August 14, 1974

To the Graduate Council:

I am submitting herewith a dissertation written by Helen Bain entitled "A Study of the Effectiveness of Language Reinforced by Simultaneous Action in Bilingual Educational Television Programs for Young Children." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Administration and Supervision.

Dewey Stollar, Major Professor

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:

Vice Chancellor
Graduate Studies and Research

B

A STUDY OF THE EFFECTIVENESS OF LANGUAGE REINFORCED BY SIMULTANEOUS ACTION IN BILINGUAL EDUCATIONAL TELEVISION PROGRAMS FOR YOUNG CHILDREN

A Dissertation

Presented for the

Doctor of Education

Degree

The University of Tennessee

Helen Bain

December 1974

ACKNOWLEDGMENTS

I am indebted to the members of my doctoral committee, Dr. Dewey Stollar, Chairman, Dr. Charles Achilles, Dr. Jerry Bellon, and Dr. William Cole for their willingness to take time from their busy schedules to serve on my committee. I am indebted to Dr. René Cardénas and Bilingual Children's Television for the use of the data.

I am grateful for the encouragement and help of Dr. Charles Achilles and Dr. Robert Roney who guided me through the doctoral dissertation process and to my friend, Jo Pacetti, who listened patiently to the accounts of my frustrations. My greatest indebtedness is to our son, David, who helped me with the tables and to my husband, D. F., who was always there to help, encourage, and reassure me.

1174040

ABSTRACT

The purpose of the study was to determine the effect of language reinforced by simultaneous action on the comprehension of television segments by Spanish, English, and bilingual speakers from four to eight years of age. Questions to be answered by this study were as follows.

Major Question

Is learning from TV segments associated with language comprehension (Spanish for Spanish-speaking children or English for English-speaking children) facilitated when the language is reinforced by simultaneous action?

Sub-Questions

1. Do children who do not understand the language used in TV segments perform better when the language is reinforced by simultaneous action?

2. Do children who do understand the language used in TV segments perform better when the language is reinforced by simultaneous action?

3. Is there a difference in the performance of children who understand the language used in TV segments when the language is reinforced by simultaneous action and the performance of children who do not understand the language that is reinforced by simultaneous action?

4. Is there a difference in the performance of children who understand either English or Spanish when both Spanish and English are used in a TV segment and when only one of the languages is used?

Related Questions

1. Is there a difference in the performance of children when the TV segment is animated and when the TV segment has professional actors?

2. Is there a difference in the performance of children when the TV segment has child actors and when the TV segment has only adult actors?

The data used were collected in seven major cities. The subjects were four-to-eight year old children who spoke Spanish or English or were bilingual, and were in nursery, kindergarten, first, or second grade. They viewed two pilot shows on different days and were individually tested immediately after each viewing. For this study 12 of the 41 segments were used, and they fell into the following categories:

Reinforced	Nonreinforced
2 Spanish	2 Spanish
2 English	2 English
2 Bilingual	2 Bilingual

The answers to the 26 questions on the 12 segments were grouped in several different combinations in order to provide answers to the questions posed by the study. They were first grouped according to Spanish, English, and bilingual TV segments with language reinforced by simultaneous action and Spanish, English, and bilingual TV segments not reinforced by simultaneous action. The answers were also grouped according to the languages spoken by the children. Another grouping divided the segments according to the type of production used, animation or professional actors. The last grouping included only two

segments: one with a child professional actor and one with two animated adult characters.

The analysis of the data involved the use of frequencies of raw scores and percentages depicted through tables and figures. The cross-tabulations were made using the Statistical Package for the Social Sciences. The nonparametric chi-square (χ^2) test was used to test for significance of differences between observed frequencies and expected frequencies where this procedure was applicable. Basic analyses involved major variables cross-tabbed with the number of correct responses to tests given by groups of pupils. Major cross-tabs were: reinforced vs. nonreinforced segments and responses of three language groups, i.e., English, Spanish, and bilingual.

An analysis of the data produced the following findings.

Major question. The χ^2 tests with a significant difference at the .001 level in the responses of the children on the reinforced and nonreinforced segments for all three language categories definitely supported the fact that children performed better when the language was reinforced by simultaneous action.

Sub-question one. Children who did not speak the language performed better when the language was reinforced by simultaneous action.

Sub-questions two and three. Children who understood the language did perform better when the language was reinforced by simultaneous action. However, the improvement in performance was less than

that of children who did not understand the language. These findings indicated the importance of language being reinforced by simultaneous action for all children, but especially for children who do not speak the language.

Sub-question four. The analysis indicated that Spanish speakers and English speakers achieved more 100 percent correct responses when the segments had only one language. However, their correct responses above the 50th percentile were higher on the bilingual segments than on the English or Spanish segments.

A comparison of the correct responses above the 50th percentile showed that bilingual speakers had the highest correct responses on all of the categories except the Spanish TV segments with the language not reinforced by simultaneous action. The Spanish speakers out-achieved the other two groups in this area. The English speakers gained the most from having the language reinforced by simultaneous action.

Related question one. There was better comprehension by children when animation was used than when professional actors were used.

Related question two. Although the scores were higher on the adult segment than on the child segment, there was not enough variety in the kind and number of segments used to make the findings meaningful.

As a result of the findings the following conclusions were reached:

1. In bilingual teaching the use of simultaneous action as a reinforcement for the language is very effective.

2. In teaching children who do not understand the language used, it seems necessary to reinforce the language by simultaneous action as much as possible.

3. Language reinforced by simultaneous action is beneficial for all learners. However, it is not as necessary for those who understand the language as it is for those who do not understand the language.

4. Language reinforced by simultaneous action is a necessary production technique for the producers of bilingual educational television programs.

5. A wide difference in the 100 percent responses and the over the 50th percentile scores of the English speakers and Spanish speakers on the bilingual TV segments did not allow a conclusive statement to be made concerning the difference in monolingual children's learning from bilingual TV segments and from Spanish TV segments and English TV segments.

6. The bilingual speakers' high achievement on the bilingual segments could be accounted for by the fact that these children were accustomed to using both languages and they were able to comprehend the segments more easily than the English and Spanish speakers who were familiar with only one of the languages.

7. One could conclude that bilingual children can comprehend, more easily or as easily, material that is presented bilingually, than material which is monolingual.

8. The results showed that young children who are bilingual can achieve as well as monolingual children, and thus teachers should encourage children to retain their bilingualism because it will be advantageous to them as they continue their education, especially in high school where second languages are generally taught.

9. Animation's effectiveness as a teaching device calls for its use in educational television in spite of its high cost. This effectiveness was great enough to warrant the concern that has been expressed nationwide about the quality of the animated cartoons presented on television, especially for an extended time on Saturday mornings. The effectiveness of animation was great enough that educational television producers should use it, even though the initial cost is greater than that of professional actors. The residual that must be paid to professional actors every time a program is shown helps to offset the difference in the cost of animation and programs using professional actors.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION TO THE STUDY	1
	Introduction	1
	Purpose	5
	Statement of the Problem	8
	Major question	8
	Sub-questions	8
	Related questions	9
	Assumptions	9
	Definition of Terms	10
	Procedures	11
	Limitations	11
	Sample	12
	Instrumentation	12
	Collection of data	12
	Treatment of data	13
	Importance of the study	13
	Organization of the Study	16
II.	REVIEW OF RELATED LITERATURE	18
	Introduction	18
	Bilingualism	19
	Widespread Use of Television	26
	Television--Friend or Foe?	28

CHAPTER PAGE

II. (CONTINUED)

Research 33

III. PROCEDURES 48

Introduction 48

Subjects 50

Variables. 57

Treatment of Data. 60

IV. PRESENTATION AND ANALYSIS OF DATA. 63

Introduction 63

A Comparison of the Composite Responses on the TV Segments with Language Reinforced by Simultaneous Action and the Composite Responses on TV Segments with Language Not Reinforced by Simultaneous Action 64

Comparison of the Composite Responses on the Spanish, English, and Bilingual TV Segments with the Language Reinforced by Simultaneous Action and on the Spanish, English, and Bilingual TV Segments with the Language Not Reinforced by Simultaneous Action 66

Comparison of the Responses of the English, Spanish, and Bilingual Speakers on the Spanish TV Segments with Language Reinforced by Simultaneous Action and on the Spanish TV Segments with the Language Not Reinforced by Simultaneous Action 75

CHAPTER PAGE

IV. (CONTINUED)

Comparison of the Responses of the English, Spanish, and Bilingual Speakers on the English TV Segments with Language Reinforced by Simultaneous Action and on the English TV Segments with the Language Not Reinforced by Simultaneous Action. 83

A Comparison of the Responses of the English, Spanish, and Bilingual Speakers on the Reinforced Bilingual TV Segments with Language Reinforced by Simultaneous Action and on the Bilingual TV Segments with the Language Not Reinforced by Simultaneous Action 92

A Comparison of the Responses of Each of the Language Groups on All Three Language Categories of TV Segments . 100

Comparison of Composite Responses on Animation Segments and Professional Actor Segments. 104

Comparison of Composite Responses on Segment with Adult Characters and Segment with Child Actor. 107

V. SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS. 108

Summary. 108

Findings 110

Factors that could have influenced some of the findings. 115

Age and grade level. 115

Animation. 117

Conclusions. 117

CHAPTER PAGE

V. (CONTINUED)

Recommendations. 119

BIBLIOGRAPHY 122

APPENDIX 128

VITA 131

LIST OF TABLES

TABLE PAGE

1. Number of Children at Each Site Tested on Two Television Shows 51
2. Grade Level of All Children Tested on Two Television Shows. . 51
3. Grade Placement of Children Tested on Two Television Shows Categorized by Language Spoken. 52
4. Age of Children Tested on Two Television Shows Categorized by Language Groups. 53
5. Surname of All the Children Tested on Two Television Shows. . 55
6. Sex of All the Children Tested on Two Television Shows. . . . 55
7. Academic Rating as Indicated by the Teachers of All Children Tested on Two Television Shows. 56
8. Language of All Children Tested on Two Television Shows . . . 58
9. Spanish, English, and Bilingual TV Segments with Language Reinforced by Simultaneous Action and Spanish, English, and Bilingual TV Segments with Language Not Reinforced by Simultaneous Action. 59
10. TV Segments Categorized by Animation and Professional Actors. 61
11. Composite Responses on TV Segments with Language Reinforced by Simultaneous Action. 65
12. Composite Responses on TV Segments with Language Not Reinforced by Simultaneous Action 65

TABLE PAGE

13. Chi Square Analysis of Composite Responses of Spanish, English, and Bilingual Segments Reinforced and Non-reinforced. 69

14. Chi Square Analysis of Spanish Segments Reinforced and Nonreinforced 82

15. Chi Square Analysis of English Segments Reinforced and Nonreinforced 91

16. Chi Square Analysis of Bilingual Segments Reinforced and Nonreinforced 99

17. The Percent of English, Spanish, and Bilingual Speakers Who Scored Above the 50th Percentile on Six Spanish, English, and Bilingual TV Segment Categories. 102

18. Comprehensive Description of the 12 TV Segments Used in This Study 105

19. Composite Responses on Animation Segments 106

20. Composite Responses on Segments with Professional Actors. . . 106

21. Composite Responses on Segment with Adult Actors and Segment with Child Actor. 107

LIST OF FIGURES

FIGURE PAGE

1. Frequency of Composite Responses on the Spanish TV Segments (El Tren and Circus) with the Language Reinforced by Simultaneous Action 67
2. Frequency of Composite Responses on the Spanish TV Segments (Redondo and San Juan) with the Language Not Reinforced by Simultaneous Action. 68
3. Frequency of Composite Responses on the English TV Segments (Talking to Mars and Toy Truck) with the Language Reinforced by Simultaneous Action 70
4. Frequency of Composite Responses on the English TV Segments (Seesaw and Mr. Bezeal) with the Language Not Reinforced by Simultaneous Action. 71
5. Frequency of Composite Responses on the Bilingual TV Segments (Haircut and Subibaja) with the Language Reinforced by Simultaneous Action 73
6. Frequency of Composite Responses on the Bilingual TV Segments (Baja 500 and Hayride) with the Language Not Reinforced by Simultaneous Action. 74
7. Frequency of Spanish Speakers' Responses on Spanish TV Segments (El Tren and Circus) with the Language Reinforced by Simultaneous Action. 76

FIGURE PAGE

8. Frequency of Spanish Speakers' Responses on Spanish TV Segments (Redondo and San Juan) with the Language Not Reinforced by Simultaneous Action 77

9. Frequency of English Speakers' Responses on Spanish TV Segments (El Tren and Circus) with the Language Reinforced by Simultaneous Action 78

10. Frequency of English Speakers' Responses on Spanish TV Segments (Redondo and San Juan) with the Language Not Reinforced by Simultaneous Action 79

11. Frequency of Bilingual Speakers' Responses on Spanish TV Segments (El Tren and Circus) with the Language Reinforced by Simultaneous Action. 80

12. Frequency of Bilingual Speakers' Responses on Spanish TV Segments (Redondo and San Juan) with the Language Not Reinforced by Simultaneous Action 81

13. Frequency of Spanish Speakers' Responses on English TV Segments (Talking to Mars and Toy Truck) with the Language Reinforced by Simultaneous Action 85

14. Frequency of Spanish Speakers' Responses on English TV Segments (Seesaw and Mr. Bezeal) with the Language Not Reinforced by Simultaneous Action 86

15. Frequency of English Speakers' Responses on English TV Segments (Talking to Mars and Toy Truck) with the Language Reinforced by Simultaneous Action 87

FIGURE PAGE

16. Frequency of English Speakers' Responses on English TV Segments (Seesaw and Mr. Bezeal) with the Language Not Reinforced by Simultaneous Action 88

17. Frequency of Bilingual Speakers' Responses on English TV Segments (Talking to Mars and Toy Truck) with the Language Reinforced by Simultaneous Action 89

18. Frequency of Bilingual Speakers' Responses on English TV Segments (Seesaw and Mr. Bezeal) with the Language Not Reinforced by Simultaneous Action 90

19. Frequency of Spanish Speakers' Responses on Bilingual TV Segments (Haircut and Subibaja) with the Language Reinforced by Simultaneous Action 93

20. Frequency of Spanish Speakers' Responses on Bilingual TV Segments (Baja 500 and Hayride) with the Language Not Reinforced by Simultaneous Action 94

21. Frequency of English Speakers' Responses on Bilingual TV Segments (Haircut and Subibaja) with the Language Reinforced by Simultaneous Action 95

22. Frequency of English Speakers' Responses on Bilingual TV Segments (Baja 500 and Hayride) with the Language Not Reinforced by Simultaneous Action 96

23. Frequency of Bilingual Speakers' Responses on Bilingual TV Segments (Haircut and Subibaja) with the Language Reinforced by Simultaneous Action 97

FIGURE PAGE

24. Frequency of Bilingual Speakers' Responses on Bilingual TV Segments (Baja 500 and Hayride) with the Language Not Reinforced by Simultaneous Action 98

CHAPTER I

INTRODUCTION TO THE STUDY

I. INTRODUCTION

> Give me your tired, your poor, your huddled masses yearning to breathe free, . . . Send these, the homeless, tempest-tost to me, I lift my lamp beside the golden door![1]

In order to be accepted on the other side of the "golden door," all cultural groups are expected to become a part of the dominant society which is Anglo-Saxon. They are required to give up their language, culture and customs. In fact, religion is the only basic difference which is allowed. The reward for this assimilation was expressed by Dr. Ling Chi Wang, Department of Asian Studies at the University of California at Berkeley, when he appeared before the Senate Subcommittee on Education of the Committee on Labor and Public Welfare in November 1973, "You know that the Chinese have had a great civilization for many thousands of years, but what is there left of it in the successful Chinese-American?" He went on to point out that Asians have sacrificed their heritage, their history, and their self-respect and as a result have a higher suicide rate than any other minority.[2]

One of the first things to be relinquished is the native language. Most Americans are content to be monolingual and expect the rest of the

---

[1] Emma Lazarus, "The New Colossus," Statue of Liberty.

[2] "Two Gut Issues on Bilingual Education Brought Out at Hearing," Education Daily (November 2, 1973), p. 5.

world to learn English. Bilingualism has been considered by many as a detriment instead of an accomplishment. Although bilingualism exists among the educated classes in other parts of the world, in the United States it is found in impoverished foreign language communities. These people have been led to believe that bilingualism is the cause of academic-intellectual difficulties and they give up their mother tongue as rapidly as possible.

Only in the last twenty years has there been any movement at all toward the acceptance of a pluralistic society. The Black Movement's insistence upon the recognition of black culture has led the way for bilingual Americans and First Americans to seek acceptance of their cultural heritage. Since the school is often the first real contact that the culturally different child has with the mainstream society, this is a key place to promote change that will improve opportunities for the bilingual child. Senator Ralph Yarborough of Texas, recognizing that additional funds would be necessary to achieve adequate bilingual education, presented Title VII of the Elementary and Secondary Education Act and worked for its passage.

Title VII was designed "to provide financial assistance to local educational agencies to develop and carry out new and imaginative elementary and secondary school programs to meet the special educational needs--of children of limited English-speaking ability in the United States. . . . 'Children of limited English-speaking ability' means children who come from environments where the dominant language is other than English."

One area selected for funding was bilingual television for children. Recognizing that 14 million persons in the United States speak Spanish, Dr. Réne Cárdenas, Director of Bilingual Children's Television, developed a Spanish bilingual television series for children from ages 4 to 8. The overall goal is to further the concept of cultural pluralism which is a recognition of the contributions of the many ethnic groups to the nation's social and cultural life. Other objectives of this series include offering English-speaking children an opportunity to become familiar with the Latin American culture and to recognize the advantages of bilingualism. The series enhances the self-image of Spanish-speaking children as they see their language and culture given a place in the education of all children.

In April 1973 when the National Education Association endorsed Bilingual Children's Television, then NEA President Catherine Barrett said: "The NEA recognizes the necessity of providing an adequate medium of nourishing cultural pluralism. It will continue to support and promote bilingualism and cultural diversity in American public education."[3]

One problem facing school systems with bilingual programs is the serious shortage of bilingual teachers. Spanish which ranks among the top five languages spoken internationally is the predominant language in existing Title VII bilingual programs. There is a serious shortage

---

[3]Réne Cárdenas and Lily Wong Fillmore, "Toward a Multicultural Society," Today's Education (September-October 1973), p. 88.

of Spanish-speaking teachers, in addition to 24 other language groups. This shortage exists because previously there has been no recognized need for bilingual teachers. In fact, until recently in Texas and six other states, a teacher could have had his license revoked and received criminal penalties if he taught bilingually.[4] The 1972 Massachusetts bilingual education law made allowance for this shortage by creating a new state certification procedure which did not require U. S. citizenship and which allowed bilingual teachers who had met some of the certification requirements to serve provisionally. There is a need for teacher education institutions to recruit and adequately train elementary bilingual teachers in order to meet the ever increasing legal requirements that bilingual programs be carried out by bilingual teachers. The University of Texas College of Education was one of the first institutions to offer a B. S. and M. A. program in bilingual education that met elementary teacher certification requirements. Mario Benitez, a member of the staff, said:

> The training of teachers for bilingual programs has become a grave concern to local, state and federal agencies. Because of the many requests for teachers in the area of bilingual education, we moved to develop a program whose need has been deeply felt throughout the southwestern United States.[5]

---

[4]Jeffery Kobrick, "The Compelling Case for Bilingual Education," Saturday Review (April 29, 1972), p. 58.

[5]Editor, "Degrees in Bilingual Education," School and Society (October 1971), p. 332.

II. PURPOSE

Every year a large number of non-English speaking children enter school unable to speak the language of the teacher and the majority of their classmates. Prior to 1968, 21 states, including California, New York, Pennsylvania, and Texas had laws requiring that all public school instruction be in English. This put the non-English speaking child at a decided disadvantage. His language was rejected and he was expected to learn to speak English as well as acquire the skills of reading and writing in this new language. Many of these children were considered to be slow learners because they did not acquire all three skills as quickly as their English-speaking classmates learned to read and write in a language they had spoken all of their lives.

The lawsuit, Diana et al. vs. State Board of Education, exposed the fact that IQ tests in English were given to Spanish-speaking children in California and they were classified as "mentally retarded." Pupils with Spanish surnames constitute 15.22 percent of the general school population in California but represent 28.34 percent of the enrollment in educable mental retardation classes. Diana who had scored only 30 on the Stanford-Binet IQ test, given in English, scored 49 points higher when the test was translated into Spanish. The court ordered the retesting and reevaluation of "some 22,000 Mexican-American students trapped in classes for the mentally retarded because they were given allegedly culturally unfair IQ tests in English instead of

Spanish."[6] It took a federal court order to stop one Texas school board from requiring that all "Spanish-surname" children spend three years in the first grade.

The curriculum of our public schools is designed for the English-speaking child and reflects a monolingual society. Adequate consideration has not been given to the education of non-English speaking children. Armando Rodriguez, Director, Office for Spanish-Speaking American Affairs, U. S. Office of Education, called for an immediate program to train 100,000 bilingual, bicultural teachers to be placed at the primary grades. He reported to the Committee,

> There is little doubt in my mind, after three years of country-wide travel and observation, that the single most destructive force against equal educational opportunity for the Mexican-American is the educational attitude of our public schools and our institutions of higher education. . . . This educational attitude is predicated on the firm, but false, belief that culturally different and linguistically different youngsters cannot or will not become successful learners in the "American" school. And that "American" school is one whose educational philosophy is monocultural and monolingual.[7]

If the child does not fit the mold, he is deficient and has to change to meet the needs of the school. Children who are culturally different are labeled culturally "deprived." Stan Steiner pointed out in La Raza: The Mexican Americans, that schools "de-educate" any child

---

[6]Mary Ellen Leary, "Are Children Who Are Tested in an Alien Language Mentally Retarded?." Hearings Before the Select Committee on Equal Educational Opportunity, Part IB Appendix (May 28, 1970), p. 418.

