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ABSTRACT

The use of videotape, 16mm film, or personally conducted programs in the Dallas Public Library story hours was studied to determine the effectiveness of the three methods in improving the listening skills of preschool children of varying socioeconomic levels. This report of the 1981/82 research project provides information on sample size throughout the study, and on post-testing procedures using the Test of Basic Experiences (TOBE) and a final protocol test. A statistical analysis of data and findings looks at the TOBE and protocol scores as they relate to six hypotheses. Seventeen tables are included. A brief list of references precedes a discussion of the study and a summation of conclusions, implications, and recommendations for further research. A study dissemination plan is given which involves presentations, a slide/tape package, a monograph, and articles for publication; an examination of reasons why established study goals were not met; a note of the project's duration; and an explanation of expenditures. Four appendices comprise a list of films and corresponding books used at story hours during the project, a list of questions for the post-test protocol, and two sample cover letters sent with the study monograph to academic institutions and public or state libraries. (ESR)

A COMPARISON OF THE EFFECTIVENESS OF THREE TYPES OF PUBLIC LIBRARY STORY HOUR PROGRAMS IN IMPROVING THE RECEPTIVE LANGUAGE OF CHILDREN THREE, FOUR, AND FIVE YEARS OF AGE

by

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I. SUMMARY OF OVERALL PROGRESS, WITH RESULTS, AS COMPARED TO THE ESTABLISHED GOALS

The storyhour programs which began September 11, 1981, were completed on April 6, 1982. Children in the "live", the video, and the 16mm film storyhours received twenty-four weekly storyhour experiences and were each exposed to the same stories. (See Appendix A for a list of the films and stories used in storyhours). Children in the control group received no storyhour treatment.

The Test of Basic Experiences, (TOBE), 2, Revised, Language, Level K, Kindergarten/Prekindergarten, published by CTB/McGraw Hill was administered as a post-test to all children between April 13 and 26. The third and final story protocol test was administered to a representative sample of the children on April 7 and 8. Data from both test instruments were scored and analyzed; findings and conclusions were stated; and implications drawn.

A description of the final sample size, the post-testing, the analysis of data, the findings, conclusions, and discussion, implications, and recommendation for further research follows. In addition, this report describes dissemination aspects and other pertinent information.

SAMPLE:

The final sample contained 327 children. This number represents a loss of 110 children, (or 25 percent), from the 437 children who were in the original sample, who were pretested and who were attending storyhours in September, 1981. Of these 110 children, 50 subjects (or 12 percent of 437) "dropped" from the center, while 60 subjects accumulated at least five absences from storyhour sessions which eliminated them from inclusion in the statistical analysis.

In regard to daycare center affiliation, of the 327 subjects who completed the study, 129 were from Happiness House; 49 were from Children's Place; 50 were from Oak Cliff Head Start; and 99 were from Sunny View Head Start. The final sample contained 99 children who were between the ages of 36 and 47 months; 141 children who were between the ages of 48 and 57 months; and 86 children who were between the ages of 58 and 71 months, as of September 1, 1981.

As mentioned in the First Quarterly Report of November, 1981, at the time of assignment of subjects into treatment groups, it was learned that Head Start centers technically enroll no five-year old children. Therefore, age is reported in terms of age in months as noted above. See Table I, which follows, for a comparison of the sample distribution at the beginning of the study (at pretesting in September) and at the completion of the study (at post-testing in April) by daycare center affiliation and age level in months.

The final sample contained 75 subjects in the "live" treatment group; 89 in the video group, 82 in the film group; and 81 in the control group. See Table II which follows, for a description of the final sample distribution in April, 1982 by age level in months and treatment group.

As stated in the First Quarterly Report of November, 1981, the proposed goal had been to obtain a sample size of 480 children. However, this goal was deficient by 43 children (or 9 percent). Therefore, taking into account this initial shortage plus the actual "loss", a total of 153 subjects (or 32 percent) were lost. However, this percentage falls within the estimated amount noted in the addendum to the proposal -- i.e. a 40 percent loss rate.

Table I

COMPARISON OF SAMPLE BY CENTER AND AGE LEVEL --
IN SEPTEMBER, 1981 AND IN APRIL, 1982

	36-47 Months		48-57 Months		58-71 Months		Totals	
Centers	SEPT.	APR.	SEPT.	APR.	SEPT.	APR.	SEPT.	APR.
Hap. H.	57	46	64	51	40	32	161	129
Ch. P.	29	18	26	17	21	14	76	49
HS OC	20	14	42	24	18	12	80	50
HS SV	28	23	66	58	26	18	120	99
TOTALS	134	100	198	141	105	86	437	327

Table II

DESCRIPTION OF FINAL SAMPLE DISTRIBUTION
IN APRIL, 1982 BY AGE LEVEL AND TREATMENT GROUP

	36-47 Months	48-57 Months	58-71 Months	Totals
TREATMENT				
LIVE	26	29	20	75
VIDEO	29	33	27	89
FILM	25	38	19	82
CONTROL	20	41	20	81
TOTALS	100	141	86	327

POST TEST" : TOBE:

All 327 children were post-tested on the Test of Basic Experiences (TOBE), 2, Revised, Level K, Prekindergarten and Kindergarten, Language Section. Testing began April 13 and continued through April 26. The same procedures were employed in the post-testing as had been employed in the pretesting. That is, children were tested in the mornings at the four daycare sites; three-year olds were tested individually by the Principal Investigator and four-and five-year olds were tested in groups of four by a preschool teacher hired as a part-time temporary for this purpose. See prior Tables I and II for a description of the final sample distribution by age level in months, treatment group, and daycare center affiliation, post-tested on the TOBE.

POST TESTING: PROTOCOL:

In accordance with the revisions which NIE recommended, and the subsequent addendum, the reading consultant for this project, Dr. Diane Schallert, and three of her assistants administered the third and final protocol testing on April 7 and 8. The third protocol test was conducted in the same manner, at the same time of day, at the same two Dallas Public Library community library sites, and, for the most part, by the same testers as were the first and second protocol tests. That is, the final protocol test was given in the morning by four testers, three of whom had also tested the children in September and in January. Each tester worked individually with a child for approximately ten minutes, asking comprehension questions, based on the story protocol, first without and then with picture cues as "prompts", and tape recorded children's responses. As was the case in the two prior protocol administrations, the Principal Investigator selected a ten-minute story to be used as the protocol, and then told this story to children in groups of twelve children per group. While children waited to be individually tested, they played with puzzles in the library.

The storybook selected for the post-test protocol was Petunia's Treasure, written and illustrated by Roger Duvoisin. After revising the text, this story was equivalent to the two other protocol stories in regard to length, complexity of vocabulary, reading level, plot, theme, structure, number of characters and incidents, and degree of unfamiliarity to most of the subjects. See Appendix B for a list of the third protocol questions.

The original goal had been to administer the protocol test to 96 children, eight children per each of the three age levels (three-, four-, and five-year olds) per each of the four treatment groups. Both Head Start, located in the lowest socioeconomic area, and Children's Place, located in the highest socioeconomic area, were to be equally represented in terms of numbers of children who were administered the protocol.

However, the third protocol was administered to 80 children. Of these 80 subjects, 43 were from Head Start and 37 were from Children's Place. The "live", the video, and the film groups each had 21 children represented

in the third protocol, while 17 were from the control group. See Table III, which follows, for a description of the sample distribution by age level in months, treatment group, and daycare center affiliation, tested in the third protocol.

Table III

DESCRIPTION OF SAMPLE DISTRIBUTION BY AGE LEVEL IN MONTHS, TREATMENT GROUP, AND DAYCARE CENTER FOR THERD PROTOCOL

	36-47 MONTHS		48-57 MONTHS		58-71 MONTHS		SUBTOTALS		TOTALS
TRTMT.	HDST.	CH'S.P.	HDST.	CH'S.P.	HDST.	CH'S.P.	HDST.	CH'S.P.	
LIVE	4	4	4	1	4	4	12	9	21
VIDEO	3	4	3	4	4	3	10	11	21
FILM	3	3	3	4	3	5	9	12	21
CONTROL	4	3	4	2	4	0	12	5	17
TOTALS	14	14	14	11	11	12	43	37	80

Due to the fact that subjects "dropped" from daycare centers, were absent at storyhours more than three times between either the first and second or second and third protocol administrations, or were absent on the actual testing dates of any of the three protocols, comparable protocol score data for all three protocols were unavailable for 38 of the 96 subjects. There were 58 children who took the protocol pretest in September, the interim protocol test in January, and the final protocol test in April. For these 58 children, three comparative protocol test scores could be analyzed. Protocol scores for the interim protocol and either the pre or the post protocol test were available for analysis for another 23 subjects. Therefore, comparison of protocol scores representing receptive language skill acquisition after 12 storyhours presented over half the duration of the experimental treatment (i.e., 3 months) could be made for 81 subjects (58 + 23). Comparison of protocol scores representing receptive language acquisition after 24 storyhours presented over the full duration of the experimental treatment could be made for 58 subjects. See Table IV, which follows, for a description of the protocol sample by treatment group and age level in months tested on all three protocols or the interim and either the pre or the post protocol. As indicated in Table IV, scores are available from the September and the April protocol test for 16 subjects in the "live" group; 18 subjects in the video group; 14 subjects in the film group; and 10 subjects in the control group.

