SUBTEST SCORES

Dependent Variable Posttest Scores	Mean Square Error (df = 58)	F-ratio for Treatment[b] (df = 3)	P
Lines - Discrimination	9.903	1.558	N.S.
Lines - Motor	6.178	0.405	N.S.
Lines - Total Score	21.445	0.388	N.S.

[a] The covariate in each analysis consisted of the pretest score on the same test as the dependent variable.

[b] Mean Square term for treatment is reproducible by $MS_e \times F$.

TABLE 4

SUMMARY OF ANALYSIS OF COVARIANCE[a] OF

SIGHT-SOUND-SYMBOL LETTERS SUBTEST SCORES

Dependent Variable Posttest Scores	Mean Square Error (df = 58)	F-ratio for Treatment[b] (df = 3)	P
Letters - Discrimination	7.276	1.510	N.S.
Letters - Motor	8.769	0.141	N.S.
Letters - Verbalization	10.920	0.402	N.S.
Letters - Conceptualization	8.480	0.731	N.S.
Letters - Total Score	50.823	0.683	N.S.

[a]The covariate in each analysis consisted of the pretest score on the same test as the dependent variable.

[b]Mean Square term for treatment is reproducible by $MS_e \times F$.

TABLE 5

SUMMARY OF ANALYSIS OF COVARIANCE[a] OF

SIGHT-SOUND-SYMBOL SHAPES SUBTEST SCORES

Dependent Variable Posttest Scores	Mean Square Error (df = 58)	F-ratio for Treatment[b] (df = 3)	P
Shapes - Discrimination	10.104	1.582	N.S.
Shapes - Motor	13.884	0.897	N.S.
Shapes - Conceptualization	31.093	0.698	N.S.
Shapes - Total Score	77.132	0.803	N.S.

[a]The covariate in each analysis consisted of the pretest score on the same test as the dependent variable.

[b]Mean Square term for treatment is reproducible by $MS_e \times F$.

TABLE 6

SUMMARY OF ANALYSIS OF COVARIANCE[a] OF

SIGHT-SOUND-SYMBOL NUMBERS SUBTEST SCORES

Dependent Variable Posttest Scores	Mean Square Error (df = 58)	F-ratio for Treatment[b] (df = 3)	P
Numbers - Discrimination	7.029	0.760	N.S.
Numbers - Motor	11.694	1.483	N.S.
Numbers - Verbalization	6.955	0.766	N.S.
Numbers - Conceptualization	10.608	2.135	N.S.
Numbers - Total Score	73.867	0.401	N.S.

[a]The covariate in each analysis consisted of the pretest score on the same test as the dependent variable.

[b]Mean Square term for treatment is reproducible by $MS_e \times F$.

TABLE 7

SUMMARY OF ANALYSIS OF COVARIANCE[a] OF
SIGHT-SOUND-SYMBOL CURVES SUBTEST SCORES
AND SIGHT-SOUND-SYMBOL TOTAL SCORE

Dependent Variable Posttest Scores	Mean Square Error (df = 58)	F-ratio for Treatment[b] (df = 3)	P
Curves - Discrimination	8.055	0.627	N.S.
Curves - Motor	1.077	0.883	N.S.
Curves - Total Score	9.336	0.705	N.S.
S-S-S Total Score	443.332	1.446	N.S.

[a] The covariate in each analysis consisted of the pretest score on the same test as the dependent variable.

[b] Mean Square term for treatment is reproducible by $MS_e \times F$.

Analyses of the Curves subtest component showed no difference in achievement across treatment groups. The hypotheses that Ss in S-S-S groups would score higher on curves discrimination, curves motor, curves total score are not supported.

Further, the total score for the S-S-S Inventory is also reported in Table 7 and revealed no significant differences.

Social Inventory

The results of Chi Square analysis of each item performance of subjects on tests administered on a pre-, interim, and posttest schedule are reported in Table 8.

Analyses revealed that Ss began the experiment with no differences in social behaviors referenced in the inventory with the exception of LOOK-WALL (Item 7b) and CLOSE-DOOR (Item 8). Differences among experimental group Ss did exist before treatment on these two behaviors in favor of Ss in Group 1.

The differences on these two items disappears on the mid-term analysis. No difference is shown on Item 7b on the posttest; however, a significant difference in behavior appears in posttest in Item 8. These results appear in Table 9.

Analysis revealed that Group 3 is the main contributor to the difference in post-performance on Item 7b; however, the main control group performed as well as the two treatment groups. The hypotheses that the social behaviors identified in Items 7b and 8 are independent from treatment group are not supported.