[7]U. S. Congress, Senate Select Committee on Equal Educational Opportunity, Part 4--Mexican-American Education, Hearing, 91st Congress, Second Session, August 21, 1970 (Washington: Government Printing Office, 1971), pp. 2594-95.

who is a part of La Raza. Non-English speaking children arrive at school to find that all subjects are taught in the English language which dominates the entire school life. They are often threatened, ridiculed and punished for speaking the only language they know. One teacher charged each student a penny for every Spanish word he used. "It works!" she said. "They come from poor families, you know."[8]

In the last few years efforts have been made in some states to alleviate this deplorable situation. In 1972 Massachusetts passed the first comprehensive state bilingual education law. The law called for "the teaching of academic subjects both in a child's native language and in English; for instruction in reading and writing the native language, and in understanding, speaking, reading, and writing English; and for the inclusion of the history and culture associated with a child's native language as an integral part of the program."[9]

Those educators who are attempting to improve language proficiency may find that bilingual television would help them to be more effective in teaching non-English speaking children. Literature revealed that little had been done in the field of bilingual education and even less research had been reported which indicated the effectiveness or ineffectiveness of the use of TV in bilingual education.

---

[8] Jeffrey W. Kobrick, "The Compelling Case," p. 57.

[9] Ibid., p. 57.

III. STATEMENT OF THE PROBLEM

With the passage of ESEA VII (Bilingual Education Act, January 2, 1968), the plight of non-English speaking children was recognized and provisions were made to improve bilingual education. Solutions to the problem were sought from many areas. Television teaching had been considered to be one way to achieve successful bilingual education. Some of the techniques which had been used such as repetition and audio-visual reinforcement had not been thoroughly investigated to determine their effectiveness. The problem, then, was to determine the effect of language reinforced by simultaneous action on the comprehension of television segments by English, Spanish, and bilingual speakers from 4 to 8 years of age. Questions to be answered by this study were as follows.

Major Question

Is learning from TV segments associated with language comprehension (Spanish for Spanish-speaking children or English for English-speaking children) facilitated when the language is reinforced by simultaneous action?

Sub-Questions

1. Do children who do not understand the language used in TV segments perform better when the language is reinforced by simultaneous action?

2. Do children who do understand the language used in TV segments perform better when the language is reinforced by simultaneous action?

3. Is there a difference in the performance of children who understand the language used in TV segments when the language is reinforced by simultaneous action and the performance of children who do not understand the language that is reinforced by simultaneous action?

4. Is there a difference in the performance of children who understand either English or Spanish when both Spanish and English are used in a TV segment and when only one of the languages is used?

Related Questions

1. Is there a difference in the performance of children when the TV segment is animated and when the TV segment has professional actors?

2. Is there a difference in the performance of children when the TV segment has child actors and when the TV segment has only adult actors?

IV. ASSUMPTIONS

1. Monolingual students can learn from bilingual educational television.

2. The Spanish and English segments are suitable for the students in the sample.

3. This age span is acceptable for learning language.

4. The Spanish and English segments are suitable for boys and girls.

5. The Spanish and English segments are appropriate for English-speaking, Spanish-speaking and bilingual children.

6. A 30-minute show is not too long (attention span) for students.

V. DEFINITION OF TERMS

Adult Actors. The adults who appeared in the TV segments which take place in the Villa Alegre setting.

Animation Segments. TV segments which were drawn by animators. There was no continuity of characters or setting among animation segments.

Bilingual Person. One who speaks English and Spanish.

Bilingual TV Segment. A TV segment where both English and Spanish were spoken.

Child Actors. The children who appeared in the TV segments which took place in the Villa Alegre setting.

English TV Segment. A TV segment where only English was spoken.

Language Dominance. A child's language dominance was determined by the language which he used more proficiently.

Learning. For the purpose of this study learning was defined as that process which took place when a child comprehended what he was seeing and hearing and was able to answer correctly questions based on the material.

Monolingual Person. One who spoke only one language.

Reinforcement. This study was concerned with the redundancy that occurred when the spoken language was duplicated with simultaneous action. E. T. Hall defined redundancy as information received from one

system and backed up by other systems. He maintained that all organisms are highly dependent on redundancy.[10]

Simultaneous Action. That action which took place at the same time the language which described the action was being spoken.

Spanish TV Segment. A TV segment in which only Spanish was spoken.

TV Segment. One of the brief independent episodes which were used to make up a 30-minute television show.

Villa Alegre. The "Happy Village" setting for the segments in which the cast of children and adult actors performed.

VI. PROCEDURES

Limitations

1. This study was part of a larger study which was designed to collect information as to the appeal and comprehensibility of the show segments at the 4-to-8 year old level. The segments, therefore, were not developed specifically for the purpose of this study.

2. The convenience sample, which was presumed representative, was selected from students where cooperation could be obtained. It was believed that the sample was generally representative of the population to be served by the program, e.g., geographic distribution.

---

[10] E. T. Hall, The Hidden Dimension (Garden City: Doubleday and Company, 1969), p. 102.

Sample

As the subjects were chosen to include Spanish and English monolinguals and bilinguals, primarily in urban areas, a convenience sampling procedure was used. In order to obtain a cross section of all the major Spanish-speaking groups in the United States, the following six cities were chosen as sites: Los Angeles, Miami, Milwaukee, New York City, San Antonio, and San Jose. Knoxville was chosen also as a non-Spanish speaking area and the children were divided equally between Black and White. At each site one to four schools were used to obtain an adequate demographic sampling of nursery, kindergarten and first grade children within each school system.

Instrumentation

The questionnaire, developed specifically for this study, was designed to measure the child's comprehension of the content in each segment of two 30-minute shows. One show had 20 segments and the other one was made up of 21 segments. The number of questions for the 12 segments used in this study ranged from one to four. The answers were scored as correct or incorrect.

Collection of Data

The students viewed each of the two shows on separate days with the entire class and then had the test administered individually by an interviewer who had either prior teaching experience or experience as an educational paraprofessional. The questionnaire for one show included 76 items and the other had 73.

The interview time varied with the age of the student. The 4-year-old nursery student took as long as 30 minutes to answer the questions. First graders could finish in 10 to 15 minutes. Interviewers were instructed to probe until an answer was given if at all possible.

Copies of the two questionnaires are included as Appendix A.

Treatment of Data

A five-person panel viewed the 41 segments and classified them as reinforced and nonreinforced. These two groups were then classified by language, e.g., (1) Spanish, (2) English, and (3) Bilingual. For each of the six groups, two segments were randomly selected. The 12 segments used in this study fell into the following categories:

Reinforced	Nonreinforced
2 Spanish	2 Spanish
2 English	2 English
2 Bilingual	2 Bilingual

Nonparametric statistics and arithmetic computations (e.g., means, percents) were used to analyze the data.

Importance of the Study

This study was part of a larger formative research study made of Bilingual Children's Television's first two pilot shows. The purpose of that study was to evaluate the appeal and comprehensibility of the show segments at the child level as well as the format of the show. The researchers also tested for the appeal and utility of the shows for

school and home viewing as perceived by parents and teachers. Approximately 400 children at eight test sites were interviewed in addition to 250 parents and 250 teachers.

Dr. Ed DeAvila, Director of Bilingual Children's Research Department stated in his summary to the study:

> While the results provided in this research have indicated a positive trend, particularly for the monolingual child, the answers to a large number of questions bearing on specific learning effects must necessarily await subsequent research. . . . However positive our initial findings have been, the formative research presented in this document is intended only as a beginning; as an attempt to identify questions which await further study and program development.[11]

The fact that so many studies of educational television had been commissioned was evidence that there was a need for research. A number of projects had been developed as a result of funds from various foundations such as the Twentieth Century Fund, Payne Fund and the Ford Foundation. Early studies were almost wholly aimed at providing evidence of the value of television as a substitute for classroom teachers or the superior value of television instruction as compared to traditional classroom teaching. Schramm and Chu after a careful review of the early studies reported:

> There is no longer any reason to raise the question whether instructional television can serve as an efficient tool of learning. . . . The effectiveness of television has now been demonstrated . . . at every level from pre-school through adult education. . . . The questions worth asking are no longer whether

---

[11]Ed DeAvila, "A Summary of the Formative Research," Bilingual Children's Television (December 1973), pp. iii, iv.

> students learn from it, but rather (1) does the situation call for it? and (2) how, in the given situation, can it be used effectively?[12]

William Allen in summarizing his study of the research done in the area of instructional media reported:

> The predominant finding from the hundreds of evaluative studies in instructional television is the overall equal effectiveness when compared to face-to-face instruction. That students learn from television cannot be doubted, but the conditions under which such learning takes place and the specific characteristics of televised presentations that bring this about are yet to be determined, and most research ignored such questions.[13]

Relatively little research had been carried out in the area of preschool viewing. Dr. Robert L. Hilliard, Chief of the Educational Broadcasting Branch of the Federal Communications Commission reported in August 1970, that there were approximately 24 million preschool age children who had access to television which could serve a functional role in their education. "Television may serve as a device for early childhood education in the home and in a structured classroom situation. Woefully inadequate data have been compiled on the impact of television as an educational factor in either of these cases."[14]

---

[12]Wilbur Schramm and Godwin C. Chu, "Learning from Television: What Research Says" (Final Report, Contract OE 4-7-0071123-4203 U. S. Office of Education. Stanford: Stanford University Institute for Communication Research, 1967), p. 177.

[13]William H. Allen. "Instructional Media Research: Past, Present, and Future," AV Communication Review, 19 (Spring 1971), p. 10.

[14]Robert L. Hilliard, "How Are You Going to Keep Them Down on the Farm After They've Seen T.V.?," Alternative Futures in American Education, Appendix 3 to Hearings on H. R. 3606 (January 1972), p. 161.

Other areas that are yet to be explored are television's role in the development of nonverbal intelligence and its ability to accommodate individual perceptual differences. T. R. Ide pointed out that different people may enjoy a picture on different levels of sophistication and each may profit from the experience. Perceptual learning styles need to be identified and classified in order that appropriate learning materials can be developed. Ide also noted that little is known about television as an art form, about its language, and its capacity to communicate in other than the most conventional manner. Ide challenged educational television workers with these words:

> The importance of television, both viewing and producing, in the intellectual development of children has yet to be confirmed. It is critically important for those responsible for educational television (and for organizations created to provide learning experiences using a variety of media) to incorporate research oriented units into their structure. Only in this way will it be possible to ensure that adequate resources will be available for the continuing investigations which must be carried on if television is to become a significant part in the education of man.[15]

VII. ORGANIZATION OF THE STUDY

The study will be reported in the following chapter format:

Chapter I--Introduction, purpose, statement of the problem, questions, assumptions, definition of terms, procedures, and organization of the study.

---

[15]T. R. Ide, "The Potentials and Limitations of Television as an Educational Medium," Media and Symbols: The Forms of Expression, Communication, and Education, 73rd Yearbook of NSSE (Chicago: University of Chicago Press, 1974), p. 356.

Chapter II--Review of related literature.

Chapter III--Procedures.

Chapter IV--Presentation and analysis of the data.

Chapter V--Summary, findings, conclusions, and recommendations.

CHAPTER II

REVIEW OF RELATED LITERATURE

I. INTRODUCTION

Can the United States change its philosophy from the melting pot theory of assimilation to the democratic theory of a pluralistic society? Can educators be trained to accept this humane philosophy and be committed to its implementation? Are they capable of becoming daring innovators of new approaches to the broadening of the perspective and vision of the American people? Will educators have the perception to realize that television, which already has the attention of the people, can be the transmitter of worthwhile prosocial ideas? Can they develop the power necessary to change the role of educational technology from that of providing more effective means of conveying the traditional information which has evolved over the last 500 years to that of serving as a means to explore our experiences in our culture and devise new goals for our society? George Gerbner, Professor of Communications, University of Pennsylvania, claimed that this had not been done because "no school or culture educates children for some other society." Instead it cultivates existing tendencies and sharpens and deepens them. Education reformers have not been successful because the formal school system existed in a cultural climate largely dominated by the informal "curriculum" of the mass media which are exempt from public laws but not from private corporate development and authority. "The

hidden curriculum is a lesson plan that no one teaches but every one learns. . . . Culture power is the ability to define the rules of the game of life that most members of a society will take for granted."[1]

Gerbner described American media as "the cultural arms of private enterprise in the public sphere" and suggested that they have a dual role of serving the commercial interests of private enterprise and representing public ideals that are popular and credible. He called for a study of these conflicting institutional interests and an assessment of their real contribution to social policy so that we can predict the possibility of real changes in our educational system.[2]

II. BILINGUALISM

Bilingualism has not been a matter of concern for the United States school systems until recent years because there was no interest in promoting bilingualism for United States citizens. English was the only accepted language, and the educational goal was the adoption of English by all citizens and the elimination of all other languages. Many educators believed, and some still do, that the ability to speak another language was detrimental to the learning of English.

Bilingual programs with English as one of the languages in the majority of nations were interpreted as their effort to develop closer

---

[1]George Gerbner, "Teacher Image in Mass Culture: Symbolic Functions of the 'Hidden Curriculum,'" Media and Symbols: The Forms of Expression, Communication, and Education (Chicago: University of Chicago Press, 1974), p. 476.

[2]Ibid., p. 496.

relationships with the United States and to prepare for possible immigration. South Africa has two official languages, English and Afrikaans languages. Switzerland has three official languages and learning begins in the mother tongue with the others added later. The Union of Soviet Socialist Republics school faculties teach in Russian, the national official language and, in addition, in the language of their province. In over 700 schools, at least one foreign language is used to teach various subjects.[3]

Until recent times, only a small percentage of United States citizens traveled abroad and were aware of how handicapped our monolingual citizens really are. Those who realized the value of bilingualism, however, did not consider the Spanish and American Indian languages as important or desirable because the U. S. citizens of these cultures are not generally accepted and respected by the majority society.

Bilingualism today is receiving attention because federal funds from Title VII have enabled 150,000 students to participate in bilingual programs. In 1974 there were five million more who also needed these programs because English was not their mother tongue. Another attention-getter was court decisions such as Lau v. Nichols (483F. 2d 791 (C. A. Cal. 1973)) that require bilingual instruction.[4]

---

[3]Theodore Anderson and Mildred Boyer, Bilingual Schooling in the United States (Austin: Southwest Educational Development Laboratory, 1970), p. 33.

[4]Marilyn H. Cutler, "Who'll Pay for Bilingual Education? You, of Course," The American School Board Journal (June 1974), p. 8.

There is no one exact definition of bilingualism, but there is general agreement that it refers to the knowledge and use of two languages by the same person. The achievement of bilingualism requires an educational program that meets specific criteria. The Title VII Guidelines to the Bilingual Education Program provides this definition:

> Bilingual education is instruction in two languages and the use of those two languages as mediums of instruction for any part of or all of the school curriculum. Study of the history and culture associated with a student's mother tongue is considered an integral part of bilingual education.[5]

Anderson and Boyer developed an excellent compilation of the many variations of this broad definition.[6]

Zotos and Wylie, who were interested in tying biculturalism with bilingualism, developed the following definition for their Open Space Bilingual/Bicultural Approach to Elementary Education in Bristol, Pennsylvania:

> A meaningful program . . . should be both bilingual and bicultural with bilingualism defined as the understanding, in varying degrees, of two languages, while biculturalism implies knowing and being able to operate successfully in two cultures. Biculturalism includes knowing modes of behavior, beliefs, values, customs, and mores of two different groups of people.[7]

There is a need for careful differentiation between bilingual education and English as a Second Language (ESL). Anderson and Boyer

---

[5]Anderson and Boyer, op. cit., p. 8.

[6]Ibid., pp. 7-13.

[7]Michael Zotos and Richard Wylie, "The Spanish-Speaking Child," The Title III Quarterly (Summer 1973), p. 17.

maintained that "ESL is an important component of bilingual education; but unless the home language is used as a medium for teaching a part or the whole of the curriculum, . . . education cannot properly be called bilingual."[8]

Elizabeth Willink further delineated bilingual education in these terms, "Together these terms mean that education--teaching and learning--should take place and that, language being what it is, education should take place in and through two languages."[9]

Gaarder in analyzing the 76 bilingual education programs federally funded in the first year of Title VII found that only six of these aimed eventually to provide bilingual schooling at all grade levels, 1-12. The majority of the projects were actually ESL programs.[10]

A major obstacle to the achievement of true bilingual education is the persisting belief in many communities that the maintenance of non-English languages is undesirable. This belief coupled with the fact that the majority of Americans are monolingual has helped to produce the situation as assessed by Fishman and Lovas:

> . . . bilingualism education in the United States currently suffers from three serious lacks: a lack of funds (Title

---

[8]Anderson and Boyer, op. cit., p. 12.

[9]Elizabeth Willink, "Bilingual Education for Navajo Children," Paul Turner, ed., Bilingualism in the Southwest (Tucson: University of Arizona Press, 1973), p. 179.

[10]Rolf Kjolseth, "Bilingual Education Programs in the United States: For Assimilation or Pluralism?", Bilingualism in the Southwest (Tucson: The University of Arizona Press, 1973), p. 17.

> VII is pitifully starved), a lack of personnel (there are almost no optimally trained personnel in this field), and a lack of evaluative programs (curricula, material, methods).[11]

In 1970 Rolf Kjolseth's survey confirmed that most of the programs were aimed at helping the ethnic child learn English and to conform to the accepted "American" model. He found that over 80 percent of the bilingual programs were based on the assimilation model and the remaining few were only moderately pluralistic. He maintained:

> . . . that in most cases the ethnic language is being exploited rather than cultivated. . . . A variety of the ethnic language is being used as a new means to an old end. The traditional policy of "Speak Only English" is amended to "We Will Speak Only English--just as soon as possible and even sooner and more completely if we begin with a variety of the ethnic language rather than only English!"[12]

One of the key factors in a pluralistic model of bilingual education programs is the teacher. To be the most effective bilingual and bicultural role model for her students, the teacher is of the local, ethnic origin; lives and participates in the community, and is competent to teach the mother tongue, and English to students who do not speak it. The bilingual teacher should have greater qualifications than those possessed by the average middle-class teacher who is desirous to "do right by ethnic children." James Cooper et al. called for a teacher who "knows--through experience, interaction, and scientific understanding--the sociocultural background of the bilingual, bicultural child"

---

[11]Joshua Fishman and John Lovas, "Bilingual Education in Sociolinguistic Perspective," TESOL Quarterly, 4(3) (1970), p. 215.

[12]Ibid., p. 16.

and can make accommodations for his different value systems, and cultural perceptions.[13] Teachers who possessed these qualifications were and continue to be scarce and in great demand.

Teachers who are involved in bilingual programs and do not meet these standards, need additional training. "Crash" programs are needed for these current teachers, and efforts should be made to make potential teachers aware of the great need for bilingual teachers, especially in the elementary field. The training of bilingual teachers could be stepped up and made more relevant by first retraining higher education staff members through an intensive summer seminar based on a particular bilingual education program. The seminar materials would include the cultural background, language materials, and any audiovisuals such as a television series. Those college staff members would then offer comparable courses during the school year for teachers participating in the bilingual program.

An even greater task is the conversion of Americans to the acceptance of bilingualism as both desirable and necessary for United States citizens in our world today. This calls for the use of television, the one sure way of reaching the American people. The value of television may be questioned, but there is no doubt about its widespread use by Americans of all ages. Its potential for fostering the acceptance of bilingualism is great. Programs such as Sesame

---

[13]James G. Cooper, Richard Holeman, Horacio Ulibarri, and Miles V. Zinta, Bilingual Education, Putting Research Into Educational Practice No. 6 (Washington, D. C.: Office of Education, 1972), p. 7.

Street and Electric Company have demonstrated their ability to reach preschool and early elementary students. Programs such as Villa Alegre present not only two languages but also bring a culture into communities where it is not known. Through learning guides, a limited vocabulary and excellent cultural material can be given to children, parents, and teachers. It is possible through educational television to advance the development of a pluralistic society. A need for research in this area was recognized by Lloyd Morrisett:

> Research on television and prosocial behavior is beginning, yet it is still in its infancy, and we can expect that much time will go by before we have a very good catalogue of the effects of television on children. Even though we lack definitive research evidence concerning the nature of television's effects upon children and how they are produced, the pervasiveness of television, its fascination for children, and the amount of viewing time, all suggest that it is possible to use this component of our culture consciously in an attempt to benefit children directly, rather than to harm them with it, let it be a neutral instrument in their lives, or leave the results to chance.[14]

Another dimension had been introduced to educational television by the addition of cable television which has the capacity to provide two-way service. The television signals are delivered through a cable to the home, and a wire, similar to that of a telephone, can carry information back to the station. This allows young children and their parents to respond immediately to materials presented in bilingual programs such as Villa Alegre which presents the Latin American culture through settings, songs, characters, and content. Its goal is to make

---

[14]Lloyd Morrisett, "Television Technology and the Culture of Childhood," Educational Researcher, 2(12) (December 1973), p. 4.

all children aware of the importance of the Latin American culture and language and the value of having many cultures and languages accepted in our country. This ambitious national television undertaking with its research components may be one step in the direction of improving prosocial behavior through bilingual education called for by Kjolseth:

> Only one thing is certain. Not only do we not know what the major social consequences of different types of bilingual education programs are, but unless current trends and research priorities are altered basically, we are not going to know either--until too late, when the consequences have already been wrought and become sufficiently massive so as to be evident to all.[15]

III. WIDESPREAD USE OF TELEVISION

The census report indicated that 96 percent of the homes in the United States had at least one television set which was "on" more than six hours a day. Children begin watching when they are at the average age of 2.8 years. By age five 82 percent are watching regularly and 94 percent at age seven.[16]

According to the Nielsen Television Index in 1971, children between the ages of two and five averaged 28.4 hours a week of watching television, and those between six and eleven watched 23.6 hours. On an average, these children were spending one and two-thirds months a

---

[15] Ibid., p. 24.

[16] Harold Stevenson, "Television and the Behavior of Preschool Children," Television and Social Behavior, Vol. 2, ed. John P. Murray et al. (Rockville, Md.: National Institute of Mental Health, 1972), p. 349.

year in front of a television set.[17] A typical child will spend more time before the TV by the time he finishes kindergarten than he will spend in school in grades one through six. At age 18 he will have spent more time in television viewing than any activity other than sleeping.

For the preschool child television is the prime outside source of information, since he cannot read newspapers and books. He must assess what he sees on TV without the benefit of a wide perspective of the world. Drs. Liebert, Neale, and Davidson who participated in the investigations for the Television and Social Behavior Program regarded this "early window" onto the world as instruction that has an important impact on the lives of the viewers and is a "pervasive and important influence on society."[18]

Although children are the greatest users of television, the producers of commercial television prepare material designed to entertain adults who, in turn, buy the products of the sponsors. Children are really uninvited guests who must be tolerated and placated in order to reach their parents. Five million children under the age of twelve, who were watching television from 10:30 p.m. to 11:00 p.m. and receiving "instruction" from material prepared to satisfy the entertainment tastes of adults, was a cause for concern.[19]

---

[17]Norman S. Morris, Television's Child (Boston: Little, Brown Co., 1971), p. 84.