TABLE IV

DESCRIPTION OF PROTOCOL SAMPLE BY TREATMENT GROUP AND AGE LEVEL IN MONTHS TESTED ON ALL THREE PROTOCOLS OR ONLY ON THE INTERIM AND EITHER PRE OR POST PROTOCOL

TRTMT.	36-47 MONTHS		48-57 MONTHS		58-71 MONTHS		TOTALS	
	ALL 3 PROT.	INT & PRE OR POST	ALL 3 PROT.	INT & PRE OR POST	ALL 3 PROT.	INT & PRE OR POST	ALL 3 PROT.	INT & PRE OR POST.
LIVE	6	1	3	2	7	1	16	4
VIDEO	6	1	6	2	6	1	18	4
FILM	5	3	2	4	7	1	14	8
CONTROL	3	3	3	4	4	0	10	7
TOTALS	20	8	14	12	24	3	58	23

ANALYSIS OF DATA AND FINDINGS: TOBE SCORES:

HYPOTHESIS #1:

The primary purpose of this research was to determine the most effective of the three types of public library storyhour programs upon the acquisition of receptive language of children. Hypothesis #1 was related to this purpose. It stated that there would be a significant difference in the adjusted post-test TOBE mean scores as follows:

a. Group A ("Live" Group) will be greater than Group B (Video Group)

b. Group A ("Live" Group) will be greater than Group C (Film Group)

c. Group A ("Live" Group) will be greater than Group D (Control Group)

d. Group B (Video Group) will be greater than Group C (Film Group)

e. Group B (Video Group) will be greater than Group D (Control Group)

f. Group C (Film Group) will be greater than Group D (Control Group).

To test for Hypothesis #1--significant differences among the four treatment groups, a one-way analysis of covariance was conducted on the TOBE scores using the SPSS ANOVA procedure (Hull and Nie, 1981; Nie, et al., 1975). The two covariates were the pretest TOBE and age in months as a continuous variable. The criterion variable was the TOBE post-test (Borg and Gall, 1979; Campbell and Stanley, 1963; Huck, Cormier and Bounds, 1974; Roscoe, 1975). Data for all three hundred twenty-seven subjects were included in these analyses.

Prior to these analyses, a test for homogeniety of regression coefficients was conducted which indicated that the assumption of equal regression slopes was tenable ($p = .790$). No interaction occurred between the two covariates and the independent variable. Data relative to Hypothesis #1 are found in Tables V, VI, and VII.

TABLE V

MEANS BY TREATMENT GROUP FOR PRETEST TOBE AND AGE AS A CONTINUOUS VARIABLE AS COVARIATES AND POST-TEST AS A CRITERION VARIABLE

	COVARIATES					CRITERION VARIABLE		
	PRETEST TOBE			AGE IN MOS.		POST-TEST TOBE		
TREATMENT	N	MEAN	SD	MEAN	SD	MEAN	SD	ADJ. MEAN
LIVE	75	13.09	4.97	50.71	8.62	19.16	4.71	19.63
VIDEO	89	14.08	5.42	52.00	9.23	18.72	5.37	18.55
FILM	82	13.82	4.98	51.01	8.60	19.44	4.17	19.49
CONTROL	81	14.36	5.95	52.52	8.81	18.64	5.07	18.29

TABLE VI

SUMMARY TABLE FOR ONE-WAY ANALYSIS OF COVARIANCE WITH TWO COVARIATES (PRETEST TOBE AND AGE IN MONTHS AS A CONTINUOUS VARIABLE)

SOURCE OF VARIATION	SS	DF	MS	F	LEVEL
BETWEEN (TRTMT.)	107.40	3	35.80	2.95	.033*
WITHIN	3900.65	321	12.15	---	---
TOTAL	7680.61	326	23.56	---	---

*p < .04

TABLE VII

MULTIPLE COMPARISON USING SINGLE DEGREE OF FREEDOM F-TEST OF POST-TEST ADJUSTED MEANS FOR THE FOUR TREATMENT GROUPS

TRTMT.	ADJ. MEANS	CONTROL	VIDEO	FILM	LIVE
		18.29	18.55	19.49	19.63
CONTROL	18.29	---	3.07	4.77**	5.76***
VIDEO	18.55		---	.23	3.94*
FILM	19.49			---	.07
LIVE	19.63				---

*p < .05

**p < .04

***p < .02

df = (1,321)

Significant differences were found in the one-way analysis of covariance in the adjusted post-test TOBE mean scores among treatment groups (df = 3,321; F = 2.95; p < .04). Specific multiple comparisons using "simple" contrasts, or protected t-tests between treatment groups were conducted to determine where the group differences were. Results indicated that significant differences existed between the control group

and the "live" group (df = 1,321; F = 5.76; $p < .02$); between the control group and the film group (df = 1,321; F = 4.77; $p < .04$); and between the video group and the "live" group (df = 1,321; F = 3.94; $p < .05$). The adjusted post-test TOBE mean for the "live" group was 19.63; for the film group 19.49; for the video group 18.55; and for the control group 18.29. Both the "live" and the film storyhour methods were significantly more effective than the control, and the "live" storyhour method was significantly more effective than the video storyhour method in the acquisition of receptive language skills, as measured by the TOBE, when initial differences among treatment groups in pretest TOBE scores and in age in months were controlled.

Therefore, storyhours methods, in order of effectiveness, in receptive language acquisition from highest to lowest, were: "live", film, video, and control, as measured by the TOBE data. In regard to Hypothesis #1, then, the following were found to be true. There were significant differences in the adjusted post-test TOBE mean scores such that: Group A ("Live" Group) was greater than Group B (Video Group); Group A ("Live" Group) was greater than Group D (Control Group); and Group C (Film Group) was greater than Group D (Control Group).

Hypothesis #2:

A secondary purpose of this research was to determine the most effective of the three types of public library storyhour programs upon the acquisition of receptive language of three-year old children; of four-year old children; and of five-year old children. Hypothesis #2 was related to this purpose. It stated that significant differences in the adjusted post-test TOBE mean scores would hold for three-year old children, for four-year old children, and for five-year old children. No analysis was made to determine this hypothesis, since age in months as a continuous variable was used as a covariate in the one-way analysis of covariance to test differences between storyhour treatment groups. Age in months was used as a covariate variable rather than as a classification variable because it was necessary to equate groups according to age, since no children from Head Start centers were technically five years of age. Yet children from Children's Place and Happinesss House were five years of age. The fact that some Head Start children were younger would have probably placed them at a comparative disadvantage in terms of lower test scores, had not age in months been used as a covariate.

Hypothesis #3:

Another secondary purpose of this research was to determine if receptive language skills would change for three-year olds, four-year olds, and five-year olds over the period of the study. Hypothesis #3 was related to this purpose. It stated that the post-test TOBE mean scores would be significantly greater than the pretest TOBE mean scores for three-year olds, four-year olds, and five-year olds. To test for Hypothesis #3, differences between TOBE means were analyzed by using t-tests for correlated samples. Data for all three hundred twenty-seven subjects were included in these analyses. Data relative to Hypothesis #3

are found in Table VIII.

TABLE VIII
T-TEST FOR PRE AND POST TOBE FOR THREE AGE LEVELS IN YEARS

		PRE TOBE		POST TOBE			
AGE	N	MEAN	S.D.	MEAN	S.D.	t	LEVEL
3 YR.	100	10.98	4.15	16.76	4.16	17.38	.001*
4 YR.	183	13.73	4.61	18.90	4.75	15.67	.001*
5 YR.	44	20.91	4.11	24.41	1.34	6.51	.001*

*$p < .01$

Results indicated that post-test TOBE means were significantly greater than pretest TOBE means for three-year olds (df = 99; t = 17.38); for four-year olds (df = 182; t = 15.67); and for five-year olds (df = 43; t = 6.51). The level of significance was .01. Receptive language, as measured by the TOBE, significantly improved for three-year old, for four-year old, and for five-year old children over the period of the study. Three-year olds experienced a mean gain on the TOBE of 5.78 points; four-year olds experienced a mean gain of 5.17 points; five-year olds experienced a mean gain of 3.50 points. In regard to Hypothesis #3, the post-test TOBE mean scores were significantly greater than the pretest TOBE mean scores for three-year olds, for four-year olds, and for five-year olds.