Table 8 also revealed differences across experimental groups on FIRST-LAST NAME (Item 11a) and TOOTHBRUSH (Item 12) behaviors. Analysis revealed that on Item 11a the differences are a

TABLE 8

SUMMARY OF CHI SQUARE ANALYSIS

OF SOCIAL INVENTORY ITEMS

Item	Pretest Chi Square	P*	Mid-term X^2	P	Posttest X^2	P*
1. Hello.	4.76	N.S.	1.84	N.S.	2.12	N.S.
2. How are you.	0.22	N.S.	0.12	N.S.	2.08	N.S.
3. Sit-chair.	1.07	N.S.	3.42	N.S.	3.43	N.S.
4. Hands-lap.	0.44	N.S.	1.07	N.S.	2.15	N.S.
5. Ashtrays.	3.16	N.S.	0.71	N.S.	3.02	N.S.
6. Boy/Girl.	6.58	N.S.	3.15	N.S.	8.20	$<.05$
7a. Remain-seat.	3.81	N.S.	1.80	N.S.	5.00	N.S.
7b. Look-wall.	8.15	$<.05$	.71	N.S.	0.74	N.S.
8. Close door.	10.82	$<.05$	2.08	N.S.	10.81	$<.05$
9a. Explanation.	4.64	N.S.	7.08	N.S.	1.66	N.S.
9b. Wipes-water.	7.20	N.S.	7.52	N.S.	3.21	N.S.
9c. Disposal.	1.41	N.S.	3.17	N.S.	1.22	N.S.
10a. Standing.	2.15	N.S.	1.08	N.S.	0.49	N.S.
10b. Song.	2.31	N.S.	2.26	N.S.	1.43	N.S.
11a. First-last name.	6.86	N.S.	8.62	$<.05$	8.93	$<.05$
11b. One name.	4.79	N.S.	1.88	N.S.	1.88	N.S.
11c. Other name.	1.18	N.S.	5.14	N.S.	3.15	N.S.
12. Toothbrush.	5.15	N.S.	9.87	$<.05$	1.80	N.S.
13. Apology.	2.65	N.S.	0.84	N.S.	0.25	N.S.
14a. Lost (2 or more).	2.48	N.S.	2.51	N.S.	2.48	N.S.

TABLE 8 Continued

Item	Pretest Chi Square	P*	Mid-term X^2	P	Posttest X^2	P*
14b. Single solution.	1.85	N.S.	1.69	N.S.	1.34	N.S.
15. Death.	6.37	N.S.	1.19	N.S.	1.72	N.S.
16a. Happy.	0.25	N.S.	0.69	N.S.	0.57	N.S.
16b. Sad.	0.40	N.S.	0.30	N.S.	0.16	N.S.
17a. Thanks-unsolicited.	0,65	N.S.	1.20	N.S.	2.06	N.S.
17b. Thanks-solicited.	2.08	N.S.	1.22	N.S.	1.56	N.S.
18a. Accepts gum.	4.34	N.S.	2.00	N.S.	2.68	N.S.
18b. Unwraps gum.	6.90	N.S.	1.72	N.S.	2.68	N.S.
18c. Disposes paper.	1.44	N.S.	4.65	N.S.	2.08	N.S.
19. Goodbye.	2.87	N.S.	1.51	N.S.	0.56	N.S.

* .05 = 7.82

TABLE 9

POSTTEST FREQUENCIES OF ITEM 8

BEHAVIOR OF SOCIAL INVENTORY

	Yes	No
Group 1	14	0
Group 2	18	0
Group 3	10	4
Group 4	15	1

result of better than expected performance in Group 3 and poorer than expected performance in Group 4. Both of these groups were groups that did not receive the treatment and conflict in performance in these groups does not support the hypotheses that the groups receiving S-S-S treatment would show significantly altered behavior.

Significant differences were also noted on posttest results; however, Groups 1 and 4 performed poorer than expected and Groups 2 and 3 performed greater than expected. Recalling that Groups 1 and 2 received S-S-S treatment and Groups 3 and 4 are control groups indicates that the differences cannot be attributable to S-S-S methodology.

Analysis of Item 12 on the mid-term assessment revealed that the two groups receiving S-S-S treatment as well as control Group 4 performed better than expected while Group 3 (control) performed poorer than expected. This evidence does not support the hypothesis that S-S-S subjects would perform better.

In addition to the significant differences already reported in Item 8, and Item 11a, one other item showed a significant difference in performance of Ss on posttest results. A summary of the BOY/GIRL (Item 6) behavior appears in Table 10 and is the only evidence observed in this study that would suggest that the differences are attributable to S-S-S methodology.

Analysis of Item 6 showed that subjects in both groups receiving S-S-S treatment performed better than expected and Ss in the control groups performed poorer than expected. The hypothesis that Ss receiving S-S-S methodology would perform better on the BOY/GIRL behavior is supported.

TABLE 10

SUMMARY OF OBSERVED* VERSUS EXPECTED FREQUENCIES OF ITEM 6 ON SOCIAL INVENTORY (BOY-GIRL)

	Yes	No
Group 1	12.00 10.16	2.00 3.84
Group 2	16.00 13.06	2.00 4.94
Group 3	9.00 10.16	5.00 3.84
Group 4	8.00 11.61	8.00 4.39

*Observed frequencies are reported above expected frequencies.