[18]Robert M. Liebert, John M. Neale, and Emily S. Davidson, The Early Window (New York: Pergamon Press, 1973), p. 12.

[19]Ibid., p. 10.

An error in judgement was made by those who considered educational television programs as the only instructional television. A willingness to discount the effects of commercial television could be contrasted with the great belief that educational television (ETV) would immediately solve major problems in the educational system.

The idea was advanced that TV, because of its excellent distributive powers, could extend experienced teachers and teaching resources to larger numbers of students. It could allow the offering of courses that would otherwise not be available, and also help offset the teacher shortage. There was a willingness to establish this role for ETV without adequate research of the new techniques involved. The early use of ETV, however, did require educators to reassess their traditional teaching methods and begin to update them.

IV. TELEVISION--FRIEND OR FOE?

A review of literature in any area must take into account the positions of the authors of the studies. With reference to the effects of television on children, the views were many and varied with every aspect of content and production considered. Those who questioned the advisability of television for young children, especially preschoolers, were concerned about the effects of production techniques, content, and the amount of time spent in viewing. The proponents emphasized the opportunities of exposure to worldwide travel via TV, cognitive development, and the learning of prosocial behavior.

A national organization, Action for Children's Television, is working to make children's TV a public service area, responsive to the needs of the child rather than the pressures of the advertisers. Their research showed that violence in children's TV was there because it attracted the most viewers and, therefore, sold the products of advertisers who sponsored these shows. ACT President, Peggy Charren, described their activities:

> We in the United States are in the midst of an unprecedented commitment by institutions and individuals concerned with children to an examination of the uses and abuses of children's television. . . . We hope to prove that there is some television for children very much worth looking at, and to reinforce the dialogue to make all of children's television a creative force in the lives of children throughout the world.[20]

The leading children's shows in 1974 fell into two categories: the slow-paced show built around a central adult character such as Captain Kangaroo and Misterogers; and the fast-paced show like Sesame Street, which used many production techniques to present content developed through formative research. Robert Keeshan, CBS's Captain Kangaroo, in order to help meet the child's emotional needs, maintained a quiet pace and built confidence in the character of Captain Kangaroo. He was always aware of the possibility of causing stress because he thought "some of the tried and true formulas of entertainment--the cartoons, the cliff-hangers, the enormous violence we see

---

20 Jean Fos, ed., "Children's Television, Can We Move From Exploitation to Education?," AAUW Journal (April 1974), p. 37.

in some shows--I reject as not valid with children."[21]

In 1970 Fred Rogers, Public Broadcasting System's Misterogers, defined happiness as resolving conflict and his goal was to help children resolve their inner problems caused by their emotions such as fear, anger, and love. He collaborated with Dr. Margaret McFarland, the administrative director of the Arsenal Family and Children Center, a division of the University of Pittsburgh's medical school, before he wrote his scripts and original songs such as "When A Baby Comes to your House."[22] Both of these shows aided the development of prosocial behavior.

On the other hand, the goal of Children's Television Workshop (CTW) as voiced by Dr. Gerald Lesser, professor of education and human development at Harvard and chairman of CTW's board of advisors, was "how to make entertainment instrumental to learning and how to frame a child's learning experiences so that they contain excitement and joy."[23] Palmer, director of research for CTW, described the scope of the series:

> The Sesame Street series represents not one experiment but several. It is an experiment in public broadcasting preschool instruction, film and television production, formative research and evaluation, and the use of professional audience building techniques. One unusual facet of the experiment is

---

[21]Norman Morris, op. cit., p. 143.

[22]Ibid., pp. 191-193.

[23]"Television in Schools is Teaching Nonreaders to Read, But at What Price?," American School Board Journal (March 1970), p. 28.

> the close working partnership between research and production.[24]

This partnership in which formative research had a direct effect on the day to day production was costly and accounted for a large part of eight million dollars required to turn out Sesame Street. A need for this type of research, however, was established when in 1968 it was determined that universities were making scant effort to determine television's impact on the young. The Sesame Street research could be utilized by future children's programs and those then in production. CTW Director, Joan Ganz Cooney, compared the eight million dollars for Sesame Street's first year and a half with the three billion dollars spent on space exploration in this way. "If this country can get a man on the moon, surely we should be able to figure out how to use this instrument for the betterment of society."[25]

Sesame Street had served as catalyst in the field of children's television and their research had stimulated other research, some not always in accord with Sesame Street's interpretation of its own data. The widespread acceptance of CTW's programs by children had activated research by those concerned about the amount of time that children spent before the TV set.

David Anderson, University of Massachusetts, reanalyzed data collected by the Children's Television Workshop on Sesame Street and predicted:

---

[24]Norman Morris, op. cit., p. 154.

[25]Ibid., p. 153.

> . . . that future research into the effects of program techniques regardless of content will provide ample reason for parents to limit drastically their children's TV diet, especially if their children are preschool age. . . . Their perceptions are guided by the TV camera--the zoom lens techniques, the rapid dissolves, the quick changes from one special location to another. The child has no control over what he is seeing. . . . Further research indeed may prove what some psychologists now believe: That these rapid perceptual shifts lead to increased distractability of preschool children. It's also possible that TV nurtures in children an expectation of (the Sesame Street) kind of pacing in the real world, where, of course, it doesn't exist.[26]

Werner I. Halpern of the Rochester Mental Health Center as a result of his research, suggested that the highly stimulative visual and auditory experiences of Sesame Street and similar programs might be an important factor in producing frantic behavior in preschoolers who are not organically or environmentally equipped to handle the fast paced electronic stimulation.

Researchers had estimated that 5 or 6 percent of the children between the ages of two and eight were susceptible to mild seizures induced by flickering TV picture tubes. These seizures could consist of a temporary "tuning out" that might not be detected by others or by the victim himself. The behavior of children could also be affected by ultrasonic frequency sounds emitted by the TV set.[27]

Dr. Herbert Sprigle, director of the Learning to Learn program, in Jacksonville, Florida, compared 24 matched pairs of poverty children,

---

[26]Philip Jones, "The Educational TV in Your School May Be Anything But Educational," The American School Board Journal (March 1974), pp. 26-27.

[27]Ibid., p. 27.

half of whom were in kindergarten and half from a preschool program using Sesame Street. In 1970 he reported that the children using Sesame Street scored the same or a little lower than the control group on the Metropolitan Readiness Test. In 1972 he reported that a subsequent testing of post-first graders found the Sesame Street graduates' scores on the Stanford Achievement Test to be "statistically and educationally lower than that of their classmates." He extended his research to include a study of children who watched Sesame Street for two years and a group that attended a conventional day care and kindergarten. His findings showed an established trend of "poor preparation for school which will result in future academic failure for Sesame Street graduates." Sprigle said that the series should be labeled "entertaining" only. He complained that an analysis of 50 shows revealed adults talking "98 percent of the time."[28]

V. RESEARCH

Dr. John H. Fischer in his inaugural address as President of Teachers College, Columbia University, described the opportunities for work in advancing education as a professional human endeavor:

> . . . opportunity to focus the energies of education on helping people to find meaning in the world and to find it in their lives . . . expand horizons, deepen insights, sharpen sensitivity. A second opportunity is the chance to investigate further the processes of education. The connection between the total pattern of the curriculum and what we now call the process

---

[28]"Springle Still Finds Potholes on Sesame Street," Report on Education Research (January 31, 1973), pp. 8-9.

> of education offers an important and largely undeveloped field for study. The things, the devices, the material that can make learning more readily and more widely available and teaching more efficient comprise a third field of opportunity newly open to creative work. The most urgent problem is to develop a theoretical approach to the design of educational systems to join the talents and skills of people operating at different levels of competence and responsibility with the capabilities of a variety of mechanical and electronic devices. Giant strides are imperative here.[29]

The National Society for the Study of Education expressed its belief that "communication technology is of profound significance to the culture in general and to education in particular" by devoting Part I of its 1974 Yearbook to "a general conceptualization of the nature of media and symbols that would reflect their important place in our conception of man and his culture and, at the same time, would indicate, if in a preliminary way, their uses and effects in the educational enterprise."[30]

Research on media as well as educational and psychological research are limited until there has been the development of a theory of the structures of the symbols that make up a large part of our environment, along with the media that perpetuate these symbols, and the cognitive effects of presenting them to children.[31]

---

[29]Joseph A. Tucker, "Educational Technology and the Role of the Teacher," Trends in Programmed Instruction, ed. Gabriel D. Ofiesh and Wesley C. Meierhenry (Washington: National Education Association, 1964), p. 61.

[30]David R. Olson, ed., Media and Symbols: The Forms of Expression, Communication, and Education (Chicago: University of Chicago Press, 1974), p. 10.

[31]Ibid., p. 9.

Ide reminded us that a different approach to the use of ETC will require not only research, but also specially designed learning systems. Experimental programs are expensive as evidenced by the eight million dollars spent by Sesame Street during its first year.[32] Palmer predicted that formative research concerned with specific combinations of educational objectives, instructional media, learners, and learning situations would develop a closer relationship between the science of learning and the technology of learning. There are a vast number of variables to be considered. The use of TV conventions such as timing, flashbacks, use of redundancy, combinations of music and lighting, pixilation, etc. must be tested to determine the manner in which they are most effective in communicating a message to a particular audience. The possible combinations to be tested are unending, and are evidence of the extent of research to be done in just the area of children's television.[33]

There were few instances of research to determine more effective methods of teaching students who did not speak English. John Stanley Rogers attempted to discover whether bilingual or English as a Second Language was most effective. His study supported the theory that

---

[32]T. R. Ide, "The Potentials and Limitations of Television as an Educational Medium," Media and Symbols: The Forms of Expression, Communication, and Education, ed. David R. Olson (Chicago: University of Chicago Press, 1974), p. 355.

[33]Edward Palmer, "Formative Research in the Production of Television for Children," Media and Symbols: The Forms of Expression, Communication, and Education, ed. David R. Olson (Chicago: The University of Chicago Press, 1974), p. 320.

instruction should begin in the language the child understands because the Bilingual Program produced a higher academic development in Spanish-speakers as well as a higher self-concept for all students in the Bilingual Program. Rogers concluded that "if the child likes himself, and can accept himself regardless of his level of abilities, he will be better prepared to develop those talents."[34]

Gilbert J. Velasquez carried out research to determine the variables essential to building successful bilingual programs. His evaluation of achievement data from the Bilingual Education Center Evaluation files indicated that:

1. The Mexican American as well as the Anglo American students are reading in the English language as well as Spanish after having experienced a Bilingual Education Program for three years.

2. The self-concept of Mexican American as well as Anglo American children is enhanced in a Bilingual Program.

3. Parents and teachers feel positive about the program and want it to continue. . . . Bilingual Education has, in fact, a positive effect on children's performance and self-concept.[35]

Rudolph V. Skoczylas conducted a study to determine if bilingually instructed children suffered a loss in linguistic, academic, or cognitive growth and if their self-image and attitudes toward the two ethnic

---

[34]John Stanley Rogers, "The Effects of a Bilingual-Bicultural Education Program on Academic Success and Self-Esteem" (Doctoral dissertation, United States International University, 1973), Dissertation Abstracts, Sec. A, Vol. 34, No. 4.

[35]Gilbert J. Velasques, "Evaluation of a Bilingual Bicultural Education Program" (Doctoral Dissertation, United States International University, 1974), Dissertation Abstracts, Sec. A., Vol. 34, No. 6.

groups were less favorable than those of monolingually instructed students. He concluded among other things that:

1. The bilingually instructed children are learning Spanish and English simultaneously with no apparent difficulty and with an apparent beneficial transfer effect from one language to another.

2. The bilingually instructed pupils appear to be developing a positive and democratic attitude toward Anglo- and Mexican-Americans and a self-image that is favorable and not adversely affected by bilingual training.[36]

Augustine Garcia's study of 21 teachers, in inservice training, and their students was based on Combs' model which contended that all teaching behavior is based on a teacher's perceptions of her students, the teaching situation, and self-adequacy in the situation. The in-service training the teachers received included cultural awareness; theory of bicultural-bilingual education; bicultural-bilingual teaching competency; Spanish for the classroom; and professional level Spanish. As a result of the study the following recommendations were made that:

> . . . the emphasis in teacher inservice training in bicultural-bilingual education be placed on the development of accurate teacher perceptions . . . that teachers be helped to analyse their own behavior and that of their students, in order to change it, if necessary, to maximize student verbal involvement in English and/or Spanish.[37]

---

[36]Randolph Skoczylas, "An Evaluation of Some Cognitive and Affective Aspects of a Spanish-English Bilingual Education Program" (Doctoral Dissertation, The University of New Mexico, 1972), Dissertation Abstracts, Sec. A, Vol. 33, No. 10.

[37]Augustine Garcia, "A Study of the Relationship Between Teacher Perceptions and Bicultural/Bilingual Affective Interaction in the Classroom" (Doctoral Dissertation, The University of New Mexico, 1972), Dissertation Abstracts, Sec. A, Vol. 33, No. 10.

Shari Nedler analyzed the application of the Southwest Educational Development Laboratory's (SEDL) development process in the Bilingual Early Childhood Program for economically disadvantaged Spanish speaking children. She found that although the SEDL model was adequate in supporting the design, there was a need for modification in the development process to include clearly defined steps and criteria.[38]

In 1962 Marion Cline conducted a study that upheld the premise that the extensive use of audiovisual aids in the teaching of language arts to bilingual students would improve both instruction and learning. Mr. Cline maintained that the vicarious, concrete experiences provided by the audiovisuals, which depicted the dominant Anglo culture would accelerate the acculturation of children from Spanish- or English-speaking homes.[39]

In the next 12 years, the goal of acculturation had changed to multi-culturation. There was a movement to develop audiovisuals which portrayed the many cultures that were represented in the United States in order that we might achieve a multi-cultural society instead of following the melting pot theory.

A few studies were beginning to appear in the area of bilingual children's television. Susan McRae's survey of teachers in Texas

---

[38]Shari Evans Nedler, "Curriculum Development for Preschool Spanish Speaking Children of the Southwest: A Study of the Translation of a Developmental Process into Classroom Practice" (Doctoral Dissertation, University of Texas at Austin, 1972), Dissertation Abstracts, Sec. A, Vol. 34, No. 2.

[39]Marion Cline, Jr., Improving Language Arts of Bilinguals Through Audiovisual Means (Santa Fe: New Mexico Highlands University, 1962).

showed that teachers who were bilingual in Spanish and English were more positive in their attitudes toward Carrascolendas, a Spanish and English children's television series. It also reinforced the fact that Spanish will be used more in the classroom by Spanish speaking students if the teacher is also bilingual.[40]

Efforts had been made to compile and coordinate the research projects in the field of all instructional television. In 1964 J. Christopher Reid and Donald W. MacLennan prepared a bibliography of 350 abstracts of the experimental literature pertaining to instructional television. They also included instructional film experiments from 1950 in order to continue the efforts of Hoban and VanOrmer who in 1950 published a report which summarized the results of over 200 instructional film experiments covering the period from 1918 to 1950. Leslie P. Greenhill who reviewed some trends in research in instructional television found that practically all of the studies pertaining to instructional television had been conducted after 1950.[41] He observed that "one disappointing aspect of the research on instructional television over the past decade is the relatively small number of studies that have dealt with production variables or variations in

---

[40]Susan McRae, "Relations Between Teacher Bilingualism in Spanish and English and Attitudes Toward a Bilingual Television Program" (Doctoral Dissertation, University of Texas, 1972), ERIC Document ED 066 033.

[41]Leslie P. Greenhill, "A Review of Some Trends in Research on Instructional Films and Instructional Television," Abstracts of Research in Instructional Television and Film, ed. Donald MacLennan and J. Christopher Reid (Columbia: University of Missouri Institute for Communication Research, 1965), p. 2.

methods of organizing and presenting the program content."[42] He suggested that "possibly the most fruitful areas for research lie in the structuring and organizing of the stimulus materials themselves, and in the manipulation and control of student responses."[43]

The current study dealt with the production variables, auditory and visual. It attempted to determine whether language reinforced by simultaneous action was more effective than nonreinforced language. This knowledge would be beneficial to producers of children's television shows, especially those that were bilingual.

Early research models on communication were basically stimulus-response with the media viewed as a simple stimulus acting upon a passive homogenous audience. Theorists attempted to account for differences in response by individual psychological differences.

The "two-step" flow model which included a variety of social variables evolved and mass media were seen as influencing leaders, who in turn influenced less active members of the audience. This was followed by the multi-step flow model which accounted for a variety of social categories and social relationships.

Until the late 1960's, research on educational television consisted primarily of comparative studies of televised instruction and conventional instruction. Two main conclusions could be summarized from over 425 comparative studies reviewed by Schramm (1962) and

---

[42] Ibid., p. 25.

[43] Ibid., pp. 30-31.

Williams (1962) and Chu and Schramm (1968): (1) Educational television could be as effective a medium for teaching as conventional methods, (2) high school and college students were generally unfavorable toward educational television, and (3) an important missing variable could be the attitude, ability and personality of the teacher.[44]

"Theorists such as Allen (1971), Gagne (1970), Kittross (1969), and Schramm (1962) have stressed repeatedly the need for multivariate research on educational television."[45]

The impact of educational television was influenced both by audience and contextual variables as well as the content of the television program. Television as an educational tool is a complicated medium made up of a variety of practices and techniques that may or may not contribute to the expected learning. Many of these factors may be active at the same time. It is difficult to evaluate the relative effect of different aspects such as cartoons or animation versus adult or children actors; slow-paced action versus a fast-moving varied approach. The current study included a question pertaining to the effectiveness of animation in comparison with professional actors.

Some adults discount the educational impact of cartoons because they are not portraying real people in real life settings. However, they could be misjudging a child's ability to relate to a cartoon

---

[44]Monty Carlis Stanford, "On Predicting the Effects of a Bilingual Children's Educational Television Program" (Unpublished Doctoral Dissertation, University of Texas, 1973), pp. 5, 6; ED 082 498.

[45]Ibid., p. 7.

character that has one or more characteristics that are similar to his. David Goslin found that cartoons were equally effective in stimulating imitative behavior.[46]

In order for educational television to reach its full potential, these factors must be identified and carefully defined. The next stage of development involved the testing of the independent effectiveness of each factor as well as its impact when it was interacting with other factors. Since television combines the auditory and visual, these two factors had received emphasis in the scant research that had been conducted. The present study addressed itself to the most effective combination of sound and visual.

Schwarzwalder's study (1960) was concerned with measuring the three variables: visual continuity, visual reinforcement, and visual manipulation. He defined visual reinforcement as the technique by which a word or phrase is superimposed over the picture of the lecturer talking or of the model being exhibited. His null hypothesis, which was rejected, was that the effectiveness of the demonstration did not depend on how much use was made of visual reinforcement. He also found that highest student achievement resulted

> . . . from a combination of one technique using the television team production efforts (planned continuity or supering or television visuals) and a second technique using only the teacher's efforts (unplanned camera continuity or no supering

---

[46]David Goslin, "Social Learning Theory of Identificatory Processes," Handbook of Socialization Theory and Research (New York: Rand McNally, 1969), pp. 213-62.

> or classroom visuals). In other words, the television devices appeared to facilitate the effects of the teacher's efforts.[47]

Postman (1961) had pointed out that "the process of audiovisual education does not call for the formulation of special principles; it calls for the application and elaboration of the general laws of human learning." The stimulus-centered approach to audiovisual instruction tends to be primarily concerned with the design of the message.[48]

Gropper's study was concerned with the learning of concepts through visual (pictorial) presentations. He limited the variables to those stemming from a behavioral model. He concluded that visual and verbal experience should be integrated and that visuals facilitated transfer to a subsequent verbal learning experience.[49]

Tidhar found that the spoken language presented in natural context and everyday situations on TV gave students a better understanding of English-language films and audio tapes, as well as better achievement in active speech. The increased exposure to oral presentations did not have a negative effect on reading comprehension. Students with low IQ scores (less than 100) made greater progress in understanding

---

[47]John C. Schwarzwalder, An Investigation of the Relative Effectiveness of Certain Specific TV Techniques on Learning (St. Paul: Department of Health, Education and Welfare, 1960), p. 36.

[48]George L. Gropper, Studies in Televised Instruction, The Role of Visuals in Verbal Learning (Pittsburg: Department of Health, Education and Welfare, 1965), p. 3, HEW Grant No. 7-48-0000-120.

[49]Ibid.

plays recorded on tapes than their counterparts who studied without television.[50]

Benjamin S. Bloom had noted that:

> The absolute scale of vocabulary development and the longitudinal studies of educational achievement indicate that approximately 50% of general achievement at grade 12 (age 18) has been reached by the end of grade 3 (age 9). This suggests the great importance of the first few years of school as well as the preschool period in the developing of learning patterns and general achievement.[51]

James Q. Knowlton defined audiovisual communication as "designating that part of the broad field of education concerned with the study of pictorial (and other iconic or analogic) messages as these bear upon the learning . . . process." Those who might not be able to accept McLuhan's statement that "the medium is the message" could agree, however, that the medium and the message are closely interrelated.

Friedrich and Stein based their study on Bandura's (1969) theory of imitation. Bandura separated learning through observation from performance or imitative behavior. He showed that imitative learning is more efficient when the child can attach verbal labels to the model's

---

[50]Hava Tidhar, Using Television for Teaching a Second Language Through Dramatized Every Day Situations: An Assessment of Effects on Active Speech and On Understanding Dialogues Presented by Other Media. Instructional TV Center, ERIC Document ED 053 578, 1971.

[51]Lynette Kohn Friedrich and Aletha Huston Stein, Aggressive and Prosocial Television Programs and the Natural Behavior of Preschool Children, Monographs of Society for Research in Child Development, Vol. 38, No. 4 (Chicago: Pennsylvania State University, August 1973).

behavior as he watches. The use of such verbal mediating responses increases between ages of four and seven (Coates and Hartup, 1969). Their study assessed the effects of exposure to aggressive and prosocial television programs on the naturalistic social behavior of preschool children.

Misterogers Neighborhood was chosen because it was one of the few shows that stressed social and emotional development rather than cognitive development. Children in the lower half of the Socio-Economic Status (SES) distribution increased considerably in prosocial interpersonal behavior during an experimental period while those in other conditions changed very little.