Hypothesis #4:

Another main purpose of this research was to determine if there was a difference in the receptive language of children three, four and five years of age who attended public library storyhour programs as compared to children the same age who did not attend storyhour programs. Hypothesis #4 was related to this purpose. It stated that the adjusted post-test TOBE mean scores of children in the experimental groups as a whole will be significantly greater than the adjusted post-test TOBE mean scores for children in the control group, and that this difference would hold for children ages three, four and five. To test for Hypothesis #4, a complex multiple comparison was conducted using the SPSS ANOVA procedure with "difference" contrasts. Data for all three hundred twenty-seven subjects were included in this analysis. Means relative to Hypothesis #4 are found in Table V.

Results indicated that the adjusted post-test TOBE mean scores for an equally weighted combination of the three experimental groups were significantly greater than the adjusted post-test TOBE mean scores for the control group (df = 1,321; F = 4.34; $p < .04$). Therefore, in regard to Hypothesis #4, there was a significant difference in the receptive

language of children, as measured by the TOBE, who attended storyhour treatment as a whole, as compared to children the same age who did not attend storyhours, when initial differences among treatment groups in pretest TOBE scores and in age in months were controlled. Since age in months was used as a covariate, no qualifying statement can be made in regard to whether this finding holds for three-, four-, and five-year old children, as originally stated in the hypothesis.

Hypothesis #5:

Hypothesis #5 stated that there will be no significant difference in mean gain scores on the TOBE between Head Start (lower socioeconomic level) and non-Head Start (higher socioeconomic level) children who are three and four years of age in the "live," the video, the film, and the control group. Testing for Hypothesis #5 involved conducting t-tests for independent samples in order to compare the TOBE mean gain scores for each of the four treatment groups for the combined total of three- and four-year old children in Head Start centers (lower socioeconomic level) with the TOBE mean gain scores for each of the four treatment groups for the combined total of three- and four-year old children in non-Head Start centers (higher socioeconomic level). As mentioned previously, no children from Head Start centers were technically five years of age as of September 1, 1981. For this reason, five-year old children were not included in these particular analyses. Data for two hundred eighty-eight subjects were included in these analyses. Data relative to Hypothesis #5 are found in Tables IX, X, and XI.

TABLE IX

PRE AND POST TOBE MEANS FOR FOUR TREATMENT GROUPS FOR THREE- AND FOUR-YEAR OLD CHILDREN IN HEAD START CENTERS (LOWER SOCIOECONOMIC LEVEL)

		PRE TOBE		POST TOBE	
TREATMENT GROUP	N	MEAN	S.D.	MEAN	S.D.
LIVE	36	10.33	3.54	16.54	4.72
VIDEO	43	10.81	3.86	15.56	4.91
FILM	35	11.54	3.60	16.57	3.55
CONTROL	35	11.83	4.13	15.00	3.84

TABLE X

PRE AND POST TOBE MEANS FOR FOUR TREATMENT GROUPS FOR THREE- AND FOUR-YEAR OLD CHILDREN IN NON-HEAD START CENTERS (HIGHER SOCIOECONOMIC LEVEL)

		PRE TOBE		POST TOBE	
TREATMENT GROUP	N	MEAN	S.D.	MEAN	S.D.
LIVE	30	14.33	4.47	20.83	3.28
VIDEO	33	15.55	4.28	20.45	3.94
FILM	37	14.78	5.00	20.95	3.28
CONTROL	34	13.71	5.35	20.26	4.06

TABLE XI

T-TEST FOR MEAN GAIN ON THE TOBE FOR THREE- AND FOUR-YEAR OLD HEAD START (LOWER SOCIOECONOMIC LEVEL) AND NON-HEAD START (HIGHER SOCIOECONOMIC LEVEL) CHILDREN IN THE FOUR TREATMENT GROUPS

	HEAD START (LSEL)			NON-HEAD START (HSEL)				
TRTMT.	N	MEAN GAIN	S.D.	N	MEAN GAIN	S.D.	t	LEVEL
LIVE	36	6.22	3.68	30	6.50	3.90	.30	.77
VIDEO	43	4.77	4.94	33	4.91	3.57	.16	.87
FILM	35	5.03	3.92	37	6.16	3.73	1.26	.21
CONTROL	35	3.17	4.20	34	6.56	3.61	3.59	.001*

*$p < .01$

Results indicated no significant differences in mean gain scores on the TOBE between Head Start children (lower socioeconomic level) and non-Head Start children (higher socioeconomic level) who were three and four years of age, in the "live" group ($df = 64$; $t = .30$; $p = .77$); in the video group ($df = 74$; $t = .16$; $p = .87$); and in the film group ($df = 70$; $t = 1.26$; $p = .21$). There was no significant difference in mean gain in receptive language acquisition, as measured by the TOBE between Head Start children (lower socioeconomic level) three and four years of age who attended storyhours and non-Head Start children (higher socioeconomic level) the same age who attended storyhours. Head Start and non-Head Start children who were three and four years of age in the "live", video,

and the film groups improved equally in their respective groups.

Results also indicated a significant difference in the mean gain scores on the TOBE between Head Start children (lower socioeconomic level) who were three and four years of age in the control group and non-Head Start children (higher socioeconomic level) who were three and four years of age in the control group ($df = 67$; $t = 3.59$; $p < .001$). The level of significance was .01. The mean gain on the TOBE for three- and four-year old Head Start children in the control group was 3.17; while the mean gain on the TOBE for three- and four-year old non-Head Start children in the control group was 6.56. Mean gain in receptive language acquisition, as measured by the TOBE, was significantly greater for three- and four-year old non-Head Start children (higher socioeconomic level) in the control group than for Head Start children (lower socioeconomic level) the same age in the control group. Non-Head Start children three and four years of age who did not attend storyhours achieved significantly greater mean gains in receptive language as measured by the TOBE than did Head Start children the same age who did not attend storyhours.

In regard to Hypothesis #5, there was no significant difference in the mean gain scores on the TOBE between Head Start (lower socioeconomic level) and non-Head Start (higher socioeconomic level) children who were three and four years of age in the "live" group (Group A); in the video group (Group B); and in the film group (Group C).

ANALYSIS OF DATA AND FINDINGS: PROTOCOL SCORES:

Hypothesis #1:

One-way analysis of covariance was also conducted on the protocol data to test Hypothesis #1, in order to determine the most effective of the three types of public library storyhour programs upon the acquisition of receptive language of children. The SPSS ANOVA procedure was used. The two covariates were the protocol pretest and age in months as a continuous variable. The criterion variable was the protocol post-test. Data for fifty-eight subjects were included in these analyses. As previously mentioned, protocol scores were expressd in terms of proportions.

Prior to this analysis, a test for homogeniety of regression coefficients was conducted, which indicated that the assumption of equal regression slopes was tenable ($p = .109$). Therefore, no interaction occurred between the two covariates and the independent variable. Data relative to Hypothesis #1 are found in Tables XII and XIII.

TABLE XII

MEANS (EXPRESSED IN TERMS OF PROPORTIONS) BY TREATMENT GROUP FOR PRETEST PROTOCOL AND AGE IN MONTHS AS A CONTINUOUS VARIABLE AS COVARIATES AND POST-TEST PROTOCOL AS A CRITERION VARIABLE

	COVARIATES					CRITERION VARIABLE		
	PRE-TEST PROT.			AGE IN MOS.		POST-TEST PROTOCOL		
TRTMT.	N	MEAN	S.D.	MEAN	S.D.	OBS. MEAN	S.D.	ADJ. MEAN
LIVE	16	.46	.30	52.06	11.32	.50	.26	.49
VIDEO	18	.45	.28	53.50	8.40	.58	.26	.57
FILM	14	.47	.32	53.79	11.36	.57	.29	.55
CONTROL	10	.44	.22	52.30	8.53	.50	.18	.55

TABLE XIII

SUMMARY TABLE FOR ONE-WAY ANALYSIS OF COVARIANCE WITH TWO COVARIATES (PRETEST PROTOCOL AND AGE IN MONTHS AS A CONTINUOUS VARIABLE)

SOURCE OF VARIATION	SS	DF	MS	F	LEVEL
BETWEEN (TRTMT.)	.06	3	.02	1.02	.138
WITHIN	.49	52	.01	---	---
TOTAL	3.64	57	.06	---	---

No significant differences were found in the adjusted post-test protocol means among treatment groups ($df = 3,52$; $F = 1.02$; $p = .138$). Therefore, on the basis of the protocol data, in regard to Hypothesis #1, no particular method of storyhour was more effective than another upon the acquisition of receptive language of children, when initial differences among treatment groups in the pretest protocol scores and in age in months were controlled.