TABLE 11

STABILITY COEFFICIENTS OF SELECTED ITPA SUBTESTS AND S-S-S INVENTORY SUBTESTS AND SUBTEST COMPONENTS

	Coefficient of Stability
ITPA	
Auditory Reception	.88
Visual Seq. Memory	.83
Verbal Expression	.95
S-S-S Inventory	
Colors Discrimination	.70
Colors Verbalization	.81
Colors Conceptualization	.79
Colors Total	.90
Lines Discrimination	.78
Lines Motor	.40
Lines Total	.64
Letters Discrimination	.76
Letters Motor	.87
Letters Verbalization	.77
Letters Conceptualization	.96
Letters Total	.95
Shapes Discrimination	.72
Shapes Motor	.29
Shapes Conceptualization	.27
Shapes Total	.72

TABLE 11 Continued

	Coefficient of Stability
Numbers Discrimination	.73
Numbers Motor	.87
Numbers Verbalization	.91
Numbers Conceptualization	.80
Numbers Total	.92
Curves Discrimination	.70
Curves Motor	.79
Curves Total	.77
S-S-S Total	.97

Stability Analysis of S-S-S Inventory

Pretest and posttest data from Ss in the control groups on all ITPA and S-S-S Inventory components were utilized to compute stability coefficients for these indicants. The results of the bivariate correlational analyses on these subtests and components appear in Table 11.

The analyses revealed high stability for all measures with the exception of the following S-S-S Inventory components:

--	Lines Motor	.40
--	Lines Total	.64
--	Shapes Motor	.29
--	Shapes Conceptualization	.27

DISCUSSION AND CONCLUSIONS

Results of the ITPA and S-S-S Inventory revealed no significant differences across treatment groups on any independent variables. There was no evidence to support the major hypothesis that subjects receiving S-S-S instructional methodology would score significantly higher.

It is concluded that the S-S-S instructional method did not produce meaningful changes in academic performance of pupils who received the instruction.

Results of the Social Inventory revealed that only one meaningful behavioral difference of 30 behaviors assessed was observed to support the hypothesis that subjects receiving the S-S-S method would perform better on 30 selected social skills. In light of this negligible evidence, it must be concluded that the S-S-S method did not produce meaningful change in se[illegible]

personal-social behaviors as measured by the Social Inventory.

In spite of the evidence not supporting the S-S-S method, it must be pointed out that the procedure may have subtly initiated change that would not be detected immediately. Consideration should be given to the fact that subjects assigned to S-S-S treatment groups received only 10 minutes instruction per day. In order to objectively assess the relative worth of S-S-S methodology as an alternative instructional technique, consideration should be given to employing the method for a more concentrated period of time per day.

Analysis of S-S-S Inventory as a viable educational data collection instrument revealed the rudiments of a stable procedure; however, the question of item and test validity and scoring procedures has not been established. The S-S-S Inventory is in the embryonic stage of development and results of its first major administration showed that it could be developed into a valid measurement.

RECOMMENDATIONS

The following recommendations are offered for critical consideration:

1. Because of the abbreviated time per day allocated for S-S-S methodology, any future assessment of the effect of this method as a viable alternative instructional method for TMR children must include an expansion of time allocated for instruction.
2. Revision of selected personal-social behaviors should be considered. Consideration should be given to

identification of personal-social behavioral outcomes realistically expected as a result of the S-S-S method.

3. Item and complete test validation of the S-S-S Inventory should be conducted. As indicated in pre-planning sessions, the possibility of employing a jury of nationally prominent people to assess the validity of items should be considered as well as other appropriate statistical procedures.
4. Scoring procedures for the S-S-S Inventory should be inspected and validated. An individual with specialized competencies in tests and measurement should be employed to assist in this endeavor.
5. The Lines and Motors subtests of the S-S-S Inventory should be critically reviewed. Low stability indicants in these sections contribute to a large error of measurement which make the subtests unreliable measures of change.

[illegible]
101 Logan
Atwood, Kansas 67730

March 10, 1972

Dear Director,

Would it be possible for you to send me any [illegible] information that you have about your project? I would be interested in a copy of objectives, evaluation specs and results of your Program. I feel that your projects are exciting, innovative and could be most beneficial to our School.

Being a half-time Title III Director and half-time Director of a school for trainable mentally retarded and being associated with EMR students, such materials would certainly increase my knowledge about standing programs and better help me to program for our own individual needs.

I realize that you are deeply involved in the many activities that your program sponsors, but I hope that you will take a little time to send me what information to help our projects here in Kansas.

I am enclosing a brochure to further explain our TMR program here in Atwood.

Sincerely,

NORTHWEST KANSAS - TRAINABLE
RETARDED SCHOOL

Charles M. Lovenstein

Charles M. Lovenstein, Director

CML:gs
Enclosure

OUR PROJECT IMPACT WAS PHASED OUT AS OF MAY 31, 1971 -- Mr. Bergstrom is not here at the Council Bluffs Community Schools.

DRAKE UNIVERSITY

DES MOINES, IOWA 50311

COLLEGE OF EDUCATION

30 November 1971

Dr. Alan Bergstrom
Pottawattamie County School System
Council Bluffs, Iowa 51501

Dear Dr. Bergstrom:

The Studies and Research Committee of the Iowa Council - International Reading Association is planning a publication describing reading research and/or innovative reading programs in Iowa. The Committee hopes to issue such a publication in March, 1972.