It was believed that the younger the child, the greater the effects that TV may have on him (Lange et al., 1969; Schramm et al., 1961). Preschool children were considered to be especially susceptible because they were less able to separate fantasy from reality or to maintain some distance from their immediate perceptual experience.

Frederick Williams et al. (1973) conducted the national evaluation of the third year of Carrascolendas[52] and found that first grade watchers showed a marked increase in language skills in both Spanish and English as well as improving their self concepts and math. A part of the evaluation included a study to assess the independent effects of three mediated instruction variables:

1. Film segments with voice-over narration;

---

[52]Frederick Williams, Geraldine Van Wart, and Monty Stanford, Carrascolendas: National Evaluation, USOE, 1973, ED 078 679.

2. Differing styles of art; and

3. Differing styles of music.

Their findings indicated that attitude and comprehension effects across the child viewers appeared to be independent of the language of narration of the film.

Richard Polsky had made a study of The Children's Television Workshop (Sesame Street) from 1966-68 in which he covered the development of curriculum, characters, and format of the show.[53]

The importance of preschool experiences for later educational development is increasingly recognized. Educators need to reach the four-fifths of the three and for year olds who do not attend school. Children's Television Workshop was established to develop a daily program that would both entertain and foster intellectual and cultural development. Their first series, Sesame Street, was effective in teaching children from all socioeconomic backgrounds. Bogatz and Ball's analysis indicated that Sesame Street could help to close the gap between advantaged and disadvantaged children. Robert Liebert et al. observed:

> We have seen that television has a great--though largely unrealized--potential for educating and teaching positive lessons to our young. What keeps it from doing so? One answer lies in the fact that interest in the prosocial influence of television is a recent phenomenon based on data

---

[53]Richard M. Polsy, "The Children's Television Workshop: 1966-68" (Doctoral Dissertation, Columbia University, 1973), Dissertation Abstracts, Sec. A, Vol. 34, No. 5, p. 2355-A.

gathered only in the last few years.[54]

The research before 1974 revealed that educational television can be one of the important factors in achieving "one nation, under God, with liberty and justice for all." Its effective implementation will call for not only the accepted Yankee ingenuity, but also that of all United States citizens from Asian to Zionist.

---

[54]Robert M. Liebert, John M. Neale and Emily Davidson, The Early Window (New York: Pergamon Press, 1973), p. 108.

CHAPTER III

PROCEDURES

I. INTRODUCTION

In 1972 the United States Office of Education (USOE) approved a planning grant for Bilingual Children's Television in order that their staff could plan and prepare to produce Villa Alegre, a series of 65 30-minute bilingual television shows for children between the ages of four and eight. A part of this grant was earmarked for research.

If research is to have a reasonably immediate effect, it must be formative as well as summative. In the field of children's television, formative research had been included as a part of the funding proposals for Sesame Street, Carrascolendas, and Villa Alegre. This had called for pre-production testing as well as continued testing throughout production. The expense of formative research was offset by the evolving improvement of the shows within the series.

Two of the difficulties encountered in educational research on a national level were the selection of subjects and the implementation of the testing. Over 8000 individual school systems made national random selection and individual testing an expensive undertaking. The lack of random sampling was cited by Greenhill as a deficiency in the experimental design of many studies in the field of television

research.[1] This could be accounted for by the cost factor and the necessity of working where cooperation could be gained.

Dr. Ed Palmer, Director of Research for Sesame Street, succeeded in making Sesame Street one of the most thoroughly researched and tested programs in the history of television. Most of their testing, however, was carried on in day care centers in New York City. Five months before telecasting began, they field tested five hour-long shows to judge their audience appeal and instructional effectiveness. This testing took place in Philadelphia and New York City, and involved disadvantaged and middle-class children. Interim testing was carried out during the first 26-week run of the show and production techniques were modified to make the shows more effective.

Carrascolendas, a Texas-based project, which had very meager funding in comparison with Sesame Street, carried out limited research in the Texas area where it had its largest audience. Villa Alegre, which followed both Sesame Street and Carrascolendas, made use of their research in developing its format. With one of its goals to have all children recognize the advantage of being bilingual, Villa Alegre staff felt the need to test the show in several parts of the country. Although they also had far less funding than Sesame Street, they established pre-production testing in several parts of the country

---

[1]Leslie P. Greenhill, "Trends in Research," Abstracts of Research on Instructional Television and Film, ed. Donald MacLennan and Christopher Reid (Columbia: University of Missouri, Institute for Community Research, 1964), p. 29.

in an effort to determine the effectiveness of the program with widely diverse audiences.

At the end of the Villa Alegre planning grant, a curriculum for the series had been outlined and one show produced and tested. The second USOE grant provided for the production of Villa Alegre and testing of Show 2 and Show 3 before the final assembling of the 65 shows was completed. Although the present study was anticipated in the early stages of the second grant, the two shows and the questionnaire were prepared without special consideration of the questions posed by this study.

II. SUBJECTS

In order to determine the effectiveness of the program with linguistically diverse groups, the decision was made to test in seven cities. In an effort to reach the leading Spanish speaking communities, the Villa Alegre research staff chose the following cities: New York, Miami, Milwaukee, San Antonio, Los Angeles and San Jose. Since the program was to be viewed nationally, the staff decided that testing should be carried on in at least one non-Spanish speaking city, Knoxville. Table 1 gives the number of students tested in each city on each show. A staff person at each site contacted the local school system and arranged for the testing of nursery, kindergarten, and first grade children. Table 2 depicts the grade level of the children, and Table 3 gives the grade level for each language group. An attempt was made to acquire one-third Spanish speakers, one-third English speakers,

TABLE 1. NUMBER OF CHILDREN AT EACH SITE TESTED ON TWO TELEVISION SHOWS

	Knoxville	Los Angeles	Miami	Milwaukee	New York	San Antonio	San Jose	Totals
Show 2	55(14.4%)	65(17%)	52(13.6%)	42(11%)	34(8.9%)	76(19.8%)	59(15.4%)	383(100%)
Show 3	54(14.5%)	63(16.9%)	49(13.2%)	38(10.2%)	45(12.1%)	65(17.5%)	58(15.6%)	372(100%)

TABLE 2. GRADE LEVEL OF ALL CHILDREN TESTED ON TWO TELEVISION SHOWS

	Nursery	Kindergarten	First Grade	Second Grade
Show 2	108(28.2%)	150(39.2%)	103(26.9%)	22(5.7%)
Show 3	76(20.4%)	128(34.4%)	139(37.4%)	29(7.8%)

TABLE 3. GRADE PLACEMENT OF CHILDREN TESTED ON TWO TELEVISION SHOWS CATEGORIZED BY LANGUAGE SPOKEN

	Nursery			Kindergarten			First Grade			Second Grade			
Children	Number	Percent	Percent of Total	Number	Percent	Percent of Total	Number	Percent	Percent of Total	Number	Percent	Percent of Total	Total No.
Spanish Speakers													
Show 2	26	31.7	6.8	38	46.3	9.9	16	19.5	4.2	2	2.4	0.5	82
Show 3	10	16.1	2.7	29	46.8	7.8	22	35.5	5.9	1	1.6	0.3	62
English Speakers													
Show 2	53	27.0	13.8	69	35.2	18.0	56	28.6	14.6	17	8.7	4.4	195
Show 3	42	22.3	11.3	59	31.4	15.9	67	35.6	18.0	20	10.6	5.4	188
Bilingual Speakers													
Show 2	25	24.8	6.5	40	39.6	10.4	32	31.7	8.4	3	3.0	0.8	100
Show 3	22	19.0	5.9	37	31.9	9.9	49	42.2	13.2	8	6.9	2.2	116
Total	178			272			242			51			720
Show 2	104			147			104			22			374
Show 3	74			125			138			29			346

TABLE 4. AGE OF CHILDREN TESTED ON TWO TELEVISION SHOWS CATEGORIZED BY LANGUAGE GROUPS

Children	Under Four Years			Four Years			Five Years			Six Years			Seven Years			Over Seven Years			Total No.
	Number	Percent	Percent of Total	Number	Percent	Percent of Total	Number	Percent	Percent of Total	Number	Percent	Percent of Total	Number	Percent	Percent of Total	Number	Percent	Percent of Total	
Spanish Speakers																			
Show 2	5	6.1	1.3	18	22.0	4.7	36	43.9	9.4	19	23.2	5.0	3	3.7	0.8	1	1.2	0.3	82
Show 3	0	0	0	13	21.0	3.5	26	41.9	7.0	19	30.6	5.1	3	4.8	0.8	0	0	0	61
English Speakers																			
Show 2	7	3.6	1.9	39	19.9	10.2	62	31.6	16.2	51	26.0	13.3	27	13.8	7.0	5	2.6	1.3	191
Show 3	5	2.1	1.1	36	19.1	9.7	65	34.6	17.5	49	26.1	13.2	21	11.2	5.6	4	2.1	1.1	180
Bilingual Speakers																			
Show 2	4	4.0	1.0	19	18.8	5.0	39	38.6	10.2	28	27.7	7.3	11	10.9	2.9	0	0	0	101
Show 3	2	1.7	0.5	20	17.2	5.4	39	33.6	10.5	34	29.3	9.1	8	6.9	2.2	2	1.7	0.5	105
Total	23			145			267			200			73			12			720
Show 2	16			76			137			98			41			6			374
Show 3	7			69			130			102			32			6			346

and one-third bilingual speakers at all of the sites except Knoxville where there was not a Spanish speaking community. Here 50 percent of the children were black and 50 percent were white. This was an effort to determine the effect of the program on two racial groups who had no contact with people of the Spanish cultural background or with the Spanish language. At other sites the goal was to have one-third who had Spanish surnames and were English dominant and one-third who had Spanish surnames and were Spanish dominant. The rest were to be Anglos or Blacks. Table 5 gives the breakdown of the ratio that was achieved as far as Spanish surnames were concerned. The staff contacts also asked for 50 percent boys and 50 percent girls. Table 6 gives the number of boys and girls involved in the testing.

Each teacher was asked to rate the students on an academic scale of 1 to 5 with 1 = definitely below average and 5 = definitely above average. Their ratings are shown in Table 7. The fact that the mode, 41.2 percent, fell in the "average" rating brings the children tested in line with national figures.

The tests were based on two 30-minute television shows which included 20 segments in Show 2 and 21 segments in Show 3. The test for Show 2 had 76 questions, and the Show 3 test had 73 questions. Sample tests make up Appendix A. The tests were administered in Spanish or English with the bilingual student choosing the language in which he was more proficient. The interviewers were local people who had previously taught or served as educational para-professionals. They were

TABLE 5. SURNAME OF ALL THE CHILDREN TESTED ON TWO TELEVISION SHOWS

	Spanish	Other
Show 2	232 (60.5%)	151 (39.5%)
Show 3	220 (59.2%)	152 (40.8%)

TABLE 6. SEX OF ALL THE CHILDREN TESTED ON TWO TELEVISION SHOWS

	Girls	Boys	Missing Data
Show 2	208 (54.4%)	171 (44.6%)	4 (1%)
Show 3	199 (53.5%)	173 (46.5%)	

TABLE 7. ACADEMIC RATING AS INDICATED BY THE TEACHERS OF ALL CHILDREN TESTED ON TWO TELEVISION SHOWS

	1*	2*	3*	4*	5*	Missing Data	Totals
Show 2	17 (4.4%)	60 (15.8%)	164 (42.8%)	67 (17.5%)	58 (15.1%)	17 (4.4%)	383
Show 3	21 (5.6%)	69 (18.5%)	147 (39.5%)	69 (18.5%)	61 (16.5%)	5 (1.4%)	372
Totals	38 (5.0%)	129 (17.1%)	311 (41.2%)	136 (18.0%)	119 (15.8%)	22 (2.9%)	755

*Definitely below average = 1
Somewhat below average = 2
Average = 3
Somewhat above average = 4
Definitely above average = 5

instructed by a Villa Alegre research staff member and supervised by the local Villa Alegre staff contact.

The testing process began with an entire class viewing the show along with their teacher. After the viewing, the 8 to 12 children, who had been selected by their teacher for the testing, were taken to a room away from the viewing area where the four to eight testers administered the tests individually. The tests were given as soon after the viewing as possible. The children were supervised in art activities while they waited to be tested. A second class was viewing the show while the children from the first class were being interviewed. This procedure was followed throughout the day.

Parents of the children and the teachers were asked to view the shows and fill out a questionnaire dealing with their perceptions of the basic appeal of the show, the possible benefits to be gained from watching the show, and their willingness to use the show at home and in the school.

III. VARIABLES

Since Villa Alegre is a bilingual series and this study dealt with the relationship between language and action, one of the key variables was the language spoken by the child. Although the goal of one-third Spanish, English, and bilingual had been set, it was not attained. Table 8 gives the language of the children tested on each of the two shows and the overall average of the two. The number varies because Show 3 was given later in the week and not all of the same children were tested.

TABLE 8. LANGUAGE OF ALL CHILDREN TESTED ON TWO TELEVISION SHOWS

Children	Show 2	Show 3	Average
Spanish Speakers	83	62	72 (19%)
English Speakers	196	188	192 (51%)
Bilingual Speakers	100	116	108 (28%)
Other	4	6	5 (2%)
Total	383	372	377 (100%)

The second essential variable was the TV segments viewed by the children. These were divided into two groups: (1) six reinforced segments with a total of 13 questions, and (2) six nonreinforced segments with a total of 13 questions. Table 9 shows the names of the segments in each category and the number of questions for each segment. It also delineates that in each category there were two segments in Spanish, two in English, and two bilingual.

Two of the variables were concerned with the related questions of animation and professional actors, and of child actors and adult actors. One limitation of this part of the study was that only one segment had children alone in it and two segments had only adults in them. The decision was made to compare the Toy Truck segment which had one child actor with the Circus segment which had two adults. One other point of difference was the fact that Toy Truck was in English, and Circus was in Spanish.

TABLE 9. SPANISH, ENGLISH, AND BILINGUAL TV SEGMENTS WITH LANGUAGE REINFORCED BY SIMULTANEOUS ACTION AND SPANISH, ENGLISH, AND BILINGUAL TV SEGMENTS WITH LANGUAGE NOT REINFORCED BY SIMULTANEOUS ACTION

	Reinforced Segments		Nonreinforced Segments	
Language	Title	No. of Questions	Title	No. of Questions
Spanish	Circus	1	Vie jo San Juan	1
Spanish	El Tren	3	Redondos	2
English	Toy Truck	2	Mr. Bezeal	2
English	Talking to Mars	2	Seesaw	2
Bilingual	Haircut	2	Baja 500	3
Bilingual	Subibaja	3	Hayride	3

The comparison of animation and professional actors included four animation segments and eight professional actor segments, which are identified by type, name, number of questions and show number in Table 10.

IV. TREATMENT OF DATA

The data which were collected by means of a questionnaire consisted of the children's answers to 26 questions pertaining to the 12 TV segments used in this study. These 12 segments were grouped in three different arrangements in order to find answers to the questions presented in the study. They were first grouped according to Spanish, English and bilingual TV segments with language reinforced by simultaneous action and Spanish, English, and bilingual TV segments with language not reinforced by simultaneous action. This provided the data necessary to answer the major question.

In order to answer the four sub-questions that dealt not only with the relationship between language and simultaneous action, but also with the relationship between the language used in a segment and the language of the learner, the answers of the children were grouped by English, Spanish, and bilingual speakers.

The TV segments were also grouped according to the type of production used, animation or professional actors, in order to answer one of the related questions which dealt with the effectiveness of animation in the teaching of young children in comparison to the effectiveness of professional actors in the teaching of young children.

TABLE 10. TV SEGMENTS CATEGORIZED BY ANIMATION AND PROFESSIONAL ACTORS

Title	Language	No. of Questions	Show
Animation			
1. Circus	Spanish	1	2
2. El Tren	Spanish	3	2
3. Mr. Bezeal	English	2	3
4. Redondos	Spanish	2	3
Professional Actors			
1. Haircut	Bilingual	2	3
2. Hayride	Bilingual	3	3
3. Baja 500	Bilingual	3	3
4. Seesaw	English	2	3
5. Subibaja	Bilingual	3	3
6. Talking to Mars	English	2	2
7. Toy Truck	English	2	2
8. Vie jo San Juan	Spanish	1	3

The third grouping of the TV segments included only two segments: Toy Truck which had one child professional actor and Circus which had two adult animated characters. Answers to the questions on these two segments were used in the consideration of the related question concerning the effect of child characters on the learning of young children in comparison to the effect of adult characters on the learning of young children.

The analysis of the data was performed through the use of the services provided by The University of Tennessee Computing Center. The analysis involved the use of frequencies of raw scores and percentages depicted through tables and figures. The cross-tabulations were made using the Statistical Package for the Social Sciences.

The nonparametric chi-square (χ^2) test was used to test for significance of differences between observed frequencies and expected frequencies where this procedure was applicable. Basic analyses involved major variables cross-tabbed with the number of correct responses to tests given by groups of pupils. Major cross-tabs were: reinforced vs. nonreinforced segments and responses of three language groups, e.g., English, Spanish, and bilingual.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

I. INTRODUCTION

Answers to the questions asked in this study were sought through a series of comparisons. The composite responses (responses of all the children) on the TV segments with language reinforced by simultaneous action were compared with the composite responses on the TV segments with no reinforcement of language by simultaneous action in order to consider the effect of language reinforced by simultaneous action on young children's comprehension of material presented in TV segments. The second comparison of composite responses was based on a breakdown of the segments in both categories based on the language (Spanish, English and bilingual) used in the segments. The four sub-questions were answered by analyzing the 18 comparisons which were made possible by categorizing the responses of the Spanish, English, and bilingual speakers on the three pairs of TV segments with language reinforced by simultaneous action and the three pairs of TV segments with no reinforcement of language by simultaneous action. Three of these comparisons dealt with the responses of each language group on the reinforced and nonreinforced segments of each language, i.e., Spanish, English, and bilingual responses on reinforced and nonreinforced Spanish segments.

The categorization of the TV segments by animation and professional actors provided an opportunity to compare the effectiveness of the two production techniques through an analysis of the composite responses on the segments in each category. The last comparison in the study dealt with the effectiveness of adult and child actors.

II. A COMPARISON OF THE COMPOSITE RESPONSES ON THE TV SEGMENTS WITH LANGUAGE REINFORCED BY SIMULTANEOUS ACTION AND THE COMPOSITE RESPONSES ON TV SEGMENTS WITH LANGUAGE NOT REINFORCED BY SIMULTANEOUS ACTION

The overall results indicated that children comprehended language presented in TV segments more easily when that language was reinforced by simultaneous action. Fifty-four and fifty-six hundredths (54.56) percent of the children scored 100 percent on the reinforced segments while only 31.58 percent made a perfect score on the nonreinforced segments (Tables 11 and 12). This constituted a difference of 22.98 percent between the perfect responses on reinforced and nonreinforced segments. Four and forty-three hundredths percent of the children missed all of the questions on the nonreinforced as opposed to 3.51 percent on the reinforced segments. The reinforced segment correct responses from the 75 percent level up were achieved by 75.99 percent of the children as opposed to 50.92 percent who achieved the same level on the nonreinforced segments, a difference of 25 percent. Eighty-nine and fifty-two hundredths (89.52) percent of the children achieved 50 percent correct

TABLE 11. COMPOSITE RESPONSES ON TV SEGMENTS WITH LANGUAGE REINFORCED BY SIMULTANEOUS ACTION

Percent of 13 Questions Answered Correctly	Children	
	Percent	Number
100.0	54.56	621
80.0	9.84	112
75.0	11.59	132
60.0	6.15	70
50.0	7.38	84
40.0	3.07	35
25.0	2.72	31
20.0	1.14	13
0.0	3.51	20

N = 1138 (total number of respondents to three pairs of segments, i.e., 383 on Spanish reinforced; 383 on English reinforced; 372 on bilingual reinforced).

TABLE 12. COMPOSITE RESPONSES ON TV SEGMENTS WITH LANGUAGE NOT REINFORCED BY SIMULTANEOUS ACTION

Percent of 13 Questions Answered Correctly	Children	
	Percent	Number
100.0	31.58	356
83.3	11.00	124
75.0	8.34	94
66.6	17.92	202
50.0	10.38	117
33.3	11.80	133
25.0	1.86	21
16.6	1.68	19
0.0	4.43	50

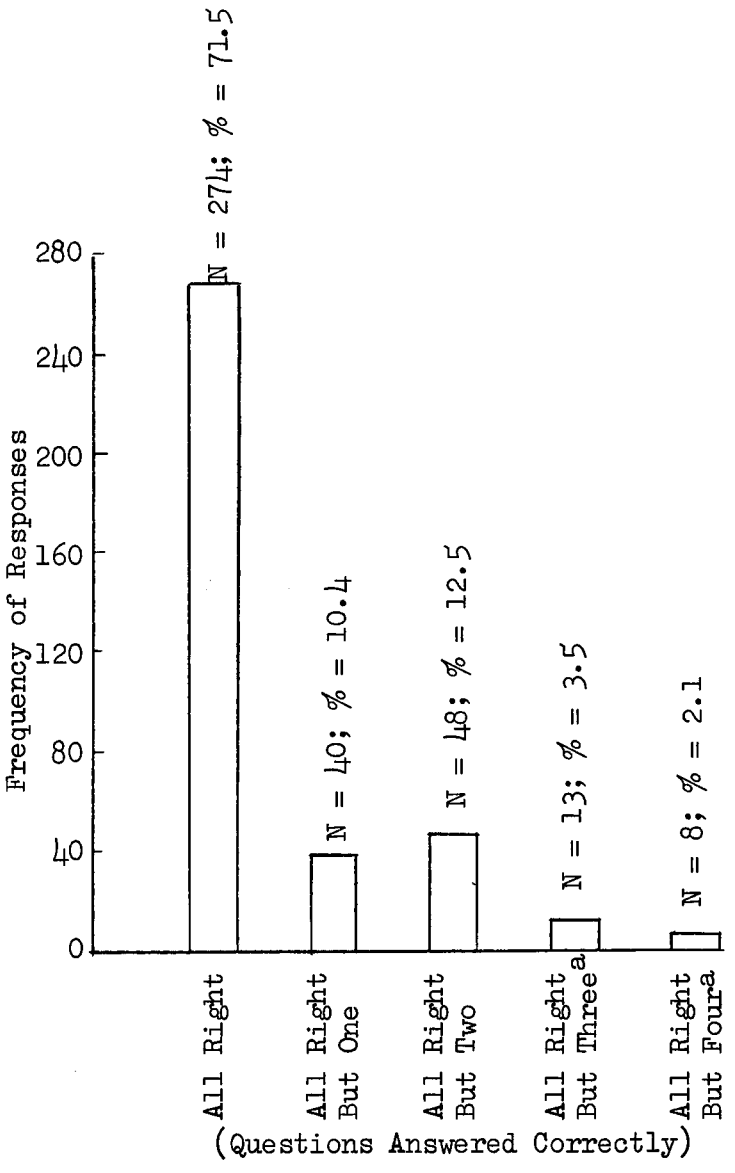
N = 1127 (total number of respondents to three pairs of segments, i.e., 372 on Spanish nonreinforced; 372 on English nonreinforced; 383 on bilingual nonreinforced).

responses on the reinforced segments while 79.22 percent achieved 50 percent correct responses on the nonreinforced segments, a difference of 10.30 percent. This difference continued throughout the responses.