Hypothesis #2:

Hypothesis #2, regarding the most effective of the three types of public library storyhour programs upon the acquisition of receptive language of three-year old, four-year old, and five-year old children was not tested using protocol data, due to the fact that age in months was used as a covariate rather than as a classification variable in testing for Hypothesis #1. As stated previously, age in months was used as a covariate rather than as a classification variable because it was necessary to equate groups according to age, since none of the children from Head Start centers were technically five years of age.

Hypothesis #3:

Hypothesis #3 stated that the post-test protocol mean scores would be significantly greater than the pretest protocol mean scores for three-year olds, four-year olds, and five-year olds. In order to determine if receptive language skills changed for three-year olds, four-year olds, and five-year olds over the period of the study, in terms of protocol data, significant differences between the pretest protocol means and the post-test protocol means were analyzed by using t-tests for correlated samples. Data for all fifty-eight protocol subjects were included in these analyses. Data relative to Hypothesis #3 are found in Table XIV.

TABLE XIV

T-TEST FOR PRE AND POST PROTOCOL (EXPRESSED IN TERMS OF PROPORTION SCORES) FOR THREE AGE LEVELS IN YEARS

		PRETEST		POST TEST			
AGE	N	MEAN	S.D.	MEAN	S.D.	t	LEVEL
3 YR.	20	.22	.18	.33	.18	4.88	.001*
4 YR.	28	.49	.24	.59	.19	3.65	.001*
5 YR.	10	.80	.10	.86	.05	3.02	.014*

*$p < .02$

Results indicated that protocol post-test means were significantly greater than protocol pretest means for three-year olds ($df = 19$; $t = 4.88$); for four-year olds ($df = 27$; $t = 3.65$); and for five-year olds ($df = 10$; $t = 3.02$). The level of significance was .02. Receptive language, as measured by the protocol, significantly improved for three-year old, four-year old, and five-year old children over the period of the study. Three-year olds experienced a mean gain of .11 on the protocol; four-year olds experienced a mean gain of .10; and five-year olds experienced a mean gain of .06. In regard to Hypothesis #3, the post-test protocol mean was significantly greater than the pretest protocol mean for three-year olds, for four-year olds, and for five-year olds.

Hypothesis #4:

Hypothesis #4 stated that the adjusted post-test protocol mean scores of children in the experimental group as a whole would be significantly greater than the adjusted post-test mean scores for children in the control group, and that this difference would hold for children ages three, four, and five. This hypothesis was not tested using protocol data, since it would involve a specific multiple comparison follow-up test between the adjusted post-test protocol mean scores of children in the control group and the adjusted post-test protocol mean scores of an equally weighted combination of children in the three experimental groups

as a whole, and in testing protocol data for Hypothesis #1, no significant differences were found in the adjusted post-test protocol means among the four treatment groups. Since no significant difference was found for the main effect of treatment group in regard to protocol data, follow-up comparisons between specific groups were not made.

Hypothesis #5:

Hypothesis #5 pertained only to TOBE data.

Hypothesis #6

Hypothesis #6 stated that there would be no significant difference in the protocol mean scores between three- and four-year old Head Start (lower socioeconomic level) and non Head Start (higher socioeconomic level) children, regardless of treatment group. The purpose which related to this hypothesis was to determine if three- and four-year old children from varying socioeconomic levels performed equally in terms of receptive language acquisition, regardless of treatment group. To determine this, according to protocol data, a three-way analysis of variance (4 x 2 x 3) (treatment group by center or socioeconomic level by test) with repeated measures on the last dimension, was conducted on the protocol data. The "unweighted means solution" for unequal cell frequencies was used. This analysis was made to determine if there were significant differences in protocol means before prompting for each of these three independent variables: (1). treatment group (Since the one-way analysis of covariance procedure previously conducted had already determined that no significant differences existed among treatment groups, this present three-way analysis of variance was conducted to verify this initial finding); (2). center or socioeconomic level (As has been previously defined, Children's Place was considered to be of a higher socioeconomic level, while Head Start was considered to be of a lower socioeconomic level. Also, as stated earlier, Happiness House Center did not participate in the protocol testing.); and, (3). test (As described previously the protocol test was administered three times - i.e. - as a pretest, as an interim test, and as a post-test, whereas the TOBE test was administered only as a pretest and as a post-test). In order to include the interim protocol test in the analysis of data, the three-way analysis of variance with repeated measures on the dimension of test, was conducted. Data for thirty-three protocol subjects--i.e., three- and four-year olds only, were included in these analyses. Data relative to these analyses are found in Tables XV, XVI, and XVII.

A significant main effect was found for the second factor of center or socioeconomic level ($df = 1,25$; $F = 9.29$; $p < .01$). Subjects in Children's Place (higher socioeconomic level) obtained an unweighted mean score of .41, while subjects in Head Start (lower socioeconomic level) obtained an unweighted mean score of .20. Therefore, in regard to Hypothesis #6, three- and four-year old children in the higher socioeconomic level (Children's Place Center) performed significantly better in receptive language, as measured by the protocol test, than did subjects in the lower socioeconomic level (Head Start Center) who were

the same age. This finding held regardless of test or treatment group, as indicated by the lack of significant interaction between center (socioeconomic level) and test, and between center (socioeconmic level) and treatment group, respectively.

No significant main effect was found for the first factor of treatment group (df = 3,25; F = .62; p = .609). A significant main effect was found for the third factor of test (df = 2,50; F = 53.45; $p < .01$). The overall unweighted mean for the protocol pretest was .20; for the protocol interim test was .32; and for the protocol post-test was .41. No interaction occurred between the test and treatment group, or between center (socioeconomic level), test, and treatment group.

TABLE XV

MEANS (EXPRESSED IN TERMS OF PROPORTIONS) AND STANDARD DEVIATIONS FOR THREE-WAY ANALYSIS OF VARIANCE FOR TREATMENT GROUPS, CENTERS (OR SOCIOECONOMIC LEVEL) AND TEST, FOR THREE- AND FOUR-YEAR OLD CHILDREN ON THE PROTOCOL TEST

						OVERALL TRTMT.	
TRTMT.	CTR.		PRE	INT	POST	UNW. MEAN	S.D.
LIVE	C.P. (HSEL) N = 4	MEAN	.27	.43	.41	.32	.25
		S.D.	.24	.30	.25		
	H.S. (LSEL) N = 5	MEAN	.21	.30	.33		
		S.D.	.26	.29	.21		
VIDEO	C.P. (HSEL) N = 6	MEAN	.43	.61	.65	.37	.29
		S.D.	.31	.18	.17		
	H.S. (LSEL) N = 6	MEAN	.05	.14	.33		
		S.D.	.05	.13	.20		
FILM	C.P. (HSEL) N = 2	MEAN	.11	.27	.49	.23	.15
		S.D.	.03	.11	.27		
	H.S. (LSEL) N = 4	MEAN	.10	.16	.27		
		S.D.	.07	.14	.13		
CONTROL	C.P. (HSEL) N = 4	MEAN	.30	.42	.55	.29	.23
		S.D.	.21	.20	.18		
	H.S. (LSEL) N = 2	MEAN	.03	.17	.27		
		S.D.	.04	.09	.12		
OVERALL TEST UNW. MEAN			.20	.32	.41		
OVERALL TEST S.D.			.23	.25	.22		

TABLE XVI

SUMMARY TABLE FOR THREE-WAY ANALYSIS OF VARIANCE BY TREATMENT GROUP, CENTER (OR SOCIOECONOMIC LEVEL), AND PROTOCOL TEST (WITH TEST AS THE REPEATED MEASURE) FOR THREE- AND FOUR-YEAR OLD CHILDREN

SOURCE OF VARIATION	SS	DF	MS	F	LEVEL
BETWEEN SUBJECTS	4.72	32	--	--	--
TREATMENT GROUP	.20	3	.07	.62	.609
CENTER (SEL)	.99	1	.99	9.29	.005*
TRT. GRP. X CTR. (SEL)	.31	3	.10	.98	.418
ERROR BETWEEN	2.66	25	.11	--	--
WITHIN SUBJECTS	1.25	66	--	--	--
TEST	.73	2	.36	53.45	.001*
TRT. GRP. X TEST	.06	6	.01	1.54	.184
CENTER (SEL) X TEST	.01	2	.01	.96	.391
TRT. X CTR. (SEL) X TEST	.05	6	.01	1.20	.323
ERROR WITHIN	.34	50	.01	--	--

*$p < .01$

TABLE XVII

COMBINED UNWEIGHTED MEANS (EXPRESSED IN TERMS OF PROPORTIONS) AND STANDARD DEVIATIONS FOR THREE PROTOCOL TESTS FOR HEAD START (LSEL) AND CHILDREN'S PLACE (HSEL) CENTERS FOR FOUR TREATMENT GROUPS FOR THREE- AND FOUR-YEAR OLD CHILDREN

	CHILDREN'S PLACE (HSEL)			HEAD START (LSEL)		
TREATMENT GROUP	N	UNW. MEAN	S.D.	N	UNW. MEAN	S.D.
LIVE	4	.37	.25	5	.28	.24
VIDEO	6	.56	.24	6	.17	.18
FILM	2	.29	.18	4	.18	.13
CONTROL	4	.42	.21	2	.16	.13
	16			17		
OVERALL CENTER		.41			.20	
OVERALL CENTER			.22			.17

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CONCLUSIONS, DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS FOR FURTHER RESEARCH

Conclusions:

A summarization of the findings, in regard to receptive language acquisition, from both the protocol and the TOBE data is as follows:

1. "Live" and film public library storyhours are the most effective methods as measured by the TOBE, with "live" storyhours more effective than film storyhours.