Within the publication we hope to include some reports of research or descriptions of projects which would run three or four pages in length. In addition, we plan to include short summaries of one half page or less which describe other projects and give the director's names and addresses so our readers may request further information.

Your name has been submitted to us as someone who might wish to contribute either an article or a summary for this publication. Since space is limited by the budget, we will select full project reports for inclusion on the basis of those we evaluate as having most universal interest. We will attempt to include all project summaries we receive provided they take no more than half a printed page.

In order to meet our deadline, we would appreciate receiving your manuscripts or copy by January 21, 1972. If you intend to submit a report or summary to us, please fill in the attached form and return to me as soon as possible.

Thank you in advance for helping us make our project a success.

Sincerely,

Edward E. Hakanson

Edward E. Hakanson
Chairman, Studies and Research Committee
Iowa Council, I. R. A.

EEH:pk

enc.

1003-B7726-3/72

STATE OF IOWA • DEPARTMENT OF PUBLIC INSTRUCTION
GRIMES STATE OFFICE BUILDING • DES MOINES, IOWA 50319

PAUL F. JOHNSTON • STATE SUPERINTENDENT

Iowa
a place to grow

March 20, 1972

Mr. Alan Bergstrom
Project Director
Sight, Sound, Symbol
Pottawattamie County School System
303 Park Avenue
Council Bluffs, Iowa 51501

Dear Mr. Bergstrom:

Dr. Roy Bennett, Iowa Title III Consultant, and I are in the process of putting together a booklet summarizing Title III projects in Iowa for distribution to other educators.

To assist us in this matter, would you be so kind as to write us a summary of your project? We would like the summary to run no more than about two double-spaced typewritten pages and to include such matters as a description of the project's objectives, a statement of the purpose of the project, the results of any evaluations you or others have made, and a brief description of the activities of the project.

We would also appreciate it if you could supply us with several pictures of people (students, teachers, and others) engaged in some typical activities of the project. Since we will be using these as illustrations in a printed booklet, we would like them to be as large as possible (preferably 8 x 10 inches), and they will need to be black-and-white photographic prints (rather than newspaper reproductions, for example, or color slides). You may wish to identify, on a label attached to the back of each, the persons depicted on the print.

In addition if you have any brochures of the project, we would appreciate receiving copies of them.

It will be of great assistance if you could have these materials to us by about March 31.

Sincerely yours,

Richard R. Stumbo

Richard R. Stumbo
Dissemination Coordinator

RRS/pe

MUSCATINE-SCOTT COUNTY SCHOOL SYSTEM

DEPARTMENT OF SPECIAL EDUCATION

Alpine Center, South Kimberly Road Bettendorf, Iowa 52722
Telephone Area 319 / 359-0303

Dr. Jerry B. Stout, Superintendent
Vernon Vance, Director

April 19, 1972

Mr. Alan Bergstrom
Halverson Center
Council Bluffs, Iowa

Dear Mr. Bergstrom:

Dr. Roy Bennett told me to contact you for information regarding your Sight, Sound and Symbol Project. He also said that you might be able to supply us with a copy of your program objectives.

We would like to know more about your program and would greatly appreciate any information you could supply. Thank you for your time and trouble.