III. COMPARISON OF THE COMPOSITE RESPONSES ON THE SPANISH, ENGLISH, AND BILINGUAL TV SEGMENTS WITH THE LANGUAGE REINFORCED BY SIMULTANEOUS ACTION AND ON THE SPANISH, ENGLISH, AND BILINGUAL TV SEGMENTS WITH THE LANGUAGE NOT REINFORCED BY SIMULTANEOUS ACTION

There was a marked difference between the responses on the reinforced Spanish and nonreinforced Spanish segments. Two hundred and seventy-four (71.5 percent) achieved 100 percent correct responses on the reinforced Spanish (Figure 1) while only 102 (27.4 percent) achieved 100 percent correct responses on the nonreinforced Spanish (Figure 2). This difference was reflected at the lowest of the correct responses where 8 (2.1 percent) achieved zero on the reinforced Spanish and 31 (8.3 percent) achieved zero on the nonreinforced Spanish. A Chi-Square value of 153.29 verified a significant difference ($p < .001$, 3df) (Table 13).

A higher number of correct responses was also reported for the reinforced English segments with 215 (56.1 percent) scoring 100 percent (Figure 3) in comparison to 180 (48.4 percent) scoring 100 percent on the nonreinforced English segments (Figure 4). This observed difference was reinforced with a χ^2 test for all response intervals. The χ^2



[a]These categories counted as one for χ^2 analyses with Figure 2, page 68, results. N = 383.

Figure 1. Frequency of composite responses on the Spanish TV segments (El Tren and Circus) with the language reinforced by simultaneous action.

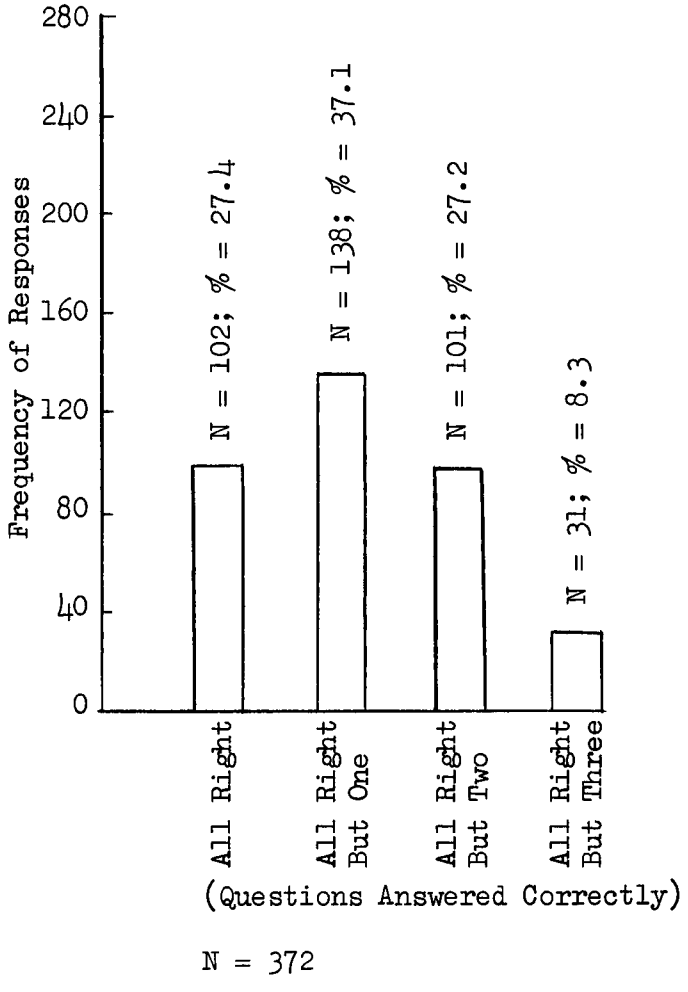


Figure 2. Frequency of composite responses on the Spanish TV segments (Redondo and San Juan) with the language not reinforced by simultaneous action.

TABLE 13. CHI SQUARE ANALYSIS OF COMPOSITE RESPONSES ON SPANISH, ENGLISH, AND BILINGUAL SEGMENTS REINFORCED AND NONREINFORCED

Language of Children	Language of Segment	Type[a] of Segment	χ^2	df	p <
Composite[b]	Spanish	R	153.29[c]	3	.001
Composite	Spanish	N			
Composite	English	R	25.92	4	.001
Composite	English	N			
Composite	Bilingual	R	38.78	5	.001
Composite	Bilingual	N			

[a] R = reinforced; N = nonreinforced.

[b] Spanish, English, and bilingual.

[c] For purposes of χ^2 computation where the number of response categories were unequal between segments, categories were combined. In all cases this combining involved only the two categories with the least number of correct responses.

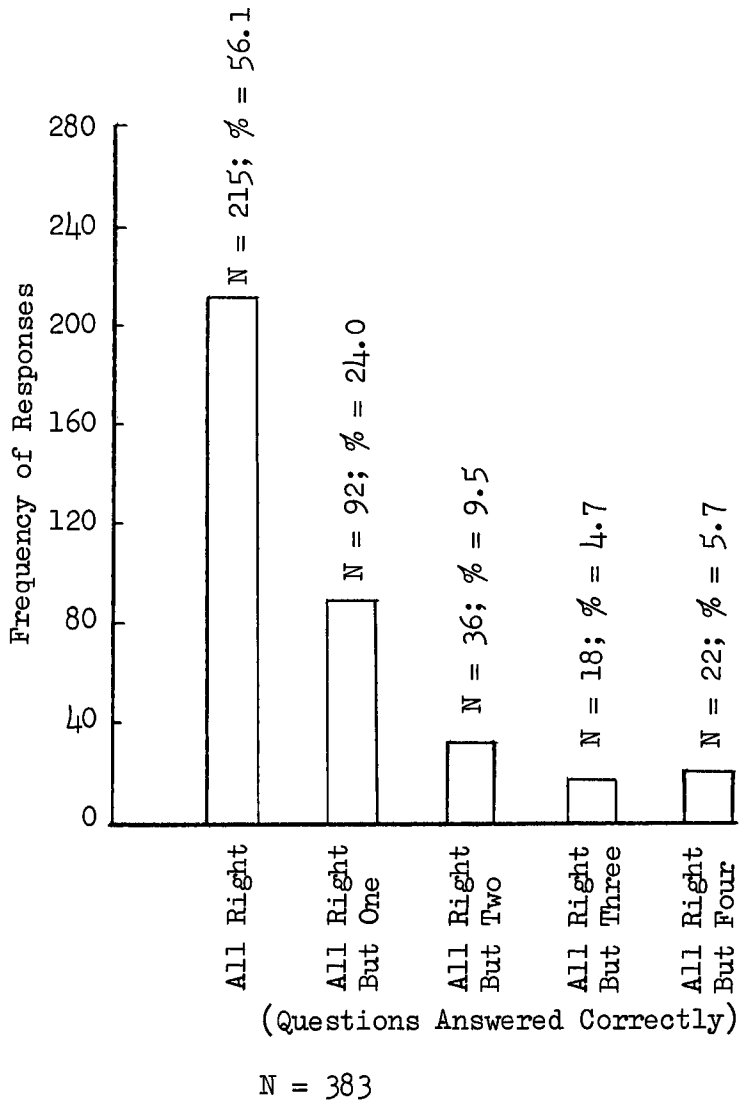


Figure 3. Frequency of composite responses on the English TV segments (Talking to Mars and Toy Truck) with the language reinforced by simultaneous action.

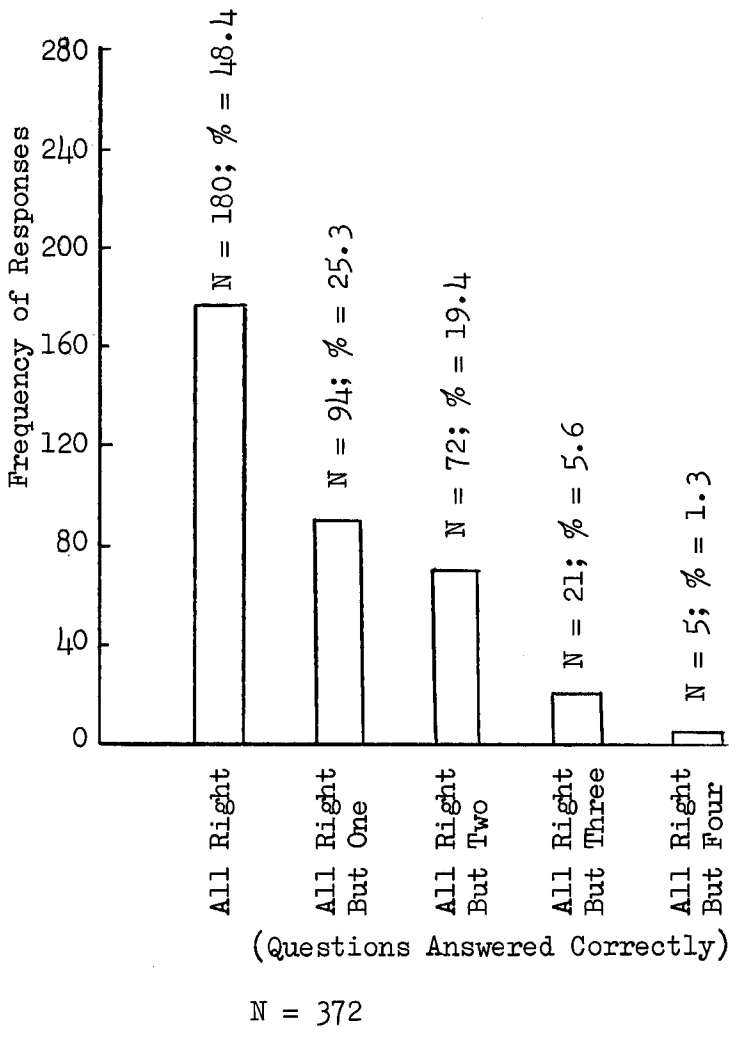


Figure 4. Frequency of composite responses on the English TV segments (Seesaw and Mr. Bezeal) with the language not reinforced by simultaneous action.

value of 25.92 (Table 13) confirmed that there was a significant difference ($p < .001$, 3df).

An unanticipated fact was that the number of correct responses was higher for the Spanish reinforced (74.5 percent achieved 100 percent correct responses) than for the English reinforced (56.1 percent achieved 100 percent correct responses) although 300 (79 percent) of the children understood English. The fact that 51 percent could not understand Spanish would appear to be a factor. The production was the same for both groups with one in each group using animation and one using professional actors.

The composite responses on the bilingual segments followed the pattern of higher correct responses on reinforced segments established by the English and Spanish segments. One hundred and thirty-two (35.5 percent) achieved 100 percent correct responses on the bilingual reinforced segments (Figure 5), and 74 (19.9 percent) achieved 100 percent correct responses on the bilingual nonreinforced segments (Figure 6). A χ^2 test across all response intervals supported this graphic difference. The χ^2 value of 38.78 (Table 13) established that there was a significant difference ($p < .001$, 5df). The correct responses were lower on the bilingual, both reinforced and nonreinforced, than those on either the Spanish or English segments.

The comparisons in this section substantiated the idea that learning was facilitated when the language was reinforced by simultaneous action.

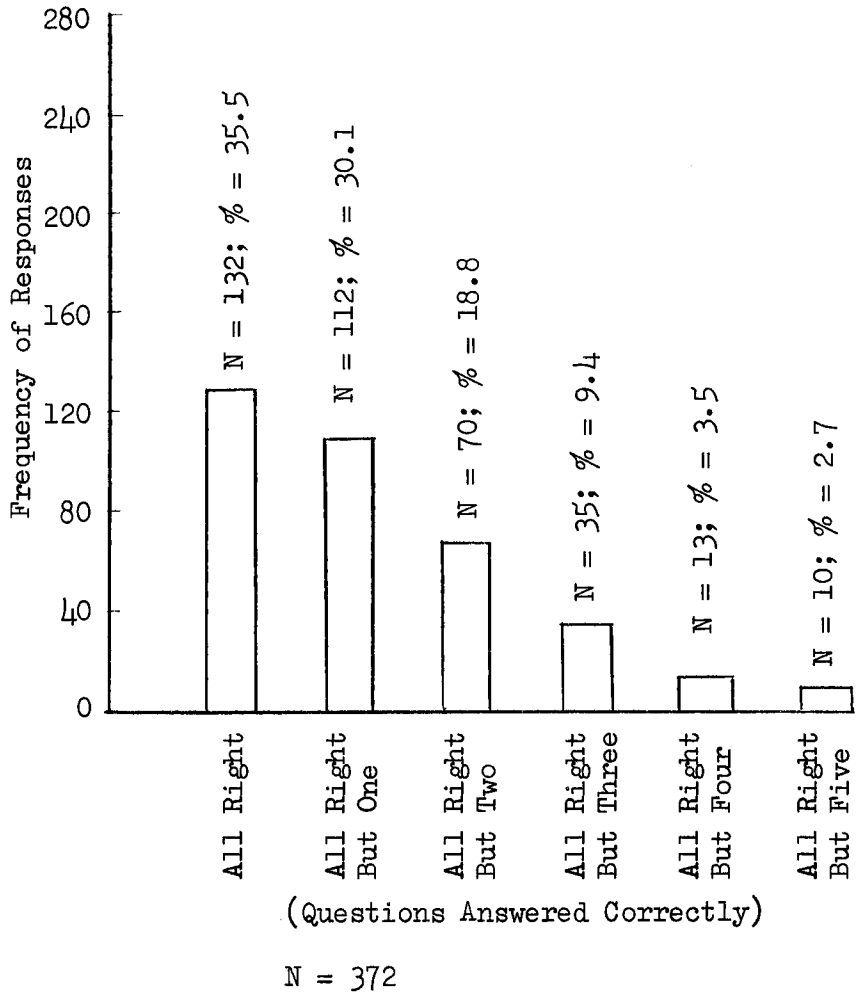
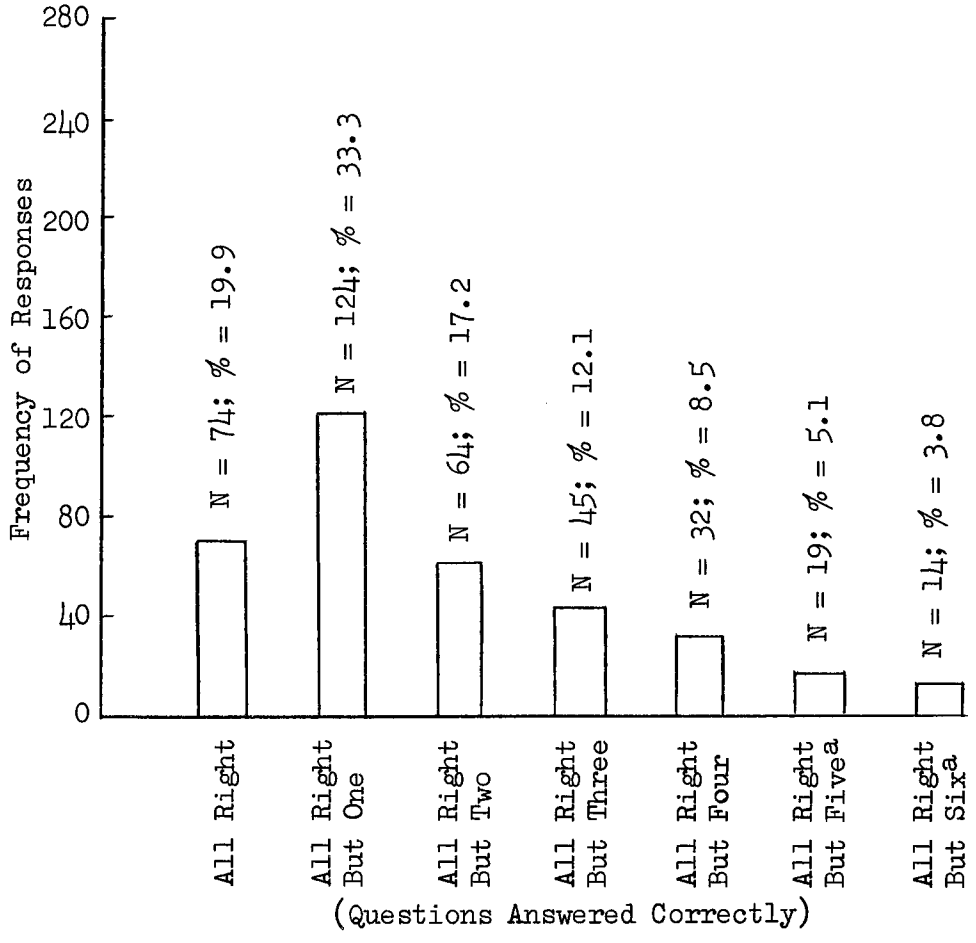


Figure 5. Frequency of composite responses on the bilingual TV segments (Haircut and Subibaja) with the language reinforced by simultaneous action.

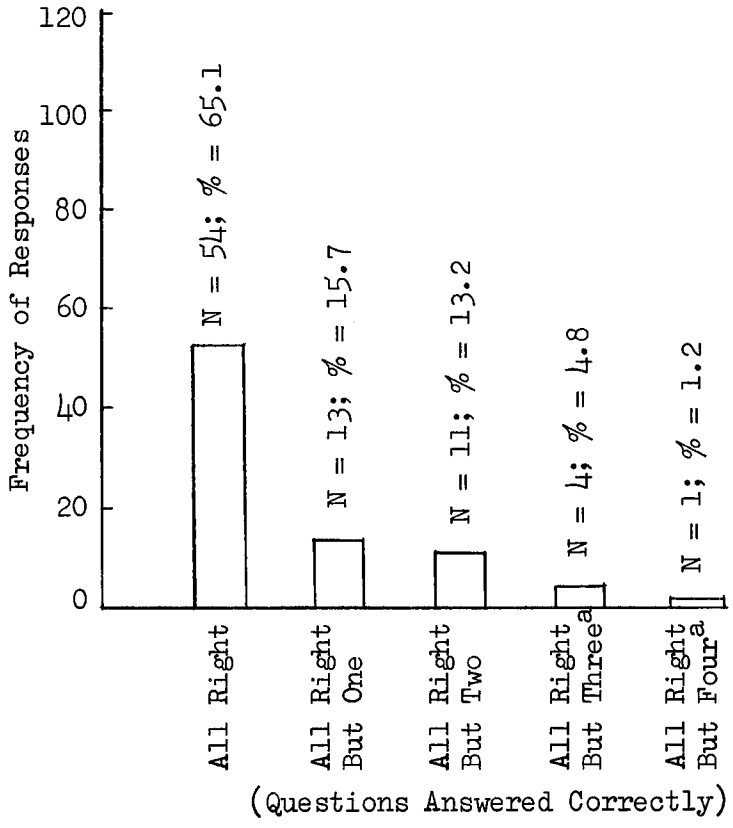


[a]These categories counted as one for χ^2 analyses with Figure 5, page 73, results. N = 372.

Figure 6. Frequency of composite responses on the bilingual TV segments (Baja 500 and Hayride) with the language not reinforced by simultaneous action.

IV. COMPARISON OF THE RESPONSES OF THE ENGLISH, SPANISH, AND BILINGUAL SPEAKERS ON THE SPANISH TV SEGMENTS WITH LANGUAGE REINFORCED BY SIMULTANEOUS ACTION AND ON THE SPANISH TV SEGMENTS WITH THE LANGUAGE NOT REINFORCED BY SIMULTANEOUS ACTION

All three groups achieved higher correct responses on the reinforced Spanish segments than on the nonreinforced Spanish segments. The least variance was found in the responses of the Spanish speakers of whom 65.1 percent achieved 100 percent correct responses on the reinforced segments (Figure 7) and 41.9 percent scored 100 percent on the nonreinforced (Figure 8). The greatest difference, 52.8 percent, was in the responses of the English speaking group of which 73.5 percent scored 100 percent on the reinforced segments (Figure 9) and 20.7 percent scored 100 percent on the nonreinforced segments (Figure 10). The bilingual speakers had the second greatest difference with 74 percent scoring 100 percent on the reinforced Spanish segments (Figure 11), and 29.3 percent scoring 100 percent on the nonreinforced Spanish segments (Figure 12). The decided observed difference between the responses on Spanish reinforced and nonreinforced for all three groups of speakers was supported by a χ^2 test across all response intervals. χ^2 values of 10.64 ($p < .05$, 3df) for the Spanish speakers; 11.06 ($p < .001$, 3df) for the English speakers; and 49.49 ($p < .001$, 3df) for the bilingual speakers established a difference for all three groups (Table 14).



[a]These categories counted as one for χ^2 analyses with Figure 6, page 74, results. N = 83.

Figure 7. Frequency of Spanish speakers' responses on Spanish TV segments (El Tren and Circus) with the language reinforced by simultaneous action.