2. Both "live" and film storyhours are significantly more effective than no storyhours, as measured by the TOBE.

3. Any type of storyhour is more effective than no storyhour, as measured by the TOBE.

4. "Live" storyhours are significantly more effective than video storyhours, as measured by the TOBE.

5. Video storyhours are not significantly more effective than no storyhour experience, as measured by the TOBE.

6. Protocol data were not sensitive to any differences between storyhour treatment groups.

7. Children of all age levels significantly improved over the period of the study, as measured by both the TOBE and the protocol data, with younger children attaining a greater mean gain than older children.

8. The performance of three- and four-year old non-Head Start (higher socioeconomic level) children on the protocol was significantly better than the performance of Head Start children (lower socioeconomic level) who were the same age. This finding held regardless of treatment group.

9. Both Head Start (lower socioeconomic level) and non-Head Start (higher socioeconomic level) children three and four years of age, in each of the three experimental treatment groups, improved equally on the TOBE.

10. Non-Head Start (higher socioeconomic level) three- and four-year old children in the control group achieved a significantly greater gain on the TOBE than Head Start (lower socioeconomic level) children in the control group who were the same age.

Discussion: Storyhour Methods:

Hypothesis #1 stated that storyhours would rank in this order from highest to lowest, in terms of effectiveness upon the acquisition of children's receptive language: "live", video, film, and control. This

hypothesis had included that video storyhours would rank second in effectiveness and would be significantly more effective than film storyhours, or than no storyhours (control group) in the acquisition of children's receptive language. However, on the basis of the one-way analysis of covariance of the TOBE data, storyhours ranked in this order of effectiveness, from highest to lowest: "live", film, video, and control. In other words, video storyhours (not film storyhours) ranked third. Moreover the TOBE analysis resulted in finding no significant difference between the video group and the control group.

At least part of the reason for this finding (i.e., that film storyhours rather than video storyhours ranked third), and consequently hypothesized comparisons between groups involving those two types of storyhours were found to be untenable, may be due to the fact that children in the film storyhours had the advantage of viewing a larger image than did the video group. The films were "blown up" on a sizeable portion of a wall or screen, whereas the video group saw a small image on a 21" television screen.

Another reason for the discrepancy between the first hypothesis and the findings based on the TOBE data may be that the video group had the disadvantage of viewing a videotape produced with only one camera. This meant children in the video group usually saw either a close-up of the storyteller telling a story or a close-up of the book illustrations, but not both storyteller and book illustrations simultaneously. Also, the "live" audience was seen on the television screen by the video group only between stories when finger plays or similar "stretching" activities were done.

If the video storyhour had been "enhanced" by producing it with two cameras simultaneously and then the videotape was shown on a large video screen (blown up), the videotaped storyhour method might have been found to be equally effective with the film method in terms of acquisition of children's receptive language. However, neither of these two "improvements" were made in this study, since the purpose was to make the video storyhour as closely as possible resemble what children would see on cable television if they viewed storyhours from their homes or from a daycare center.

Still another contributing factor toward the increased effectiveness of the film storyhour in comparision to the video storyhour, according to the TOBE data, may be related to this fact observed by the Principal Investigator (storyteller). That is, children from Head Start centers (primarily Black) seemed to particularly enjoy the film storyhours, especially when they included background music in the soundtrack. Not only did Head Start children almost always clap after each film each week, but they also spontaneously moved their torso, sang, or clapped in seemingly perfect rhythm to the musical beat when music was included during or after the actual story on film. Since "live" storyhours did not include music, naturally the videotaped storyhours (produced during the "live" ones) did not include music either.

At any rate, the fact that Head Start children seemed to be naturally attuned to music and at least outwardly seemed to listen more attentively when films included music, could be useful in developing further research designs. Advantage might be made of Head Start children's seemingly spontaneous ability and proclivity toward rhythm and music, in further studies of the comparative effectiveness of various methods of teaching and learning.

In regard to the video group, children seemed to listen more attentively when the storyteller invited active involvement through finger plays; asking introductory questions about the story, such as identifying story characters; and suggesting that children help tell the story by repeating a common portion of the dialogue or sound effects. However, in portions of the storyhour during which none of these techniques were implemented, the attention of the video audience seemed to dwindle. Therefore, video storyhours might be more effective if the amount of audience interaction were increased. The innovative capability of cable television's "interactive cube" technique might be one feasible method of incorporating children's active participation in the storyhour programs on the screen. While greater audience interaction might also increase the effectiveness of a "live" storyhour, the "live" group storyteller does have the advantage of being able to gauge the attention of the particular audience before him/her, and tailor fit interaction techniques to the needs of the moment -- which may not be identical to those of another audience at another time -- such as in the case of the video group.

Although it was not the purpose of this research to evaluate the type of storyhour which children enjoyed most, one comment seems noteworthy in regard to the expressed interests of children. Notwithstanding the fact that children in both the "live" and in the film group seemed to enjoy those particular types of storyhours more than children in the video group enjoyed video presentations, (based upon their smiles, facial expressions, verbal feedback, etc.), the adage of "the grass is always greener on the other side of the fence", seemed to be at least partially true in the case of children's occasional comments. Sometimes children in the "live" group wanted to know (forlornly) why they couldn't "watch tv stories". Sometimes video children (forlornly) wanted to be able to see "the movies on the screen." Sometimes film storyhour children wanted to "hear a story". At other times, all other possible combinations of the above were voiced. In essence, whichever types of storyhours were not designated for a particular group were just the types in which that group wanted to participate! This curious observation was learned by accident, when equipment was inadvertently visible to a storyhour audience and seen by the group for which it was not intended. For example, when the television screen used for the video group, the film screen used for the film group, or "props" used for the "live" group were left in the auditorium and a group other than the one for which the equipment was designated saw it, the types of comments mentioned above were made.

Discussion: Miscellaneous Observations:

Although it was also not the purpose of this research to evaluate a developing "sense of story" on the part of the children, this observation was noticeable. About at the midpoint of the study, two stories happened to be included which did not fit the traditional format of characters with particular problems or abilities taking actions toward a specific goal. In other words, there were no defined characters, theme, plot, consequences, etc. One such story was the cumulative tale, This Is the House That Jack Built. The other story of this type was Rich Cat, Poor Cat, by Bernard Waber. In the latter story the advantage of being a "rich cat" is continually contrasted with the disadvantages of being a "poor cat", until at the very end of the story "poor cat" is taken in by a family and becomes a "rich cat". When both stories were almost finished, two children commented: "When will the story begin?" Evidently these children could tell that a discrepancy existed somewhere, as all that seemed to be happening was that characters were being identified or their problems described with no action or dialogue.

Since storyhours took place at community library sites, and the participating children had not previously visited the library as a group from their particular daycare centers, going to the library was no doubt a first experience for many children. During the course of the project, several children delightedly told the Principal Investigator that they had come to the library that week with their parents and checked out books with a new library card. Feedback from librarians at particular community libraries verified the fact that, indeed, as a result of the project, some children, parents, and even daycare personnel had registered for library cards and become library users.

Discussion: Protocol:

No differences were found among treatment groups on the basis of the protocol test data. Yet differences among treatment groups were found on the basis of the TOBE test score data. Several factors may have contributed toward this finding. These factors may include the following: length, content, and type of protocol test in comparison to the TOBE test; possible contamination between experimental treatment and test in regard to the protocol; size of the protocol sample in comparison to the TOBE sample; ethnic identity of the testers in comparison to the children tested in the protocol; and sites for protocol testing in comparison to those used for the TOBE testing.