Sincerely,

Robert A. Baldes

Robert A. Baldes
Program Coordinator
Clinical Speech Services

RAB/pan

PART II

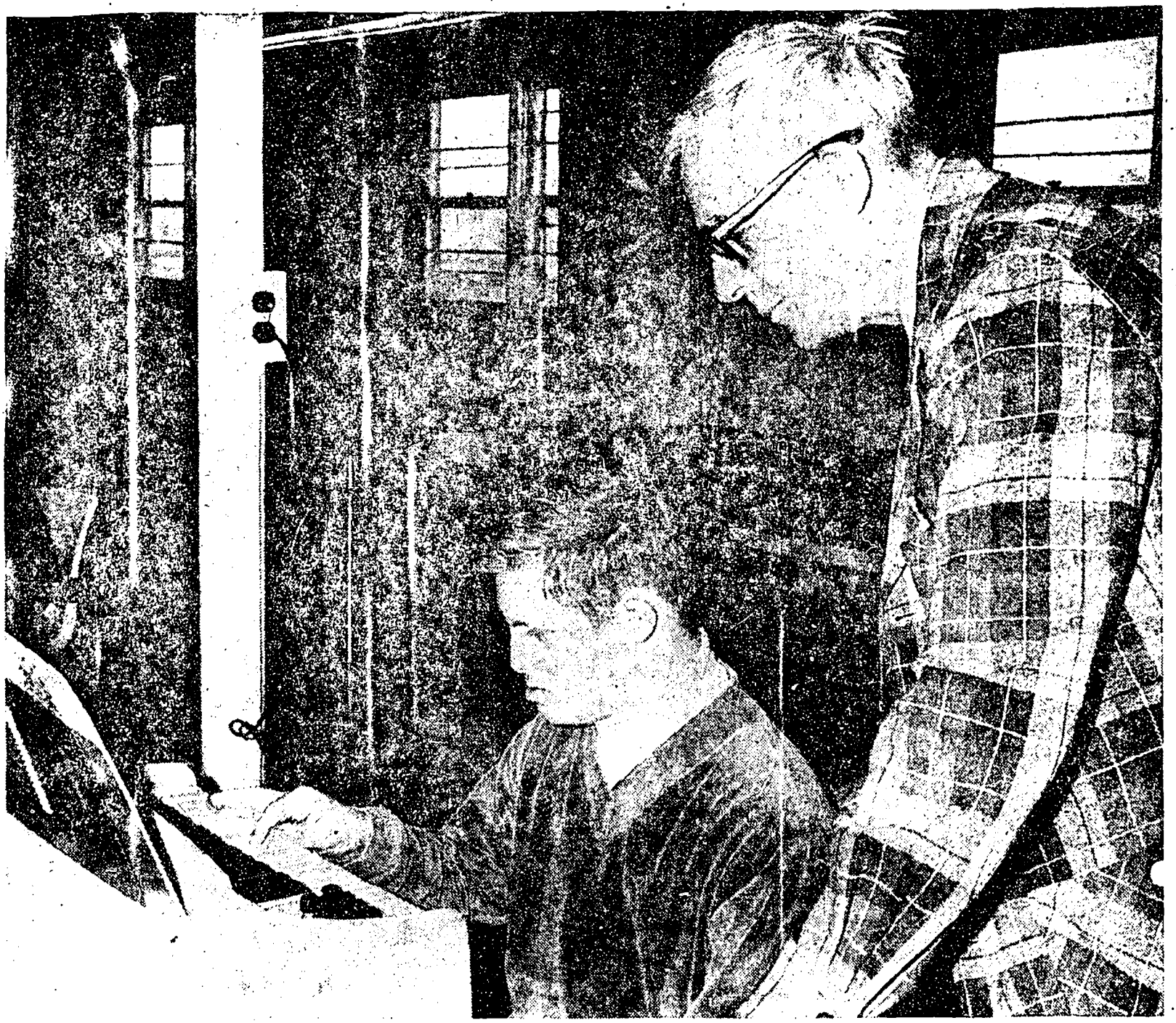
B. Dissemination Report

Section A

Several methods in regards to dissemination were initiated with this project. A one-day in-service workshop at the Holiday Inn, Council Bluffs, Iowa, was conducted. Teachers were selected on a first-come priority basis and were paid $20.00 stipends for the day. This workshop was well attended with 150 teachers and administrators present from Iowa, Nebraska, South Dakota and Alaska. Guest consultants included Dr. Michael Massarotti, University of Wyoming, Research Evaluator for the Project, and Dr. Richard Weber, Trenton State College, Author of Sight, Sound and Symbol. Materials were distributed to all the participants and everyone received a copy pertaining to the statistical results of said project.

Other methods of dissemination include a color slide presentation, VTR film and a super 8mm. film for viewing.

Due to the type of project, the staff of the Pottawattamie County School System feel the dissemination employed, successful. Results concerning the project could only be dispersed at the conclusion of the project after a statistical analysis--hence the workshop at the completion of the project.



Don . . . a student at the Area 13 Education Media Center near Treynor, demonstrates a new method of learning, using a musical keyboard. The method teaches students to identify letters of the alphabet, numerals, lines and shapes. The project, to start soon at the Glenwood State Hospital School, is scheduled to begin at Area 13 next fall. Helping Don is Alan Bergstrom, project director.—Nonpareil Photo.

Music To Teach The Mentally Handicapped

By CAROL ANDERSON
Nonpareil Staff Writer

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The go-ahead for the project came Friday when the State Board of Public Instruction approved a federal grant of $42,125 for the program to be operated through the Pottawattamie County school system.

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Visit By Webber

Some $5,000 of the $42,125 grant was allocated earlier to plan the project which included a visit by Dr. Webber a few months ago to demonstrate his program.

Child's Progress

After the child learns to identify symbols according to sound, Bergstrom, a former high school band director, said the child will progress to learning to say the symbol and then to write it without using an instrument. Bergstrom will be the project's sole teacher. He said he intends to spend 10 minutes per day four days a week with each child.

Bergstrom said a pilot project will begin immediately at the Glenwood State School to test research methods to be used later with similar children at the Area 13 Media Center.

Sixty-four children at Glenwood will be selected at random, he said, half receiving the musical teaching. The other half, the control group, will

Don . . . a student at the Area 13 Education Media Center near Treynor, demonstrates a new method of learning, using a musical keyboard. The method teaches students to identify letters of the alphabet, numerals, lines and shapes. The project, to start soon at the Glenwood State Hospital School, is scheduled to begin at Area 13 next fall. Helping Don is Alan Bergstrom, project director.—Nonpareil Photo.

Music To Teach The Mentally Handicapped

By CAROL ANDERSON
Nonpareil Staff Writer

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The go-ahead for the project came Friday when the State Board of Public Instruction approved a federal grant of $42,125 for the program to be operated through the Pottawattamie County school system.