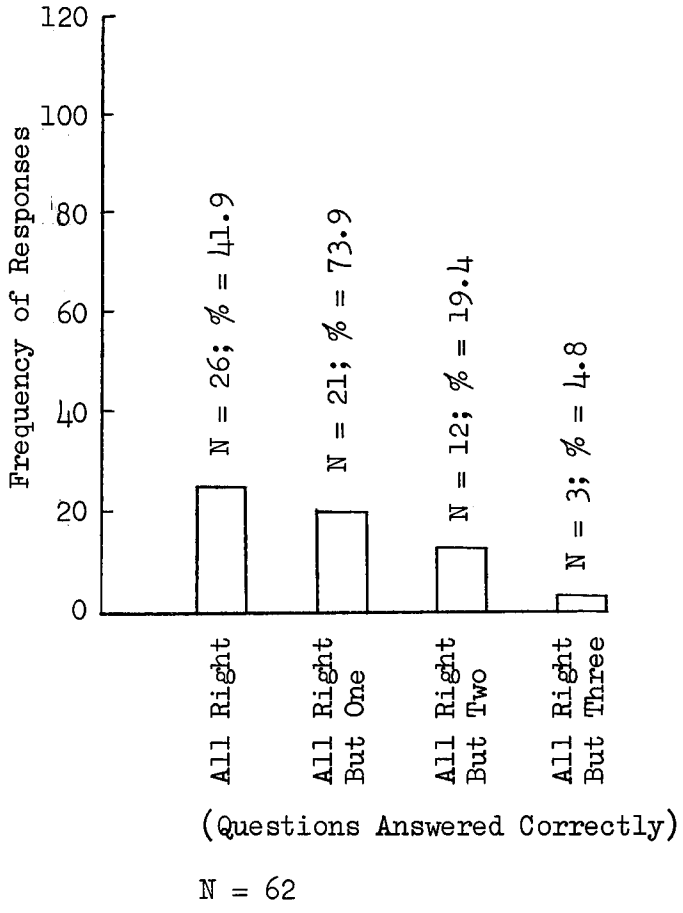
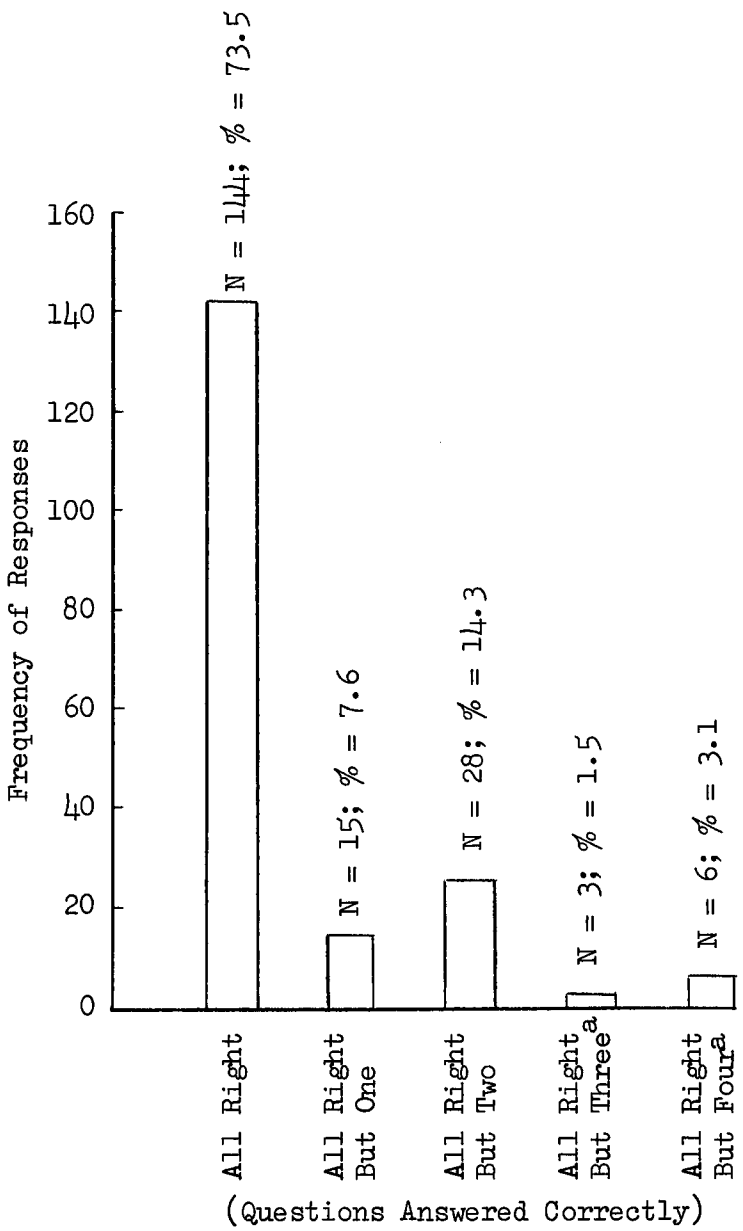


Figure 8. Frequency of Spanish speakers' responses on Spanish TV segments (Redondo and San Juan) with the language not reinforced by simultaneous action.



[a]These categories counted as one for χ^2 analyses with Figure 8, page 77, results. N = 196.

Figure 9. Frequency of English speakers' responses on Spanish TV segments (El Tren and Circus) with the language reinforced by simultaneous action.

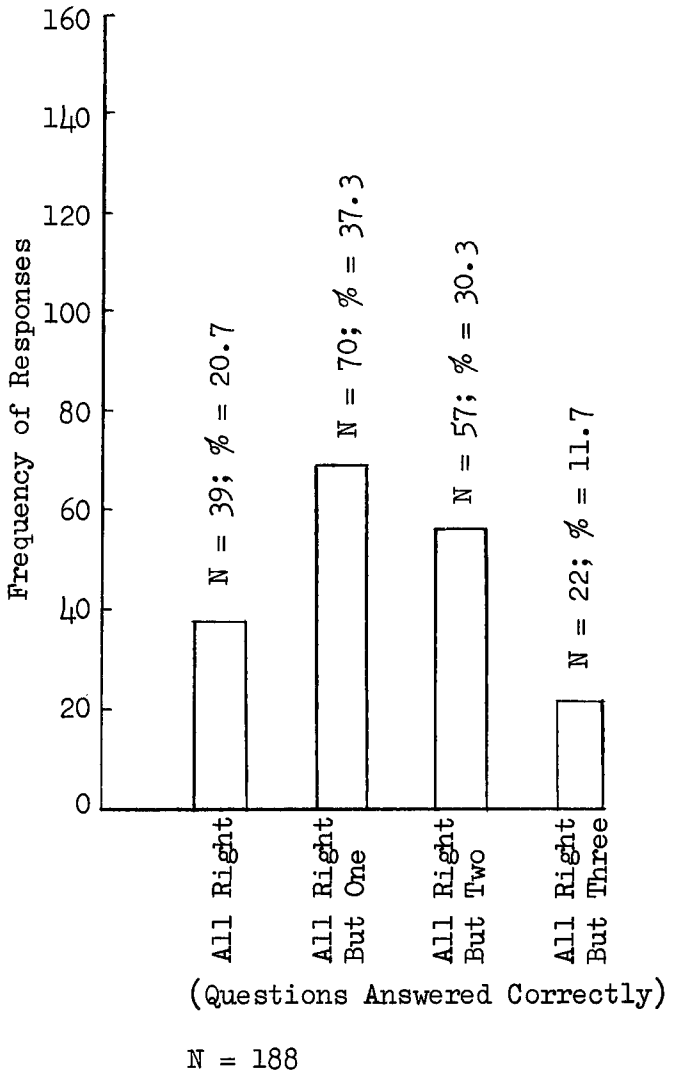
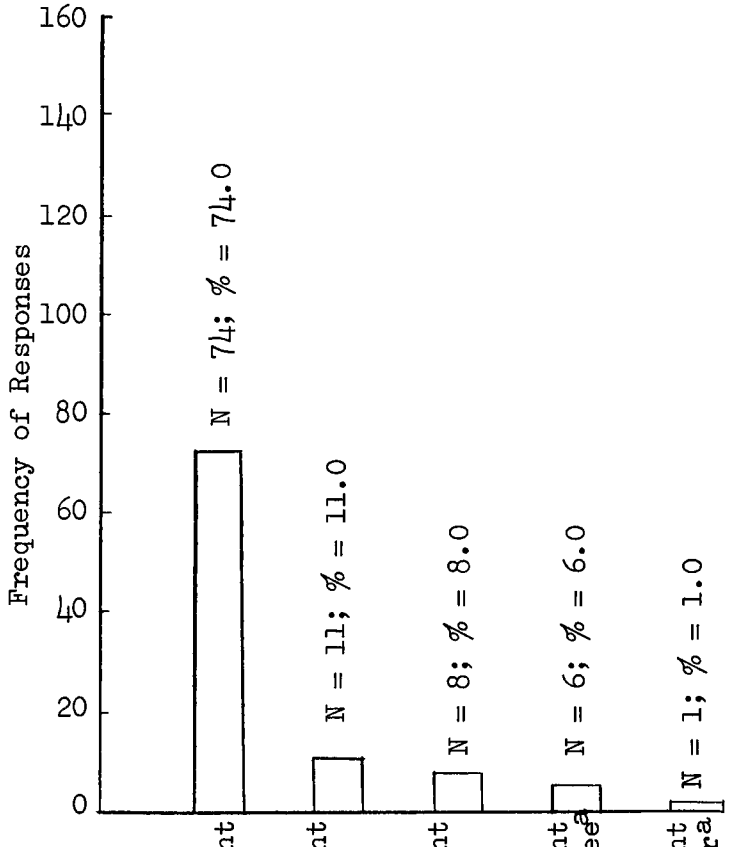


Figure 10. Frequency of English speakers' responses on Spanish TV segments (Redondo and San Juan) with the language not reinforced by simultaneous action.



[a]These categories counted as one for χ^2 analyses with Figure 10, page 79, results. N = 100.

Figure 11. Frequency of bilingual speakers' responses on Spanish TV segments (El Tren and Circus) with the language reinforced by simultaneous action.

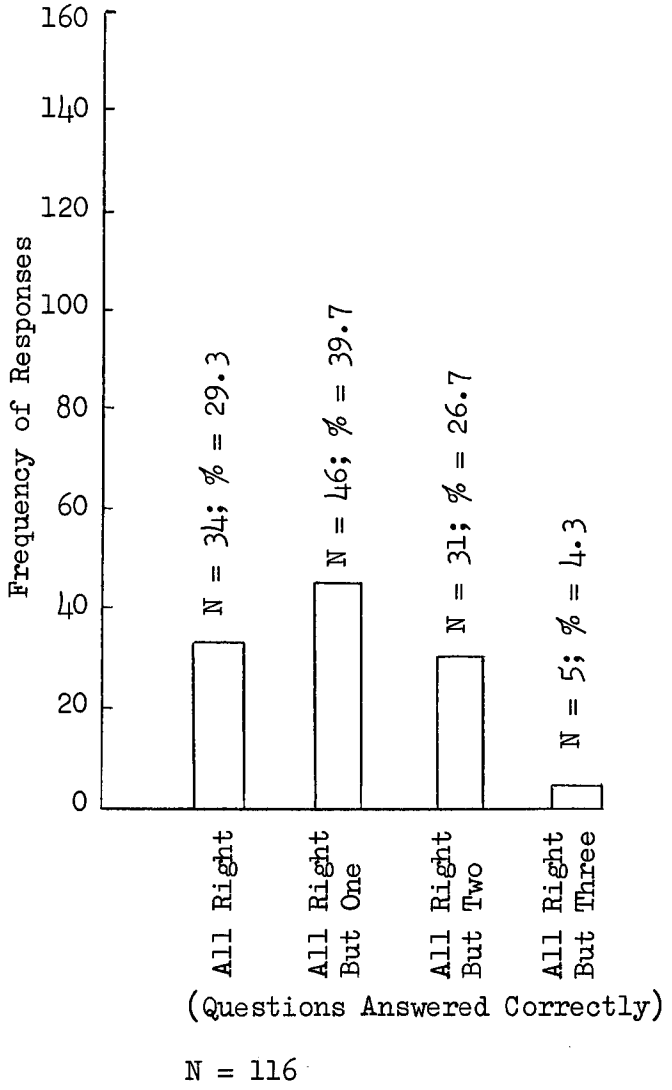


Figure 12. Frequency of bilingual speakers' responses on Spanish TV segments (Redondo and San Juan) with the language not reinforced by simultaneous action.

TABLE 14. CHI SQUARE ANALYSIS OF SPANISH SEGMENTS REINFORCED AND NONREINFORCED

Language of Children	Language of Segment	Type[a] of Segment	χ^2	df	p <
Spanish	Spanish	R	10.64[b]	3	.05
Spanish	Spanish	N			
English	Spanish	R	111.06	3	.001
English	Spanish	N			
Bilingual	Spanish	R	49.49	3	.001
Bilingual	Spanish	N			
Spanish	Spanish	R			
English	Spanish	R	7.13	6	NS
Bilingual	Spanish	R			
Spanish	Spanish	N			
English	Spanish	N	16.72	6	.05
Bilingual	Spanish	N			

[a]R = reinforced; N = nonreinforced.

[b]For purposes of χ^2 computation where the number of response categories were unequal between segments, categories were combined. In all cases this combining involved only the two categories with the least number of correct responses.

It appears that language reinforced by simultaneous action facilitates learning when the language is not spoken by the learner. The English speakers had the highest percentage of all wrong answers with 3.1 percent missing all of the questions on the reinforced segments and 11.7 percent missing all of the questions on the nonreinforced segments. The bilingual speakers had the lowest percentage of all wrong answers with 1.0 percent on the reinforced segments and 4.3 percent on the nonreinforced segments. A χ^2 test, comparing the frequency of responses of all three groups of speakers on Spanish reinforced segments, showed that the frequency of responses was similar. The same test was applied to the correct responses on Spanish nonreinforced segments and produced a χ^2 value of 16.72 (Table 14) and verified the fact that there was a significant difference ($p < .05$, 6df).

The fact that the correct responses of the Spanish speakers on Spanish reinforced segments were lower than the English speakers correct responses supported the idea that reinforcement of language made a greater difference to the children who did not speak the language.[1]

V. COMPARISON OF THE RESPONSES OF THE ENGLISH, SPANISH, AND BILINGUAL SPEAKERS ON THE ENGLISH TV SEGMENTS WITH LANGUAGE REINFORCED BY SIMULTANEOUS ACTION AND ON THE ENGLISH TV SEGMENTS WITH THE LANGUAGE NOT REINFORCED BY SIMULTANEOUS ACTION

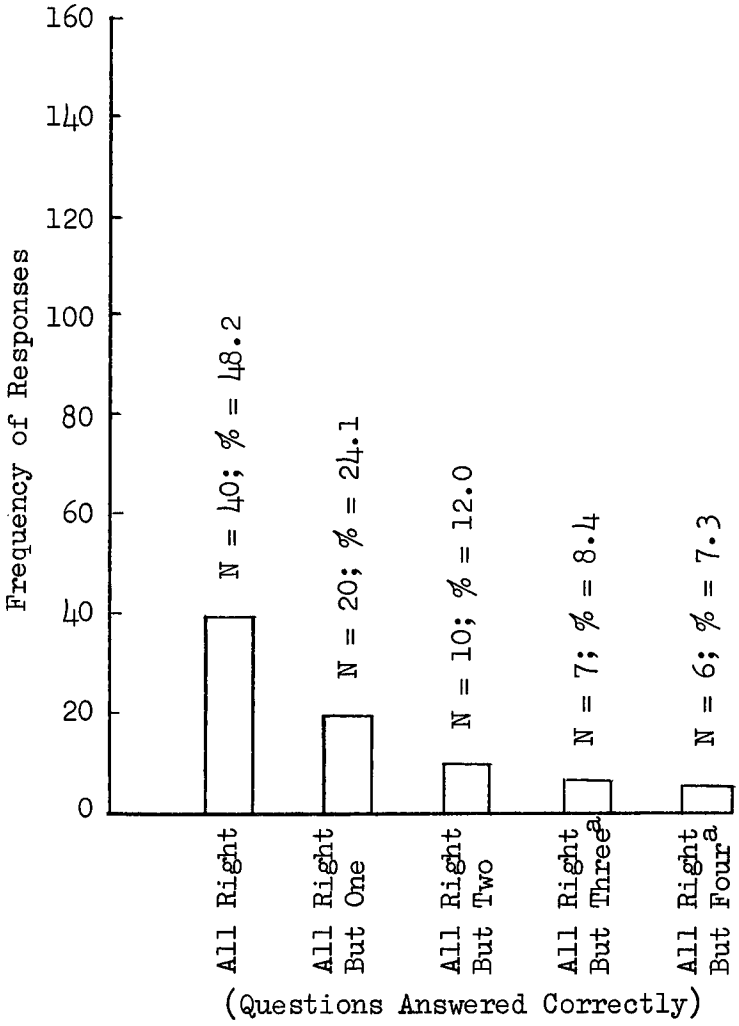
The comparisons in this section followed the pattern of higher frequency of correct responses on the reinforced segments than on the

---

[1]Another point to be considered was the ages of the two groups. The Spanish speakers were younger. Seventy-one percent were under the age of six while only 55 percent of the English speakers fell in that category (Table 4, page 53).

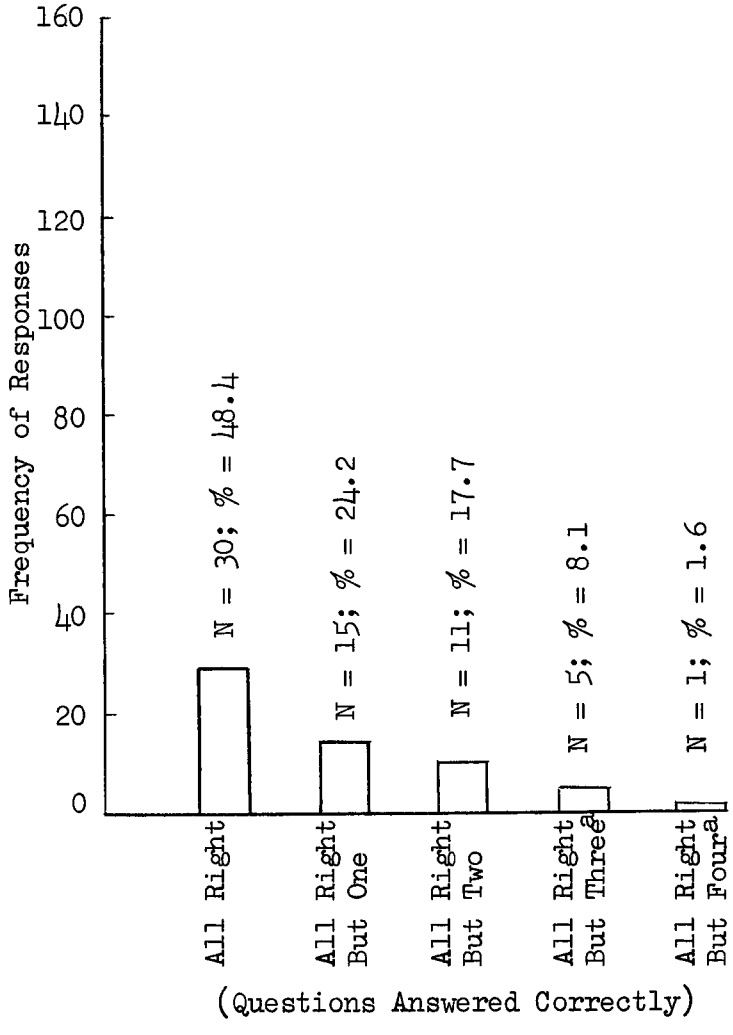
nonreinforced segments, except in the case of the Spanish speakers whose correct responses were 0.2 percent lower on the reinforced segments (Figure 13) than they were on the nonreinforced segments (Figure 14). They also had a higher percentage of all wrong answers (7.2 percent) on the reinforced segments than on the nonreinforced.

The English speakers achieved the highest frequency of correct responses of all three language groups on the reinforced and nonreinforced English segments. The 100 percent correct responses of 59.7 percent of the students on the reinforced (Figure 15) and 51.1 percent on the nonreinforced (Figure 16), however, were not substantially higher than those of the other two language groups. The bilingual speakers had 13.2 percent difference between their 58 percent with perfect responses on the reinforced segments (Figure 17) and their 44.8 percent on the nonreinforced (Figure 18). There was only 1.4 percent between this difference and the 8.6 percent difference of the English speakers. A χ^2 value of 5.14 (Table 15) showed that there was no significant difference in the Spanish speakers' responses on reinforced and nonreinforced. The χ^2 test for all response intervals showed for the English speakers' responses a χ^2 value of 10.42 (Table 15), and, thereby, fortified the fact that there was a significant difference ($p < .05$, 3df) in their responses on reinforced and nonreinforced. A χ^2 value of 9.66 also indicated a significant difference ($p < .05$, 3df) in the responses of the bilingual speakers on reinforced and nonreinforced.



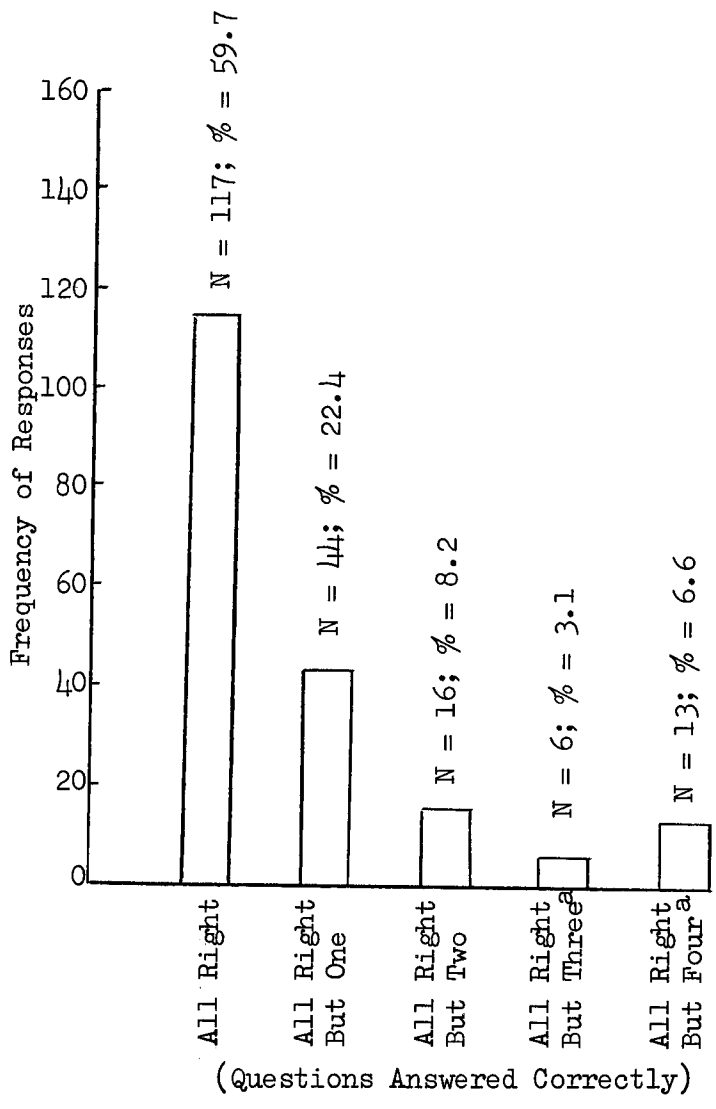
[a]These categories counted as one for χ^2 analyses with Figure 14, page 82, results. N = 83.