The protocol test may have been too lengthy, as it included forty questions. Attention span of three-year old children in particular may have been too short to even allow a serious response. (The TOBE test had twenty-six items or questions).

This problem may have been compounded since the protocol test was completely verbal, whereas the TOBE test consisted of pictures for the child to compare and then select the correct picture as a response to each test item. In addition, the protocol questions were somewhat

repetitious: (What did she decide to do next? Who came by then? What did she decide to do next?). However, no two TOBE test questions were alike in type.

Perhaps no significant difference between the experimental treatment group and the control group was found because listening to a storyteller tell a story may have been a novel experience for the control group. Any improvement in receptive language due to storyhour treatment on the part of the experimental group might have been overridden or masked by the control group's improved performance on testing. In other words, perhaps the experimental treatment contaminated the protocol testing, or vice versa. Perhaps the control group, unused to ever hearing a story at all at the library, may have increased their attentiveness to the protocol story, and hence exhibited better story recall than the experimental group(s) which had come to weekly storyhours. Similar reasoning might be applied to the video and to the film group, and could account for lack of improvement in protocol test scores over the "live" storyhour group. The video and the film group, which were both accustomed to hearing/seeing stories on the television screen or film screen, respectively, may have listened especially well to the "live" story protocol. On the other hand, the children in the "live" storyhour group may have been so accustomed to listening to a "live" story that they may not have been especially interested in hearing another story.

The size of the protocol sample was fifty-eight subjects or about fifteen percent of the total sample who were tested on the TOBE (three hundred twenty-seven children). The protocol sample size may have been too small to detect differences between the four treatment groups as well as between each of the three experimental treatment groups and the control group.

The protocol test may not have measured the same thing as the TOBE test. Therefore, similar findings would not be likely. Whereas the protocol test consisted of specific recall questions based on a particular story, the TOBE test consisted of general items or questions not necessarily presented during the storyhour treatment, but believed to be a measure of receptive language.

Head Start children performed significantly lower than non-Head Start children in the protocol, regardless of treatment group. This may have been partially due to the fact that none of the protocol testers were Black, yet one half of the sample chosen to receive the protocol were from Head Start and were Black. This could have put Head Start children less at ease than Children's Place subjects, who were almost entirely Caucasian. This possible uneasiness on the part of Head Start children taking the protocol may have been compounded for children in the control group, who were not used to coming to the library site for storyhours, and therefore, were probably not familiar with the library site at the time of the protocol testing there. Also, since the TOBE was administered at child care sites, children would not have felt this same possible uneasiness due to a strange location, during the TOBE testing, as in the protocol testing.

Implications:

1. Public libraries should offer preschool storyhours using a variety of presentation methods, but concentrating on providing "live" storyhours, since this type was found to be the most effective upon the acquisition of children's listening skills or receptive language.

2. Since there was no significant difference in the acquisition of receptive language between children who participated in "live" storyhour presentations and those children who participated in film storyhour presentations, public libraries could provide film storyhours as an acceptable substitute for "live" storyhours.

3. Since there was no significant difference in the acquisition of receptive language for those children who participated in the video storyhour and those children who did not receive public library storyhours, video storyhours are of negligible value for public libraries to provide, in regard to helping children acquire receptive language skills. However, if video storyhours were enhanced, as mentioned in the previous discussion, this might not be the case.

4. Public libraries should make special efforts to work with daycare center personnel, providing storytelling and workshop demonstrations, for example, so that daycare staff would be better able to incorporate storytelling within their daily schedule.

5. Based upon the fact that Head Start children (lower socioeconomic level) in the control group did not achieve as large a gain on the TOBE as did non-Head Start children (higher socioeconomic level) who were the same age in the control group, it becomes obvious that Head Start children need organized storyhours in order to achieve listening skills comparable to those of non-Head Start children. This is also substantiated by protocol findings. Therefore, public library storyhours should especially be provided for children of lower socioeconomic levels.

6. Since three-, four-, and five-year old children gained in receptive language over the period of the study, public library storyhour should be provided for children in each of these age levels. Moreover, since the gain in receptive language acquisition decreased with age, public library storyhours should be offered for young children (three-year olds) in particular.

Recommendations For Further Research:

1. Present 16mm film storyhours via television in order to equalize the size of the image, clarity, etc., with the video presentation. Then compare the effectiveness of both the film and the video storyhours methods upon receptive language acquisition of young children.

2. Include background music in all three methods of storyhour presentation and compare their effectiveness upon the acquisition of receptive language of young children.

3. Revise the protocol test in regard to shorter length, inclusion of pictures with each question when testing, administering it to a larger sample, etc. Then evaluate the effect of the three types of storyhours upon the acquisition of receptive language of young children.

4. Provide periodic public library storyhours via 16mm film, "live", and video tape, and at the conclusion of a series compare library usage (in regard to frequency of visits to the library, number of materials checked out--especially 16mm films, books, and videocassettes; number of library programs attended; etc.) before enrollment in storyhour and after participation in storyhour programs.

DISSEMINATION PLAN: PRESENTATIONS:

In accordance with the dissemination plan, proposals for presentation of this research at annual conferences have been submitted to professional library, education, and reading related organizations. The proposal was accepted by the National Association For the Education of Young Children (NAEYC) for presentation at the annual conference in Washington, D.C. during November 11-15, 1982. Proposals have recently been submitted to the International Reading Association for consideration in presentation at the annual convention in May, 1983. However, selections will not be made until November, 1982. The proposal has also been accepted by the Texas Association For the Education of Young Children (TAEYC) for presentation at the annual conference in October, 1982, in Fort Worth, Texas. The Association for Childhood Education International (ACEI), to which the proposal had been sent several months ago, has stated that decisions will not be made until September regarding entries to be presented at the annual Spring conference.

DISSEMINATION PLAN: SLIDE/TAPE PACKAGE:

As mentioned in the Second Quarterly Report of March, 1982, (Part III, p. 4) a slide/tape package is being developed which can be used to explain the project to any interested individuals or groups. The packet consists of 83 color slides and recorded narration on a cassette tape. The slides are packaged in a carousel and a typed copy of the script is included. Presentation time is approximately fifteen minutes. The slide/tape package is in the process of being registered for copyright in the name of the Dallas Public Library.

Thirteen copies of the slide/tape packet are being made and will be distributed as follows: one copy will be sent to the NIE Library; two copies will be sent to ERIC; one copy will be given to each of the four

participating daycare centers; two copies will be kept at North Texas State University's College of Education; three copies will be kept by the Dallas Public Library; and one copy will be sent to the Register of Copyrights at the Library of Congress. The daycare centers will use their copies to explain the project to parents, children and staff. North Texas State University will use the copies in disseminating the research findings to students and faculty. The Dallas Public Library will use their copies to explain the project to their own staff and patrons, as well as to other interested library systems nationwide. The availability of the slide/tape package will be announced in the monograph as well as in the accompanying cover letter sent with the monograph distributed to the institutions noted in the following paragraph. See Appendix C and Appendix D for the accompanying cover letter sent to either public libraries or to academic institutions, with the monograph. Availability of the slide/tape packet will also be announced in professional library journals, such as: American Libraries, Top of the News, Public Library Quarterly, Public Libraries, and Library Journal. The slide/tape packet will be available for short-term loan to other institutions at a cost of $8.00 which will cover mailing, handling, and insurance of same.

DISSEMINATION PLAN: MONOGRAPH:

Writing, printing, and distributing a monograph was stipulated by NIE as part of this grant. As of the date of this report, the completed draft of the monograph is at the Printing Department at North Texas State University. Arrangements have been made with that department to print 1,500 copies of the monograph, with the printer to do the typeset and the artwork required for photographs. The length of the monograph is 97 pages. It will include 16 black and white photographs depicting children in the various storyhour treatments, being transported in vans from the daycare centers to the library sites, etc. Approximately 50 copies of the monograph will be a mailed to major public library systems in the United States. Another 50 copies will be mailed to state libraries; 100 copies to public libraries in Texas; 150 copies to Schools of Library Science at colleges and universities in the United States; and 150 to Schools of Education at colleges and universities in the United States. The monograph is also in the process of being registered for copyright. Copyright will be jointly held in the name of the two institutions of the Dallas Public Library and North Texas State University.

In accordance with the wishes of the Dallas Public Library, and having obtained permission from Joel Anthony, Grant and Contract Specialist at NIE for this project, the Dallas Public Library will be making 1,000 additional copies of the monograph available to any interested individuals or institutions, at a cost of $4.00, which solely covers the price of production, postage, and handling. The purpose of this procedure is to allow maximum dissemination of the monograph, especially in the light of anticipated requests following the dissemination of the 500 copies freely as described above.