The program, funded for 18 months, will be the first documented test of a unique method of teaching severely mentally handicapped children. The method was developed in 1958 by Dr. Richard Webber of Peoria Ill. and uses a keyboard to teach children to identify numbers, letters, colors and shapes.

Dr. Webber's Sight-Sound-Symbol program has been used in several areas in the United States and Europe, Bergstrom said, but the Area 13 experiment is unique because it will be accompanied by pre- and post-testing and recorded observations of each child. It will be the first statistical test of the method which Bergstrom says has been successful in other areas.

Visit By Webber

Some $5,000 of the $42,125 grant was allocated earlier to plan the project which included a visit by Dr. Webber a few months ago to demonstrate his program.

Funds have also been used to buy four electric organs and special music books, Bergstrom said. The program involves applying stick-on symbols of letters, numbers, colors and shapes to keys on the organ and asking the child to match the symbol with one shown him by depressing the key.

"We'll be using music to teach communication skills," Bergstrom said. "As he learns the child will be playing simple tunes — a pleasurable learning experience."

Child's Progress

After the child learns to identify symbols according to sound, Bergstrom, a former high school band director, said the child will progress to learning to say the symbol and then to write it without using an instrument. Bergstrom will be the project's sole teacher. He said he intends to spend 10 minutes per day four days a week with each child.

Bergstrom said a pilot project will begin immediately at the Glenwood State School to test research methods to be used later with similar children at the Area 13 Media Center.

Sixty-four children at Glenwood will be selected at random, he said, half receiving the musical teaching. The other half, the control group, will receive regular training. Of the experimental group, Bergstrom said 16 will receive individual lessons and the other 16 will learn in groups of four.

Six-Month Study

The Glenwood study will be conducted for about six months, he said, and next fall a similar group of 64 children from Area 13 will participate in a year-long study of the method.

Each child will be tested before participating in the project and again after completion. Also 32 seniors and graduate students in psychology from the University of Nebraska at Omaha will spend a day observing the behavior of each child before and after participating

End of Project Report
Part III
Financial
Expenditure Report of Federal Funds
Elementary and Secondary Education Act, Title III, P.L. 89-10, as amended

Name and Address of Local Agency
Pottawattamie County School System
Route #1, Council Bluffs, Iowa (51501)

Funds for Special Education Programs for Handicapped Children $ 37,120.00

PROJECT NUMBER 25-71-1004 BUDGET PERIOD: Beginning Jan. 1, 1971 Ending June 30, 1972

☒ Final Expenditure Report

EXPENDITURE ACCOUNTS		EXPENSE CLASSIFICATION							
FUNCTIONAL CLASSIFICATION	ACCT. NO.	SALARIES		CONTRACTED SERVICES	MATERIALS AND SUPPLIES	TRAVEL	EQUIP-MENT	OTHER EXPENSES	TOTAL EXPENDITURES
		PROFESSIONAL	NON-PROFESSIONAL						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Administration	100								
2. Instruction	200	$18,433.85	$7,988.33	$6,353.56	$172.85	$329.42		$772.31	$34,050.32
3. Attendance Services	300								
4. Health Services	400								
5. Pupil Transp. Serv.	500								
6. Operation of Plant	600								
7. Maint. of Plant	700								
8. Fixed Charges (Except 830)	800	1,638.92	699.00						2,337.92
9. Leasing of Facilities	830								
10. Food Services	900								
11. Student Body Activ.	1000								
12. Community Services	1100								
13. Improve. to Sites	1210C								
14. Remodeling ($2,000 or less)	1220C								
15. Capital Outlay (Equipment Only)	1230						$731.33		731.33
16. Total Local Expend.									$37,120.00
17. Negotiated Budget									37,119.57
18. Unexpended Balance of Funds Authorized for Expenditures; Total of Line 18 minus Total of Line 17 ----									.43

THIS FISCAL REPORT IS CORRECT AND THE EXPENDITURES INCLUDED HEREIN ARE DEEMED PROPERLY CHARGEABLE TO THE GRANT AWARD.

Signature of Person Authorized to Receive Grant: Calvin R. Bowen

Date Reported: 7/10/72

Form 007

END OF PROJECT
PART I
STATISTICAL REPORT
Elementary and Secondary Education Act, Title III, P.L. 89-10, As Amended

SECTION A - GENERAL PROJECT INFORMATION

1. MAJOR DESCRIPTION OF PROJECT:

Check one category below which best describes your project. If categories do not apply, check Not Applicable.

a. Central City
b. Geographically Isolated
c. Programs for Minority Groups
d. Pre-Kindergarten Programs
xx e. Programs for Handicapped
f. Not Applicable

1A. TYPE OF PROJECT:

Check the category which best describes your project.

x Innovative

_____ Exemplary

2. PROJECT TITLE Basic Communication Skills, Development for Trainable Mentally Handicapped Through the Motivation of Music

3. NAME OF APPLICANT (Local Education Agency)

Pottawattamie County School System

4. ADDRESS (Number, Street, City, State, Zip Code)

Route #1, Council Bluffs, Iowa (51501)