Figure 13. Frequency of Spanish speakers' responses on English TV segments (Talking to Mars and Toy Truck) with language reinforced by simultaneous action.



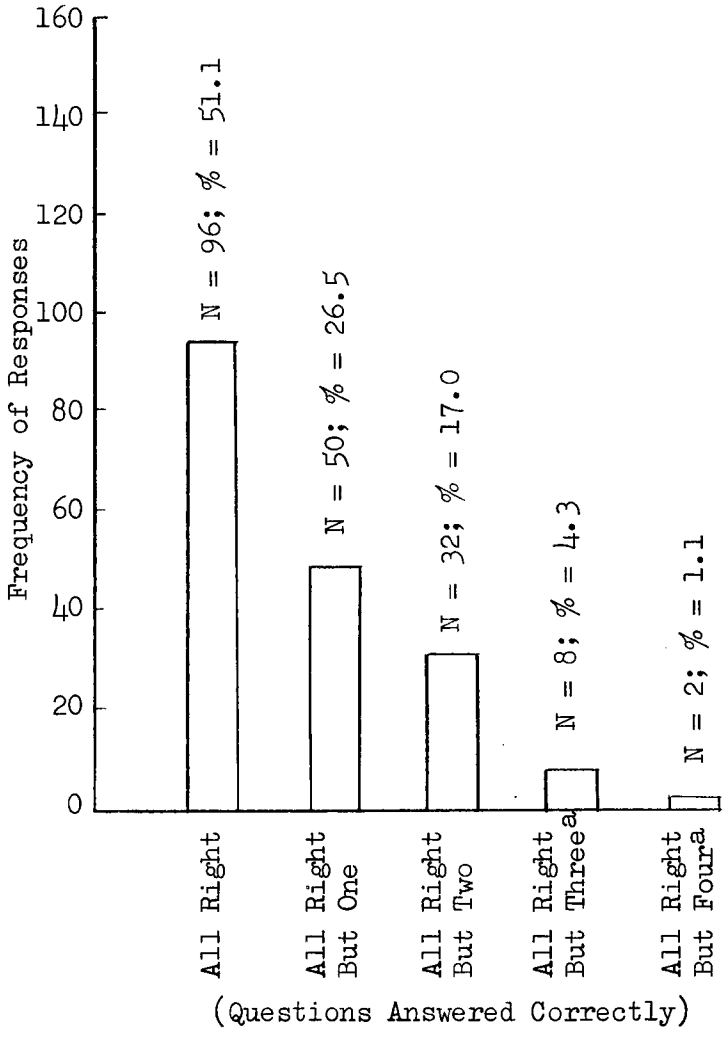
[a]These categories counted as one for χ^2 analyses with Figure 13, page 85, results. N = 62.

Figure 14. Frequency of Spanish speakers' responses on English TV segments (Seesaw and Mr. Bezeal) with the language not reinforced by simultaneous action.



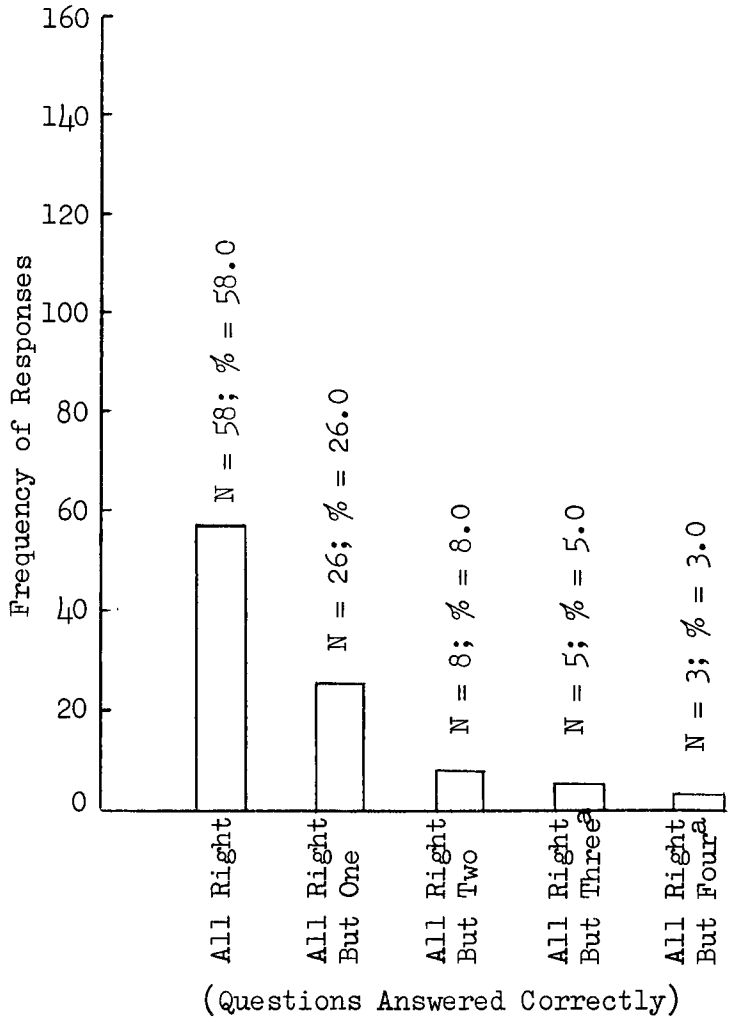
[a]These categories counted as one for χ^2 analyses with Figure 16, page 88, results. N = 196.

Figure 15. Frequency of English speakers' responses on English TV segments (Talking to Mars and Toy Truck) with the language reinforced by simultaneous action.



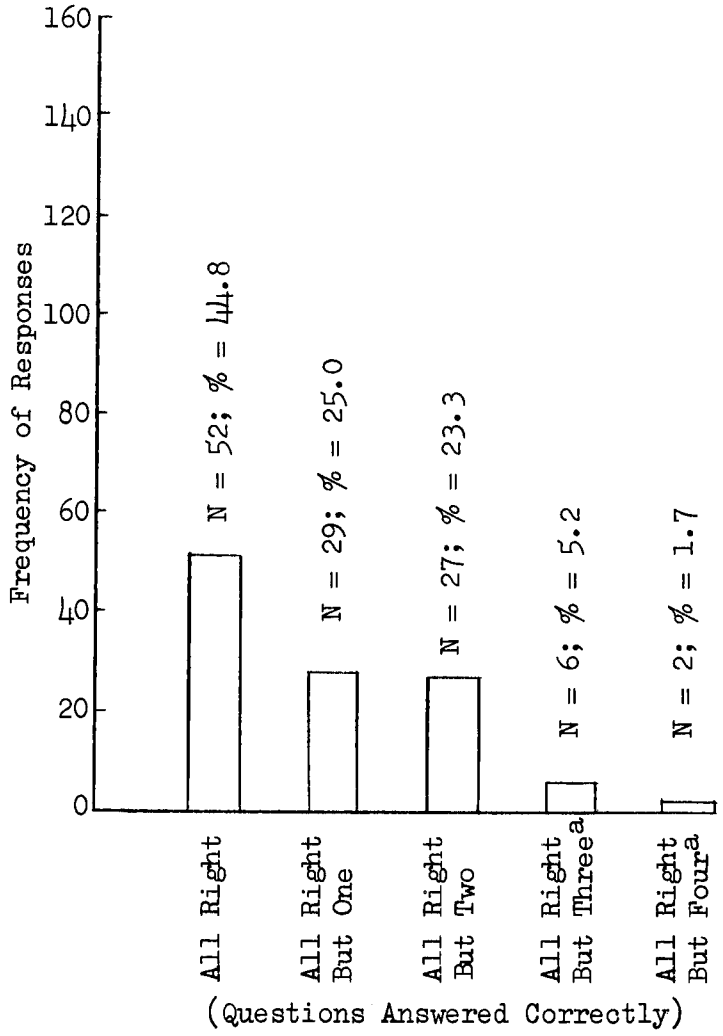
[a]These categories counted as one for χ^2 analyses with Figure 15, page 87, results. N = 188.

Figure 16. Frequency of English speakers' responses on English TV segments (Seesaw and Mr. Bezeal) with the language not reinforced by simultaneous action.



[a]These categories counted as one for χ^2 analyses with Figure 18, page 90, results. N = 100.

Figure 17. Frequency of bilingual speakers' responses on English TV segments (Talking to Mars and Toy Truck) with the language reinforced by simultaneous action.



[a]These categories counted as one for χ^2 analyses with Figure 17, page 87, results. N = 116.

Figure 18. Frequency of bilingual speakers' responses on English TV segments (Seesaw and Mr. Bezeal) with the language not reinforced by simultaneous action.

TABLE 15. CHI SQUARE ANALYSIS OF ENGLISH SEGMENTS REINFORCED AND NONREINFORCED

Language of Children	Language of Segment	Type[a] of Segment	χ^2	df	p <
Spanish	English	R	1.76[b]	3	NS
Spanish	English	N			
English	English	R	10.42	3	.05
English	English	N			
Bilingual	English	R	9.66	3	.05
Bilingual	English	N			
Spanish	English	R			
English	English	R	5.14	6	NS
Bilingual	English	R			
Spanish	English	N			
English	English	N	3.63	6	NS
Bilingual	English	N			

[a] R = reinforced; N = nonreinforced.

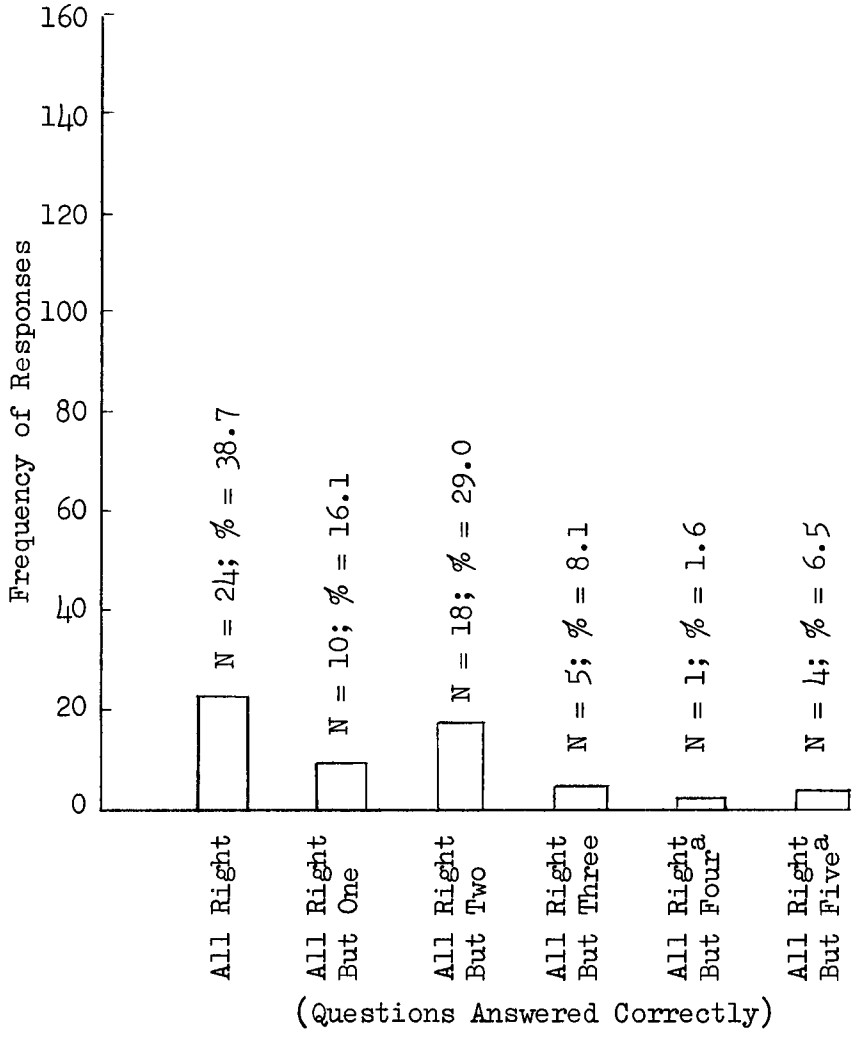
[b] For purposes of χ^2 computation where the number of response categories were unequal between segments, categories were combined. In all cases this combining involved only the two categories with the least number of correct responses.

A comparison of the correct responses above 50 percent for all three groups supported the idea that children who speak the language which is reinforced by simultaneous action do learn more from the material than the children who do not understand the language. The bilinguals achieved 84.0 percent correct responses at the above 50 percent level on the reinforced and 79.8 percent correct responses on the nonreinforced. This is 11.7 percent and 7.2 percent respectively higher than the correct responses of the Spanish speakers at the above 50 percent level.

VI. A COMPARISON OF THE RESPONSES OF THE ENGLISH, SPANISH, AND BILINGUAL SPEAKERS ON THE REINFORCED BILINGUAL TV SEGMENTS WITH LANGUAGE REINFORCED BY SIMULTANEOUS ACTION AND ON THE BILINGUAL TV SEGMENTS WITH THE LANGUAGE NOT REINFORCED BY SIMULTANEOUS ACTION

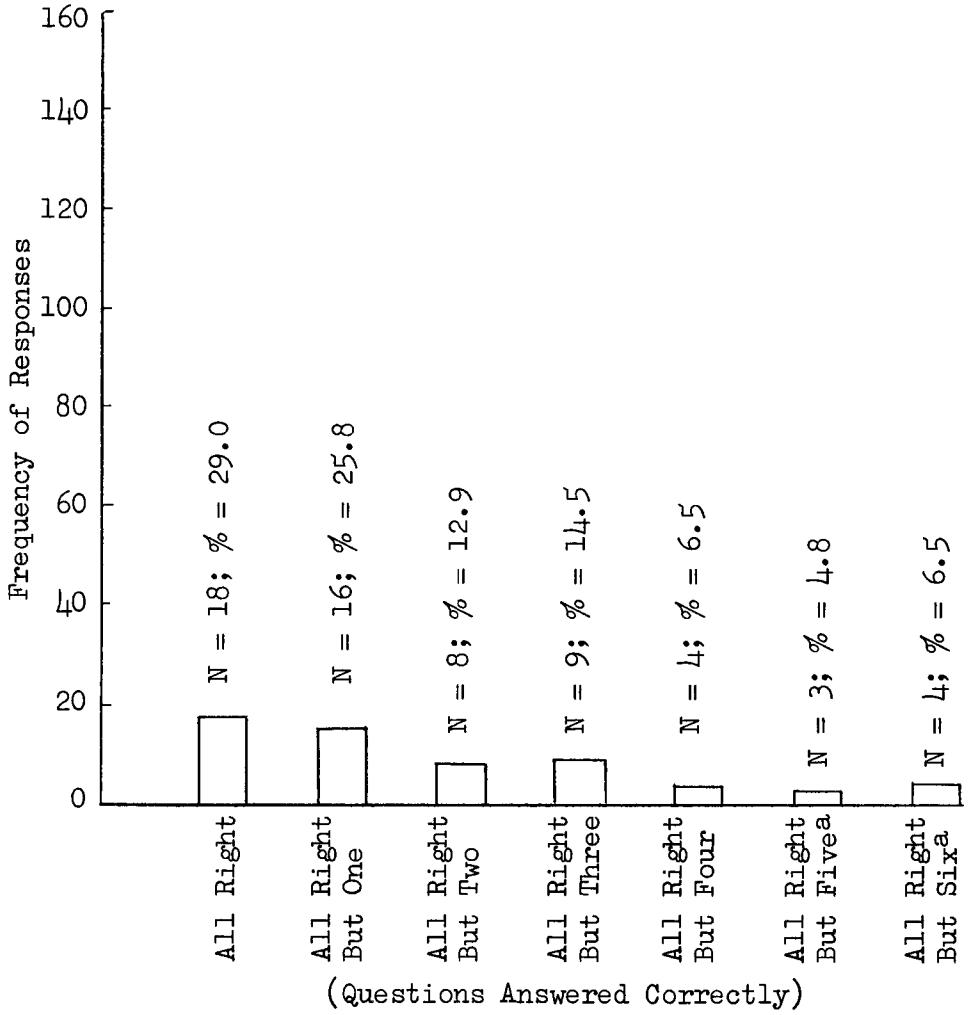
All three groups achieved higher on the reinforced segments than on the nonreinforced ones and at approximately the same rate (Figures 19-24). This observation was supported by the results of χ^2 tests over all of the response intervals which established the fact that there were no significant differences in the response frequencies of the three groups (Table 16) on either the reinforced or nonreinforced bilingual segments.

One group, the English speakers, had a significantly greater number of all correct responses on reinforced (36.2 percent) than on nonreinforced (15.4 percent), or a difference of 20.8 percent more



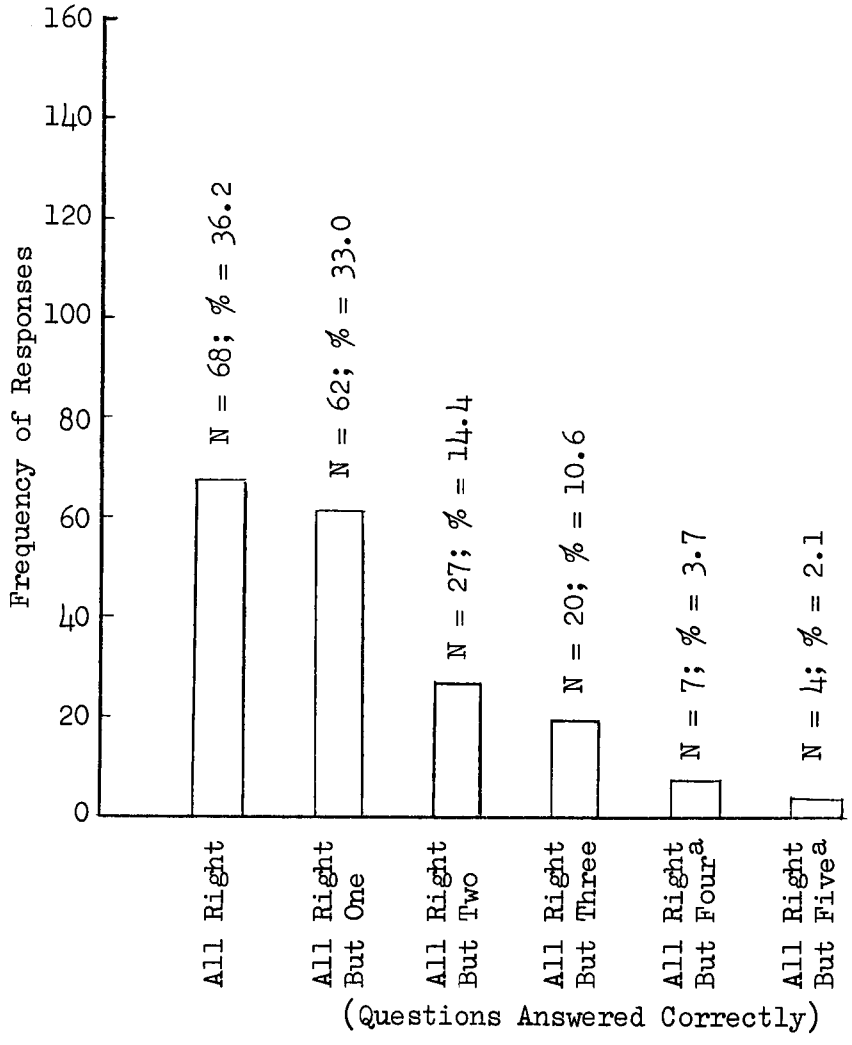
[a]These categories counted as one for χ^2 analyses with Figure 20, page 94, results. N = 62.

Figure 19. Frequency of Spanish speakers' responses on bilingual TV segments (Haircut and Subibaja) with the language reinforced by simultaneous action.



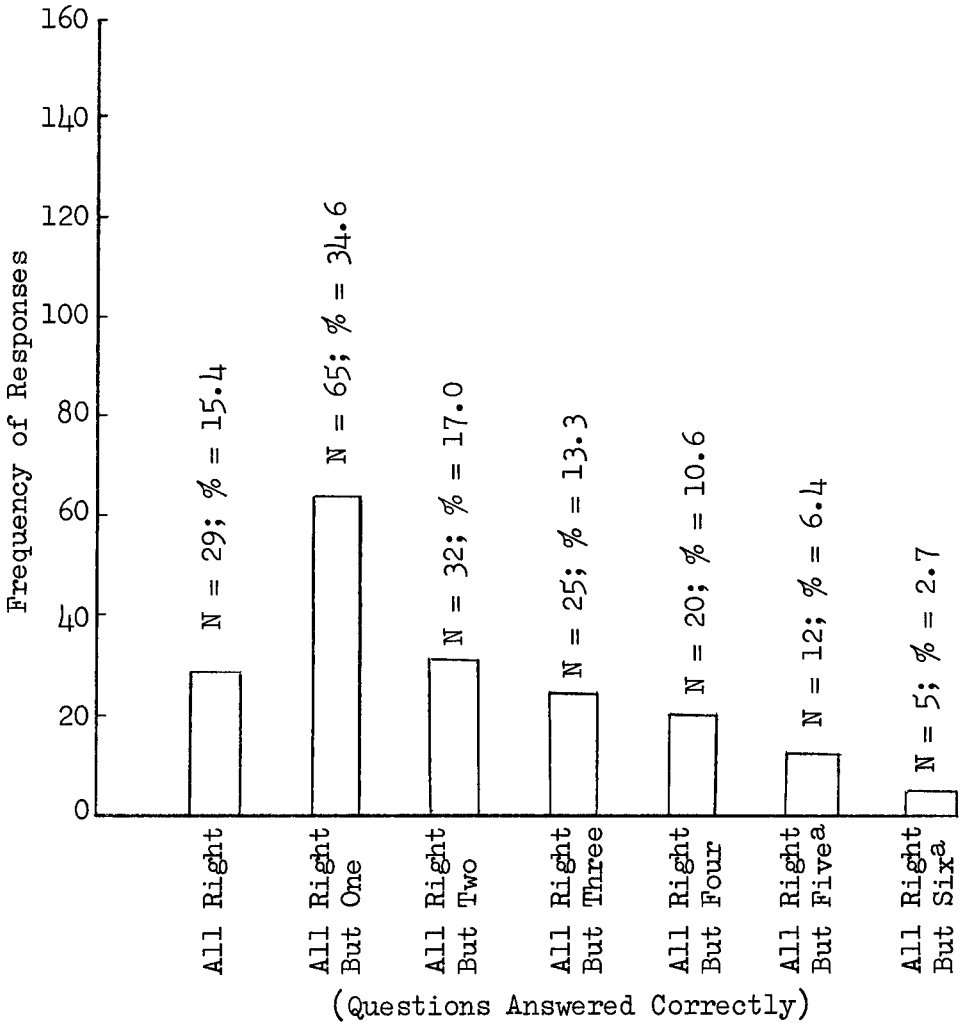
[a]These categories counted as one for χ^2 analyses with Figure 19, page 83, results. N = 62.