DISSEMINATION PLAN: ARTICLES FOR PUBLICATION:

Arrangements have been made with the editors of these two journals for the manuscripts regarding the research to be written and published: Public Libraries and Public Library Quarterly. The manuscript for the former will be approximately four pages of print and will include other related research studies. The article will appear in the Spring issue of 1983. The manuscript for Public Library Quarterly will solely deal with this research and will be longer (about eight pages of text) and more detailed. It is anticipated that additional articles will be written, especially for a readership of practitioners, in educational and reading--related journals.

II. REASONS WHY ESTABLISHED GOALS NOT MET

SAMPLE:

The size of the final sample diminished from the original number of 437 subjects to 327 subjects. Reasons for this loss include the fact that 50 subjects "dropped" out of the center (i.e., are no longer enrolled) and that 60 subjects were absent five or more times from storyhour sessions -- which eliminated their tests scores from inclusion in the analysis of data.

POST-TESTING: TOBE:

Post-testing of the subjects on the TOBE proceeded as planned, with the same two exceptions as were noted for the pretesting TOBE administration. That is, as in the pretest situation in September, children who were three years old as of September 1, 1981 were tested individually and the tester marked in the test booklet the pictured response which the child indicated by pointing with his or her finger on the page. This change was made to make the test experience more compatible with the attention span and physical capabilities of three-year old children. Also, a temporary person was hired to assist in testing because Dr. Sue Francis, a consultant named in the proposal, was unable to assist, due to her responsibilities as a school principal.

POST TESTING: PROTOCOL:

Because children were absent on the days of protocol testing, had "dropped" from the center, or had been absent from storyhours more than three times since the interim (January) protocol, 80 children rather than 96 were tested in April on the third and final protocol. For these reasons, three protocol scores (pre, post, and interim tests) were available for only 58 subjects, rather than for the goal of 96 subjects.

ANALYSIS OF DATA:

As noted in the First Quarterly Report of November, 1981 (Part II, p. 4) when the sample subjects were actually being assigned into

treatment groups in August it was learned that the Head Start centers did not have enrolled any child who is five years of age as of September 1. Therefore, children from Head Start who were designated as "five-year olds" were actually five years of age as of November 1, 1981, rather than as of September 1, 1981, which was the case for five-year olds from the non-Head Start centers.

In order to "correct" statistically for the younger age of "five"-year old children in Head Start centers, the data were analyzed using age in months as a continuous variable as a covariate. It was also noted in the First Quarterly Report that this procedure would be employed in the analysis of data. In other data analysis, however, five-year olds were excluded, in order that findings could at least be stated in terms of three-and four-year olds. In cases where differences in mean gain were analyzed separately for three-year olds, for four-year olds, and for five-year olds, the discrepancy in Head Start "five"-year olds could not affect the analysis in any way, and therefore, in this particular type of analysis, age in years for all three age levels was used.

Due to the fact that age in months was used as a covariate, rather than as a classification variable, in testing for Hypothesis #1, differences in the adjusted post-test means between treatment groups, the related Hypothesis #2, that these differences between treatment groups would hold for three-year olds; for four-year olds; and for-five year olds, was not tested. For this same reason, in regard to Hypothesis #4, that the adjusted post-test mean scores of children in the experimental groups, as a whole, would be significantly greater than the adjusted post-test means for children in the control group, the qualifying statement that "this difference would hold for children ages three, four, and five" was not tested.

The original proposal included only children of low socioeconomic status. Therefore, one of the original purposes of the study was to determine the most effective of the three types of storyhour programs in improving the receptive language of children of low socioeconomic status. However, in gathering the sample, children of varying socioeconomic status were found, as noted in the addendum to the proposal. Two daycare centers were Head Start, low socioeconomic level, by virtue of the fact that families did not pay for enrollment of children at these centers. Two other centers were non-Head Start, higher socioeconomic level, by virtue of the fact that families did pay for enrollment of children at these centers.

Therefore, the data were analyzed in order to include all subjects,--i.e., children from all four centers, representing both higher and lower socioeconomic levels. The qualifying statement in regard to which type of storyhour was most effective for subjects of a specific socioeconomic level was not tested. It was decided not to analyze the data using centers as a classification variable for two reasons: the size of each cell would be so small as to make findings questionable; the "discrepancy" in the age of "five"-year olds from Head Start centers would put the lower socioeconomic level subjects at a disadvantage and

make their overall test scores lower than those for subjects of higher socioeconomic centers in which five-year old children were actually some months older.

Yet we wanted to be able to make the best use of the fact that subjects in the sample represented varying socioeconomic levels. For this reason, Hypotheses #5 and #6 were added to the proposal, and differences in improvement in terms of mean gain scores for three-and four-year olds only, between Head Start and non-Head Start, were tested.

DURATION OF THE PROJECT:

The ending date for this grant was April 30, 1982. An extension was requested and granted through July 31, 1982. The main reasons for the extension, as described in the letter to Joel Anthony, Grant and Contract Specialist, were: additional time was needed to complete the monograph and the slide/tape presentation, neither of which had been included in the original proposal; additional time was needed to analyze the data due to the fact that the experimental treatment was begun later and therefore ended later; and also more time was needed because protocol test data was delayed in being received.

III. OTHER PERTINENT INFORMATION, INCLUDING EXPLANATION OF EXPENDITURES

The part-time temporary clerical, 20 hours per week for 32 weeks, was not hired due to the fact that assistance had not been needed. Clerical help was needed only in testing the children on the TOBE, and for this purpose, a clerical was hired for a total of 104 hours. With the unused money allocated for the clerical, the slide/tape packet was developed and additional copies of the monograph printed.

Cost of the TOBE tests increased again since January, 1982.

Although at the time the proposal for this research was written, it was anticipated that the assistance of the following two individuals as consultants would be needed but this was not the case: Dr. Sue Francis (Receptive Language and Early Childhood specialties); and Dr. Sara Lundsteen (Early Reading Behavior expertise). However, the assistance of a statistician, Dr. William Brookshire, from North Texas State University's College of Education, was needed in the analysis of data. Therefore, consultant monies were used for Dr. Brookshire rather than for Dr. Francis and Dr. Lundsteen.

Travel expenses for the subjects, i.e., reimbursement of daycare centers for mileage in transporting children in daycare vans to the library sites, was less than anticipated because the distance from centers to library sites was shorter than projected. However, travel expenditures for the Principal Investigator were greater than anticipated because more trips to North Texas State University in Denton were needed in order to: develop the slide/tape packet, write the monograph, analyze the data, and consult with the Printing Department concerning the

monograph production, as well as pick up and return the galley proofs.

The total cost of the protocol testing--development, administration and scoring by Dr. Schallert and her assistants was more than allotted, i.e., approximately $3,800.00 rather than $3,500.00, as the time for performing these tasks was underestimated.

APPENDIX A

FILMS AND CORRESPONDING BOOKS USED
AT STORYHOURS FOR THIS RESEARCH

TITLE OF BOOK/FILM	AUTHOR	FILM DISTRIBUTOR AND RUNNING TIME IN MINUTES
ALLIGATORS ALL AROUND	Sendak	Weston Woods (2)
ANANSI THE SPIDER	Mc Dermott	Texture (10)
ANATOLE	Titus	Macmillan (9)
ANDY AND THE LION	Daugherty	Weston Woods (10)
BEAST OF MONSIEUR RACINE	Ungerer	Weston Woods (9)
BIG RED BARN	Brown	Aims (8)
BLUEBERRIES FOR SAL	McCloskey	Weston Woods (9)
BREMENTOWN MUSICIANS	Grimm	Films, Inc. (16)
CAMEL WHO TOOK A WALK	Tworkov	Weston Woods (6)
CAPS FOR SALE	Slobodkina	Weston Woods (5)
CHARLIE NEEDS A CLOAK	De Paola	Weston Woods (8)
CHICKEN SOUP WITH RICE	Sendak	Weston Woods (5)
CIRCUS BABY	Petersham	Weston Woods (5)
CURIOUS GEORGE RIDES A BIKE	Rey	Weston Woods (10)
CURL UP SMALL	Warburg	Sterling (7)
DRAGON STEW	McGowen	BFA (13)
DRUMMER HOFF	Emberley	Weston Woods (6)
FAST IS NOT A LADYBUG	Schlein	BFA (11)
FIVE CHINESE BROTHERS	Bishop	Weston Woods (10)
FOOLISH FROG	Seeger	Weston Woods (8)
FOX WENT OUT ON A CHILLY NIGHT	Spier	Weston Woods (8)
FREDERICK	Lionni	Distribution 16 (6)
FROG WENT A COURTIN'	Langstaff	Weston Woods (12)
GALLANT LITTLE TAILOR	Grimm	Carman (10)
GEORGIE	Bright	Weston Woods (6)
GEORGIE TO THE RESCUE	Bright	Sterling (10)
GINGERBREAD MAN	Traditional Tale	Perspective (10)
GOGGLES	Keats	Weston Woods (6)
HANSEL AND GRETEL	Grimm	Tom Davenport (16)
HAPPY OWLS	Piatti	Weston Woods (6)
HARE AND THE TORTOISE	Aesop	Encyclopedia Britannica (11)
HAROLD AND THE PURPLE CRAYON	Leisk	Weston Woods (9)
HAROLD'S FAIRY TALE	Leisk	Weston Woods (8)
HERCULES	Gramatky	Weston Woods (11)
HOUSE THAT JACK BUILT	Traditional Tale	Sterling (6)
IRA SLEEPS OVER	Waber	Phoenix (17)
LENTIL	McCloskey	Weston Woods (9)
LEOPOLD, THE SEE-THROUGH CRUMB-PICKER	Flora	Weston Woods (9)
LETTER TO AMY	Keats	Weston Woods (7)