5. NAME OF COUNTY	6. CONGRESSIONAL DISTRICT
Pottawattamie	Fifth

7. NAME OF PROJECT DIRECTOR	8. ADDRESS (Number, Street, City, Zip Code)	PHONE NUMBER / AREA CODE
Alan Bergstrom	303 Park Avenue, Council Bluffs, Iowa 5150	322-5428 / 712

9. NAME AND POSITION OF PERSON AUTHORIZED TO RECEIVE GRANT (Please Type)	10. ADDRESS (Number, Street, City, Zip Code)	PHONE NUMBER / AREA CODE
Dr. Calvin R. Bones Pottawattamie County Superintendent	Route #1 Council Bluffs, Iowa 51501	366-0503 / 712

I hereby certify that the information contained in this application is, to the best of my knowledge, correct and the local educational agency named above has authorized me as its representative to file this application.

SIGNATURE OF PERSON AUTHORIZED TO RECEIVE GRANT	DATE SUBMITTED
Calvin R. Bones	7/10/72

Form 006

11. MAINTENANCE OF FISCAL EFFORT - AVERAGE PER PUPIL ADA / / OR ADM / / EXPEND. OF NON-FEDERAL FUNDS

a. ESTIMATED CURRENT BUDGETED EXPENDITURES FISCAL YEAR ENDING JUNE 30, 1972 — $ 27,256.74

b. PRECEDING YEAR FISCAL YEAR ENDING JUNE 30, 1971 — $ 9,862.83

c. SECOND PRECEDING YEAR FISCAL YEAR ENDING JUNE 30, _____ — $ 0

12. LIST THE NUMBER OF EACH CONGRESSIONAL DISTRICT SERVED Fifth

14. TOTAL NUMBER OF LEA'S SERVED 9

SECTION B - TITLE III BUDGET SUMMARY FOR PROJECT

1.

		Previous OE Grant Number	Beginning Date (Month, Year)	Ending Date (Month, Year)	Funds Requested
a.	Initial Application or Resubmission	0003 PG	Jan. 1, 1971	June 30, '72	$ 37,120
b.	Application for First Continuation Grant				$
c.	Application for Second Continuation Grant				$
d.	Total Title III Funds				$ 37,120

2. COMPLETE THE FOLLOWING ITEMS ONLY IF THIS PROJECT INCLUDES IMPROVEMENTS TO SITES, REMODELING, OR LEASING OF FACILITIES FOR WHICH Title III FUNDS ARE REQUESTED. LEAVE BLANK IF NOT APPROPRIATE.

TYPE OF FUNCTION	TITLE III FUNDS REQUESTED
a. REMODELING ($2,000 or less)	$
b. LEASING	$
c. IMPROVEMENTS TO SITES	$

SECTION C - TOTAL SCHOOL ENROLL. AND PROJECT PARTICIPANTS ALL PROJECTS ACTIVE IN FISCAL YEAR

1.

			PRE-KINDER-GARTEN	KINDER-GARTEN	GRADES 1-6	GRADES 7-12	OUT OF SCHOOL YOUTH	ADULTS (exclude teachers)	TOTALS	TEACHERS ENGAGED IN INSERVICE TRAINING
a.	School Enrollment in Geographic Area	(1) Public	8	9	11	36			64	7
		(2) Non-Public								
b.	Served Persons Participat. in project	(1) Public								
		(2) Non-public								
		(3) Not Enrolled								

2. TOTAL NUMBER OF PARTICIPANTS BY ETHNIC GROUPS (applicable to figures given in Sec. C1b.

White	Negro	American Indian	Puerto Rican	Oriental	Mexican American	Other (Specify)	TOTAL*
61	1	1			1		64

*Total should agree with Totals in Section C1b.

SECTION C (CONTINUED)

3. RURAL/URBAN DISTRIBUTION OF PARTICIPANTS

PARTICIPANTS	RURAL		METROPOLITAN AREA		
	FARM	NON-FARM	CENTRAL-CITY LOW-SOCIO-ECON. AREA	OTHER CENTRAL CITY	OTHER URBAN
Percent of Total Number Served (Based on total given in Section C1b.)	20	10	30	20	20

SECTION D - TITLE III PROJECT STAFF - ALL PROJECTS ACTIVE DURING FISCAL YEAR

PERSONNEL PAID BY TITLE III FUNDS

TYPE OF PAID PERSONNEL	Reg. Staff Assigned to Project				New Staff Hired For Project			
	NUMBER FULL-TIME	PART-TIME		TOTAL FULL TIME EQUIV (Col 2+4)	NO. FULL-TIME	PART-TIME		TOTAL FULL-TIME EQUIV. (Col. 6 + 8)
		NO. OF PERSONS	F.T.E.			NO. OF PERSONS	F.T.E.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. ADMINISTRATION/ SUPERVISION								
2. TEACHER:								
(a) Pre-Kindergarten								
(b) Kindergarten								
(c) Grades 1-6								
(d) Grades 7 -12								
(e) Other								
3. SUBJECT-MATTER SPECIALISTS (Artists, Scientists, Musicians etc.)					1			
4. TECHNICIANS (Audio-visual, Computer Specialists, etc.)								
5. PUPIL PERSONNEL WORKERS (Counselors, Social Workers, Psychologists, Attendance Workers)		2						
6. MEDICAL AND PSYCH. PERSONNEL								
7. RESEARCHERS, EVALUATORS						2		
8. PLANNERS AND DEVELOP								
9. DISSEMINATORS (Writer Publ. Rel. Personnel, Editors, etc.)								
10. Other Professional								
11. Para-Professional, Teacher Aides, etc.								
12. Other Non-Prof. Clerical, Bus Driver etc.					1			