TITLE OF BOOK/FILM	AUTHOR	FILM DISTRIBUTOR AND RUNNING TIME IN MINUTES
LITTLE GIRL AND THE GUNNY WOLF	Traditional Tale	PCI (6)
LITTLE RED LIGHTHOUSE AND THE GREAT GRAY BRIDGE	Swift	Weston Woods (9)
LITTLE TIM AND THE BRAVE SEA CAPTAIN	Ardizzone	Weston Woods (11)
MADELINE'S RESCUE	Bemmelmans	Macmillan (7)
MAKE WAY FOR DUCKLINGS	McCloskey	Weston Woods (11)
MIKE MULLIGIN AND HIS STEAM SHOVEL	Burton	Weston Woods (11)
MILLION OF CATS	Gag	Weston Woods (10)
NOISES IN THE NIGHT	Alexander	BFA (9)
NORMAN THE DOORMAN	Freeman	Weston Woods (12)
ONE MONDAY MORNING	Shulevitz	Weston Woods (10)
ONE WAS JOHNNY	Sendak	Weston Woods (3)
ONE WIDE RIVER TO CROSS	Emberley	CRM/McGraw (6)
PETER'S CHAIR	Keats	Weston Woods (6)
PETUNIA	Duvoisin	Weston Woods (10)
PICTURE FOR HAROLD'S ROOM	Leisk	Weston Woods (6)
RICH CAT, POOR CAT	Waber	CRM/McGraw (8)
ROSIE'S WALK	Hutchins	Weston Woods (5)
SHOEMAKER AND THE ELVES	Grimm	Films, Inc. (15)
SMALLEST ELEPHANT IN THE WORLD	Tressett	Lucerne (6)
SNOWY DAY	Keats	Weston Woods (6)
STONE SOUP	Traditional Tale	Weston Woods (11)
A STORY, A STORY	Haley	Weston Woods (10)
STORY ABOUT PING	Flack	Weston Woods (10)
STREGA NONNA	De Paola	Weston Woods (9)
SWIMMY	Lionni	Distribution 16 (6)
THREE LITTLE PIGS	Traditional Tale	Walt Disney (9)
THREE ROBBERS	Ungerer	Weston Woods (6)
TIKKI TIKKI TEMBO	Mosel	Weston Woods (9)
TIME OF WONDER	McCloskey	Weston Woods (13)
WHEEL ON THE CHIMNEY	Brown	Weston Woods (7)
WHERE THE WILD THINGS ARE	Sendak	Weston Woods (8)
WHISTLE FOR WILLIE	Keats	Weston Woods (6)
WITCH WHO WAS AFRAID OF WITCHES	Low	LCA (12)

APPENDIX B
QUESTIONS FOR POST-TEST PROTOCOL

Based on: Petunia's Treasure written and illustrated by Roger Duvoisin

1. Who was the story mostly about?
2. At the beginning of the story, what was Petunia doing?
3. What did she find deep under the water?
4. What did she think (feel, say) about the treasure? -- What did she feel it would make her?
5. Where did she go after she had found the treasure trunk?
6. What did she say to the animals in the farmyard? -- What did she say to them about her money?
7. Who (what animal) talked to her?
8. What did he ask Petunia? -- What did he want her to buy for him?
9. What did he say he would do with a pair of wings?
10. What did Petunia say about the horse and the wings?
11. Who talked to her next?
12. What did he ask Petunia? -- What did he say he wanted her to buy for him?
13. Why did he need an alarm clock?
14. What did Petunia say about the alarm clock for the rooster?
15. Who talked to Petunia next?
16. What did she ask Petunia? -- What did she want Petunia to buy for her?
17. What did she say she would do with a large mirror?
18. What did Petunia say about the mirror for Clarabelle the cow?
19. Who talked to Petunia next?
20. What did he ask Petunia? -- What did he want her to buy for him?
21. What did he say he would do with the tightrope and umbrella?
22. What did Petunia say about the goat and the tightrope and umbrella?
23. Who talked to Petunia next?

24. What did he ask Petunia? -- What did he want her to buy for him?
25. What did he say he would do with a loudspeaker?
26. What did Petunia say about the loudspeaker for the dog?
27. Did Petunia buy the gifts everyone wanted right away?
28. Why not? (or Why?)
29. What happened to the animals who were waiting for their gifts?
30. Why did the animals become angry at Petrunia?
31. Why did the animals begin to fight each other?
32. How did Petunia feel when she saw all the animals fight each other?
33. What did she do? -- Where did she go?
34. What had happened to the treasure trunk?
35. How did Petunia feel when she saw that she had never had a treasure?
36. Why did she feel happy?
37. What happened when she walked into the farmyard again? -- What did Petunia tell everyone?
38. Were the animals happy or sad that Petunia no longer had a treasure?

39. What lesson did Petunia and all the animals learn from what had happened to them? (Why were all the animals happy that Petunia no longer had a treasure?)
40. What did everyone do at the very end of the story?

SUB-COMPONENTS OF STORY COMPREHENSION	QUESTION NUMBER
Character Identification	1, 7, 11, 15, 19, 23
Initiating Events	2, 3, 5, 6, 8, 12, 16, 20, 24, 27, 33, 37
Causal Connections	9, 13, 17, 21, 25, 28, 30, 31, 36, 39
Internal Reactions	4, 10, 14, 18, 22, 26, 29, 32, 35, 38
Moral or Theme	35, 36, 38, 39, 40
Action Consequences	10, 14, 18, 22, 26, 29 34, 40

APPENDIX C

COVER LETTER TO ACCOMPANY MONOGRAPH
SENT TO ACADEMIC INSTITUTIONS

The Dallas Public Library, in conjunction with North Texas State University, recently conducted a cooperative research project which concerned the effectiveness of three types of public library storyhour programs upon the receptive language (listening skills) of preschool children of varying socioeconomic levels. This research was performed pursuant to a research grant awarded by the National Institute of Education (NIE). Funding for this project and for the development and dissemination of a descriptive monograph of this study was provided by the Office of Libraries and Learning Technologies.

Enclosed is a complimentary copy of this monograph, entitled, "What Research Tells Us About Storyhours and Receptive Language," which we are sending to you in order to share the results of this research in the area of public library service to young children. We hope that you will make this monograph available to your faculty, staff and students. Additional copies of this monograph may be obtained at a cost of $4.00, which includes the cost of production, handling and mailing.

A fifteen-minute color slide/tape packet, entitled, "Storyhours Do Make a Difference," which describes the study, is also available on short-term loan, for a cost of $8.00, which includes the cost of postage, handling and insurance. Inquiries regarding the loan of this packet or additional copies of the monograph should be directed to: Dr. Frances A. Smardo, Librarian for Early Childhood Services, Dallas Public Library, 1515 Young Street, Dallas, Texas 75201.

Thank you for assisting in disseminating this information among the educational communities of colleges and universities in the United States.

Sincerely,

Richard L. Waters
Associate Director, Public Services
Dallas Public Library

Enclosure (1)

APPENDIX D

COVER LETTER TO ACCOMPANY MONOGRAPH SENT TO PUBLIC AND STATE LIBRARIES

The Dallas Public Library, in conjunction with North Texas State University, recently conducted a cooperative research project which concerned the effectiveness of three types of public library storyhour programs upon the receptive language (listening skills) of preschool children of varying socioeconomic levels. This research was performed pursuant to a research grant awarded by the National Institute of Education (NIE). Funding for this project and for the development and dissemination of a descriptive monograph of this study was provided by the Office of Libraries and Learning Technologies.

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Thank you for assisting in disseminating this information among the service areas of public and state libraries.

Sincerely,

Richard L. Waters
Associate Director, Public Services
Dallas Public Library

Enclosure (1)