SECTION E - SERVICES OFFERED, PERSONS DIRECTLY SERVED, AND ESTIMATED COST OF SERVICES - ALL PROJECTS ACTIVE DURING FISCAL YEAR - TOTAL NUMBER OF PARTICIPANTS (PERSONS MAY BE COUNTED MORE THAN ONCE)

MAJOR PROGRAMS OR SERVICES	NUMBER OF PUPILS BY GRADE LEVEL				ADULT	OUT OF SCHOOL YOUTH	NO. OF NON-PUB. PUPILS	ESTIMATED COST (Amt. may overlap)
	PRE-K	K	1-6	7-12				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Develop, Plan, Eval, or Dissem. Activities								
2. Better Util. of Inserv: Ed. of Instr. Personnel								
3. Prog. for Instit, Improv. (Org, Admin, Mgt.)								
4. Educ. Centers Serving A Large Area		3,701	23,744	21,927			2,861	$279,793
5. Improv or Expand Curr. Arts(Music, Theater,etc.)								
Language Arts								
Foreign Languages								
Mathematics								
Science								
Soc. Stds/Humanities								
Vocational/Ind. Arts								
Other-Specify ____								
6. Educ. Technology Media								
Computers				21,927			595	144,126
TV/Radio								
Other-Specify ____								
7. Improve Classroom Instr.								
Flex.Sched, Ind.Instr.								
Other-Specify ____								
8. Remed. & Spec. Education								
Handicapped	8	9	11	36				56,150
Gifted								
Remedial Reading		2,047	12,535	10,741			1,696	80,306
Speech and Hearing								
Other-Specify ____								
9. Pupil Person. Services								
Guidance		2,047	12,535	10,741				22,800
Social Work		2,047	12,535	10,741				11,500
Health								
Psychological		2,047	12,535	10,741				61,812
Attendance								
10. Comm. Serv. or Partic.								
11. Meet. Crit. Educ. Needs								
Central City								
Geograph. Isolated								
Minority Groups								
Early Childhood								
12. Summer Programs								

PART II

A. Evaluation Report

Section A

The planning and operational phases of the Basic Communication Skills Development for Trainable Mentally Handicapped Through the Motivation of Music Project have already detailed the activities of the project within the proposal design. This is readily available at the Iowa State Department of Public Instruction in Des Moines and the U. S. Office of Education in Washington, D. C., for reference purposes.

The planning phase of the project was for the basic purpose of establishing a method of instruction with some creditability for use in the evaluation of the Sight, Sound and Symbol Project developed by Dr. Richard Weber, Professor of Music, Trenton State College, Trenton, New Jersey. After this instruction was assessed and determined acceptable, using a pilot sample from the Glenwood State Hospital-School, Glenwood, Iowa, during the second semester of the 1970-71 school year, the operational phase was initiated July 1, 1971 with plans readied and a sample selected for practical research from pupils in the trainable mentally retarded program of the Pottawattamie County School System, Council Bluffs, Iowa. Four specific objectives were established for the project:

(1) To determine the amount of growth in the area of the basic communication skills experienced by individuals of the group lessons through comparison of individual pre and post-test scores.

(2) To determine the amount of growth in the areas of the basic communication skills in the individuals of the experimental group through comparisons of individual pre and post-test scores.

(3) To determine statistical correlation of the amount of growth between individuals in three groups through individual pre and post-test scores.

(4) To determine the statistical correlation and comparison of the amounts of growth between the control samples and the experimental samples through the use of pre and post-test scores.

The research design was prepared under the direction of Dr. Michael Massarotti, now with the University of Wyoming at Laramie on a

retainer contract entered into with Dr. Massarotti, making him responsible for the statistical evaluation and assessment of the results. The report as submitted by Dr. Massarotti is attached and is considered a part of this report.

Section B

The research project, "Sight, Sound and Symbol," will not be continued as an instructional method with the Pottawattamie County School System.

One very specific reason as indicated in the final report was the lack of positive results from the Sight, Sound and Symbol project. It is the opinion of the research evaluator, Dr. Michael Massarotti and staff, at the Pottawattamie County School System that more time will be required to fully assess the 35 programs. To adopt a method of doubtful educational value for instruction would not be in the best interest of the students' time.

However, it was the consensus of the Sight, Sound and Symbol staff that more extensive research would be conducted with the 35 programs.

Accompanying the final report are letters attesting to the interest in the project and requesting material about the project.