Figure 20. Frequency of Spanish speakers' responses on bilingual TV segments (Baja 500 and Hayride) with the language not reinforced by simultaneous action.



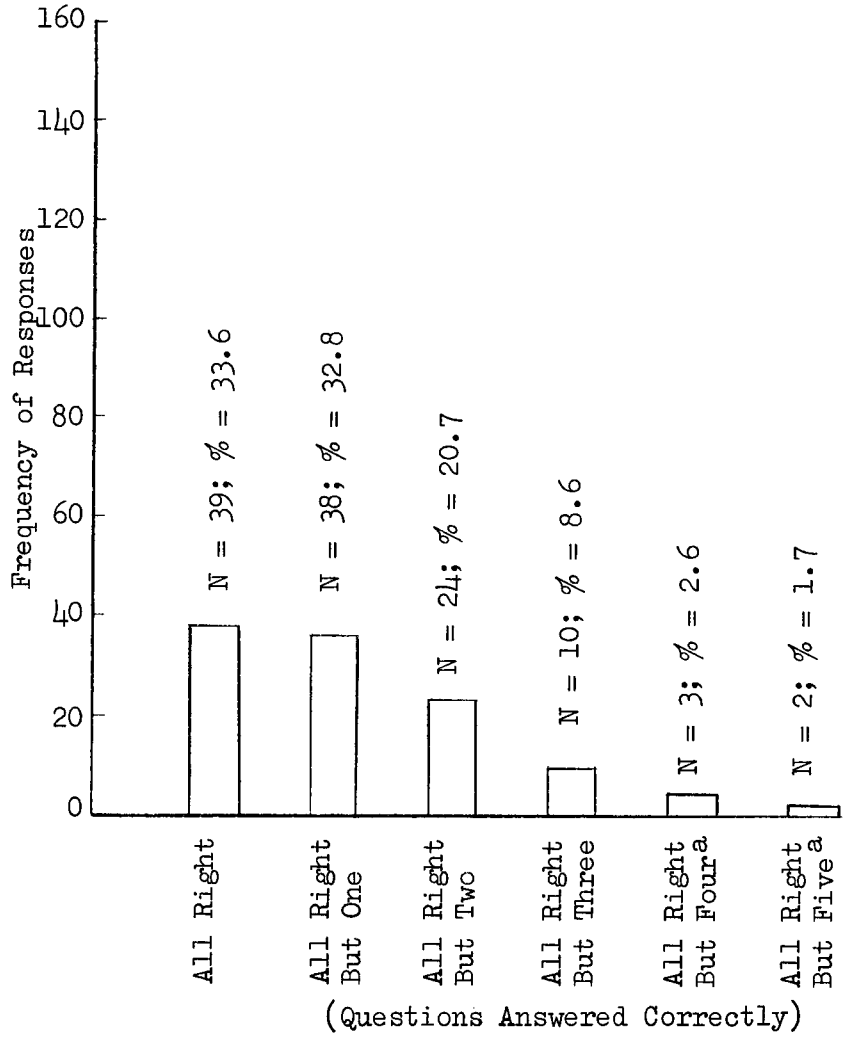
[a]These categories counted as one for χ^2 analyses with Figure 22, page 96, results. N = 188.

Figure 21. Frequency of English speakers' responses on bilingual TV segments (Haircut and Subibaja) with the language reinforced by simultaneous action.



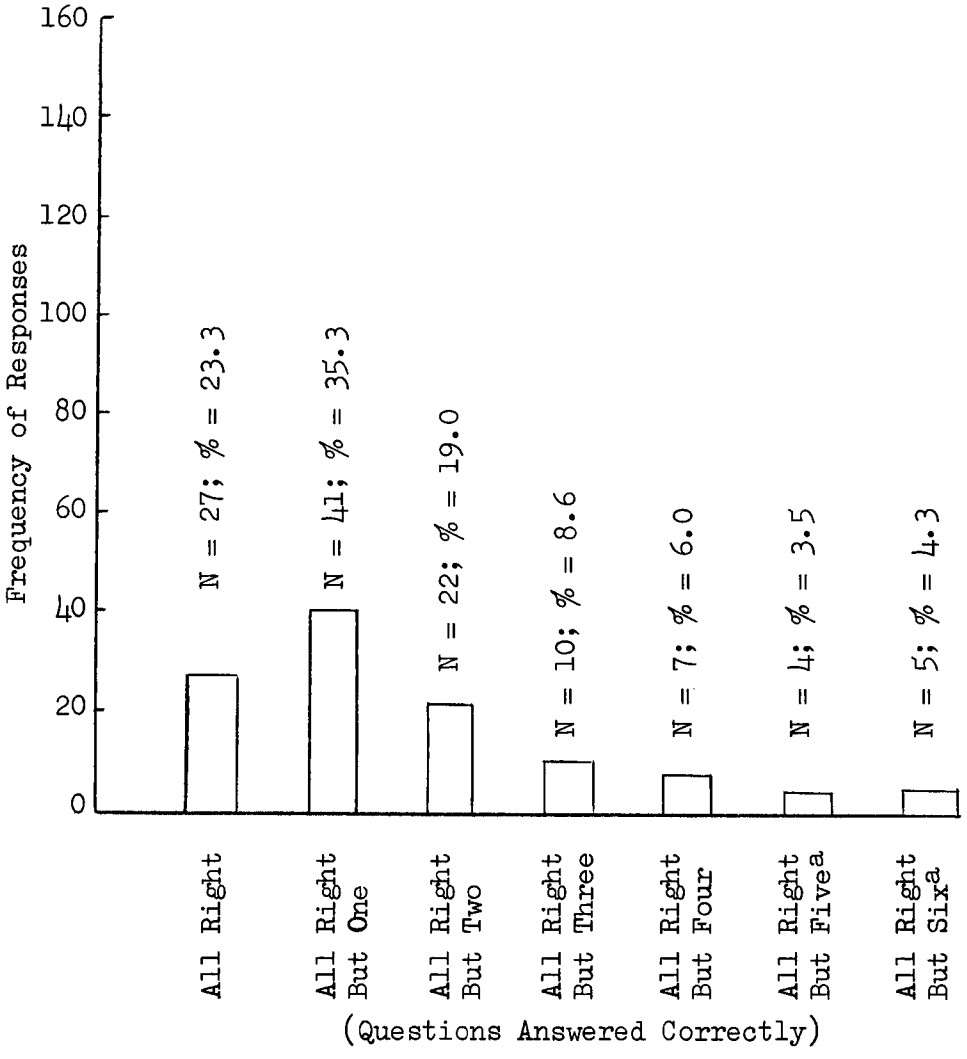
[a]These categories counted as one for χ^2 analyses with Figure 21, page 95, results. N = 188.

Figure 22. Frequency of English speakers' responses on bilingual TV segments (Baja 500 and Hayride) with the language not reinforced by simultaneous action.



[a]These categories counted as one for χ^2 analyses with Figure 24, page 98, results. N = 116.

Figure 23. Frequency of bilingual speakers' responses on bilingual TV segments (Haircut and Subibaja) with the language reinforced by simultaneous action.



[a]These categories counted as one for χ^2 analysis with Figure 23, page 97, results. N = 116.

Figure 24. Frequency of bilingual speakers' responses on bilingual TV segments (Baja 500 and Hayride) with the language not reinforced by simultaneous action.

TABLE 16. CHI SQUARE ANALYSIS OF BILINGUAL SEGMENTS REINFORCED AND NONREINFORCED

Language of Children	Language of Segment	Type[a] of Segment	χ^2	df	p <
Spanish	Bilingual	R	9.48[b]	4	NS
Spanish	Bilingual	N			
English	Bilingual	R	30.94	4	.001
English	Bilingual	N			
Bilingual	Bilingual	R	8.02	4	NS
Bilingual	Bilingual	N			
Spanish	Bilingual	R			
English	Bilingual	R	11.26	8	NS
Bilingual	Bilingual	R			
Spanish	Bilingual	N			
English	Bilingual	N	10.34	8	NS
Bilingual	Bilingual	N			

[a]R = reinforced; N = nonreinforced.

[b]For purposes of χ^2 computation where the number of response categories were unequal between segments, categories were combined. In all cases this combining involved only the two categories with the least number of correct responses.

100 percent correct responses on the reinforced segments (Figures 21 and 22). This single significant difference where bilingual segments were involved was established by a χ^2 test on the response intervals of the responses of the English speakers on the reinforced and nonreinforced bilingual segments. A χ^2 value of 30.94 (Table 16) was achieved ($p < .001$, 4df). The Spanish speakers had the closest number of correct responses on the bilingual reinforced and nonreinforced segments with 9.7 percent difference (Figures 19 and 20). When the responses above the 50th percentile for the three groups were compared, the bilingual speakers had the highest number of correct responses with 87.1 percent on the reinforced and 77.6 percent on the nonreinforced (Figures 23 and 24).

VII. A COMPARISON OF THE RESPONSES OF EACH OF THE LANGUAGE GROUPS ON ALL THREE LANGUAGE CATEGORIES OF TV SEGMENTS

The greatest difference in the Spanish speakers' responses was between the Spanish reinforced and nonreinforced segments, and the least difference was between their responses on the English reinforced and nonreinforced segments. This statement was fortified by a χ^2 value of 10.64 (Table 14, page 82) on the Spanish segments--a significant difference ($p < .05$, 3df), and a χ^2 value of 1.76 (Table 15, page 91) (NS) on the English segments. However, when considering correct responses above the 50th percentile, their greatest difference was between the bilingual reinforced (83.8 percent) and nonreinforced

(67.7 percent) (Table 17), although a nonsignificant χ^2 value of 9.48 (Table 16, page 99) showed that the frequency of their responses on bilingual reinforced and nonreinforced was similar.

The English speakers were the only group with a significant difference in the frequency of their responses on all three groups of segments. Their greatest difference which was between the Spanish reinforced and nonreinforced was supported by a χ^2 value of 111.06 ($p < .001$, 3df) (Table 14, page 82). Their difference between bilingual reinforced and nonreinforced was second with a χ^2 value of 30.94 ($p < .001$, 4df) (Table 16). It was followed by their least difference in frequency of responses which was between their own English language reinforced and nonreinforced segments supported by a χ^2 value of 10.42 ($p < .05$, 3df) (Table 15, page 91). Their responses followed the same pattern when 100 percent correct responses and correct responses over the 50th percentile were studied.

The bilingual speakers fell between the English speakers and the Spanish speakers with a significant difference in their responses on the Spanish reinforced and nonreinforced [χ^2 value of 9.66 ($p < .05$, 3df) (Table 15)]. A χ^2 value of 8.02 (NS $p < .05$, 4df) (Table 16) revealed the similarity of their scores on the bilingual reinforced and nonreinforced segments. They repeated the same response pattern in 100 percent correct responses on all three language segments. An analysis of the bilingual speakers' correct responses over the 50th percentile brought out a new factor. Here they had a 4.4 percent difference between their responses on the English reinforced and

TABLE 17. THE PERCENT OF ENGLISH, SPANISH, AND BILINGUAL SPEAKERS WHO SCORED ABOVE THE 50TH PERCENTILE ON SIX SPANISH, ENGLISH, AND BILINGUAL TV SEGMENT CATEGORIES

Speakers	Spanish Reinforced	Spanish Nonreinforced	English Reinforced	English Nonreinforced	Bilingual Reinforced	Bilingual Nonreinforced
Spanish	80.8%	75.8%	72.3%	72.6%	83.8%	67.7%
English	81.2%	57.9%	82.1%	77.7%	83.6%	67.0%
Bilingual	85.0%	69.0%	84.0%	79.8%	87.1%	77.6%

nonreinforced (Table 17) and a 16.6 percent difference between their responses on bilingual reinforced and nonreinforced.

Another part of this comparison called for looking at the relationship between the responses of all three language groups on each of the language categories of segments reinforced and nonreinforced. The three groups of speakers performed in a similar way in five of the six comparisons (Tables 14, 15, and 16, pages 82, 91, and 99 respectively). There was a significant difference only in their responses on the Spanish nonreinforced segments. A χ^2 value of 16.72 ($p < .05$, 6df) (Table 14) supported this difference which was also shown in the 100 percent correct responses of the Spanish speakers (41.9 percent) (Figure 8, page 77), the English speakers (20.7 percent) (Figure 10, page 79), and the bilingual speakers (29.3 percent) (Figure 12, page 81).

A comparison of all three groups of speakers' correct responses over the 50th percentile on all six groups of TV segments (Table 17) showed that the bilingual speakers had the highest number of correct responses on all categories except the Spanish nonreinforced segments. The Spanish speakers (75.8 percent) outscored the other two groups on this category.

The correct responses above the 50th percentile of the bilingual speakers on the bilingual segments (87.1 percent on reinforced and 77.6 percent on nonreinforced) were higher than their correct responses on English segments (85.0 percent on reinforced and 69.0 percent on nonreinforced) and on Spanish segments (84.0 percent on reinforced and

79.8 percent on nonreinforced).

VIII. COMPARISON OF COMPOSITE RESPONSES ON ANIMATION SEGMENTS AND PROFESSIONAL ACTOR SEGMENTS

One of the factors to be considered as well as the language was the type of production used in each of the segments. Table 18 presents a description of each segment including the name, language, number of questions, type of production, and whether or not it was reinforced. Although there were twice as many segments with professional actors as there were with animation, a comparison was made of the responses on four animation segments and eight segments with professional actors. The composite animation correct responses at every level were better than the correct responses on segments with professional actors. Fifty-eight percent of the children achieved 100 percent correct responses on animation (Table 19), and only 34.42 percent had 100 percent correct responses on the segments with professional actors (Table 20). The 23.58 percent margin was narrowed when the 50 percent or above correct responses were compared. Ninety-two percent of the children achieved 50 percent or above correct responses on the animation segments and 83.16 percent reached that percent on the segments with professional actors. This reduced the margin to 8.84 percent.

TABLE 18. COMPREHENSIVE DESCRIPTION OF THE 12 TV SEGMENTS USED IN THIS STUDY

Segment	Type[a]	Language	No. of Questions	Animation	Professional Actors	Show
Circus	R	Spanish	1	x		2
El Tren	R	Spanish	3	x		2
Viejo San Juan	N	Spanish	1		x	3
Redondos	N	Spanish	2	x		3
Toy Truck	R	English	2		x	2
Talking to Mars	R	English	2		x	2
Mr. Bezeal	N	English	2	x		3
Seesaw	N	English	2		x	3
Haircut	R	Bilingual	2		x	3
Subibaja	R	Bilingual	3		x	3
Baja 500	N	Bilingual	3		x	3
Hayride	N	Bilingual	3		x	3

[a]R = reinforced; N = nonreinforced.

TABLE 19. COMPOSITE RESPONSES ON ANIMATION SEGMENTS

Children		Correct
No.	Percent	Response
9	2	0%
21	6	25%
54	15	50%
72	19	75%
221	58	100%

N = 755

TABLE 20. COMPOSITE RESPONSES ON SEGMENTS WITH PROFESSIONAL ACTORS

Children		Correct
No.	Percent	Response
84	5.6	0%
19	1.26	16.6%
13	0.86	20.0%
18	1.20	25.0%
83	5.53	33.3%
35	2.33	40.0%
81	5.40	50.0%
70	4.66	60.0%
252	16.81	66.6%
92	6.13	75.0%
112	7.47	80.0%
124	8.27	83.3%
516	34.42	100.0%

N = 1499

IX. COMPARISON OF COMPOSITE RESPONSES ON SEGMENT WITH ADULT CHARACTERS AND SEGMENT WITH CHILD ACTOR

This comparison was made with an awareness of several limitations. There were only two segments involved. The segment with adults was animation using the Spanish language and the segment with a child used a professional actor speaking English. There was only one question for the adult segment while there were two for the child segment.

Three hundred and fifty-two children answered correctly the question on the adult segment. This 91.9 percent (Table 21) was 15.1 percent higher than the 76.8 percent (294) who achieved 100 percent correct responses on the child actor segment. This difference was achieved in spite of the fact that the adult segment was in Spanish, a language which 51.2 percent of the children did not understand. The deciding factor seemed to be that the adult segment was an animation segment with the main word presented in several repetitive situations.

TABLE 21. COMPOSITE RESPONSES ON SEGMENT WITH ADULT ACTORS AND SEGMENT WITH CHILD ACTOR

	Children's Responses		
Segment	No.	Percent of Total	Correct Response
Toy Truck (Child)	294	76.8	100%
	43	11.2	50%
	46	12.0	0%
Circus (Adult)	352	91.9	100%
	31	8.1	0%

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

I. SUMMARY

The major purpose of this study was to determine the effect of language reinforced by simultaneous action on the comprehension of television segments by English, Spanish, and bilingual speakers from four to eight years of age.

In order to determine the effectiveness of reinforcement of language by simultaneous action, an answer to the following major questions was sought: Is learning from TV segments associated with language comprehension facilitated when the language is reinforced by simultaneous action?

There were four sub-questions dealing with the effects of language reinforced by simultaneous action on the learning of English, Spanish, and bilingual speakers.

1. Is the learning of children who do not understand the language used in TV segments facilitated when the language is reinforced by simultaneous action?

2. Is the learning of children who do understand the language used in TV segments facilitated when the language is reinforced by simultaneous action?

3. Is there a difference in the learning of children who understand the language used in TV segments when the language is reinforced

by simultaneous action and the learning of children who do not understand the language that is reinforced by simultaneous action?

4. Is there a difference in the learning of children who understand either English or Spanish when both Spanish and English are used in a TV segment and when only one of the languages is used?

Two related questions were: (1) Is there a difference in the learning of children when the TV segment is animated and when the TV segment has professional actors? (2) Is there a difference in the learning of children when the TV segment has child actors and when the TV segment has only adult actors?

Answers to these questions were sought through the analysis of data collected by means of a questionnaire individually administered to children in seven metropolitan areas. The questionnaire was designed to measure the child's comprehension of the content of two 30-minute bilingual television shows. This study, which was part of a larger study, dealt with 12 of the 41 TV segments viewed by the children. These 12 segments were divided first into two categories: (1) six segments with language reinforced by simultaneous action, and (2) six segments with no reinforcement of language by simultaneous action. They were sub-divided under each category to include two Spanish, two English, and two bilingual segments.

In order to answer the four sub-questions that dealt not only with the relationship between language and reinforcement by simultaneous action, but dealt also with the relationship between the language used in the segment and the language of the learner, the answers of

the children were grouped by English, Spanish, and bilingual speakers.

The TV segments were grouped by animation and professional actors in order to compare the effectiveness of animation with that of professional actors in the teaching of young children. The third grouping of the TV segment was designed to compare the effectiveness of child characters with the effectiveness of child characters with the effectiveness of adult characters in TV segments used in the teaching of young children.

Three hundred and eighty-three children viewed Bilingual Children's Television Show 2 and 372 saw Show 3 later in the week. Only the data in the questionnaire related to the 12 selected segments were used. The data were quantified as much as possible and presented in a series of tables and figures. The nonparametric chi-square (χ^2) test was used to test for significance of differences between observed and expected frequencies where this procedure was applicable.

II. FINDINGS

An analysis of the data collected for this study produced the following findings:

1. The major question concerning the facilitation of learning when the language is reinforced by simultaneous action was answered in the affirmative. Children had a higher number of correct responses on a criterion referenced test on the TV segments with language reinforced by simultaneous action than they had on a similar test on the TV segments with language not reinforced by simultaneous action. There

was a difference of 22.98 percent between the 54.56 percent who achieved 100 percent correct responses on the reinforced TV segments and the 31.58 percent who achieved 100 percent correct responses on the nonreinforced TV segments. A greater percent (25 percent) existed between the responses at the 75 percent level. The difference narrowed to 10.30 percent at the 50 percent level. The χ^2 tests between responses to reinforced and nonreinforced segments in all three languages definitely supported the fact that children performed better when the language was reinforced by simultaneous action. There were significant differences at the .001 level in the responses of the children on the reinforced and nonreinforced segments for all three language categories (Table 13, page 69).

2. A definite yes was found to sub-question 1 which asked if children who do not understand the language perform better when the language is reinforced by simultaneous action. When the frequency of composite responses on the English, Spanish, and bilingual TV segments with the language reinforced by simultaneous action were compared with those that were nonreinforced, 7.6 percent more of the children achieved 100 percent correct responses on the reinforced English segments than on the nonreinforced English segments. The difference between correct responses on the reinforced and nonreinforced bilingual segments was 15.6 percent.

Although 51 percent of the children could not speak Spanish, 71.5 percent of all of the children tested achieved a 100 percent correct response on the Spanish TV segments which had the Spanish language

reinforced by simultaneous action, while only 27.4 percent achieved a 100 percent correct responses on the Spanish nonreinforced segments. This wide difference of 44.1 percent indicated that the learning of non- Spanish speakers was greatly facilitated when the language was reinforced by simultaneous action. This difference was further supported by a χ^2 value of 153.29 ($p < .001$, 3df) (Table 13, page 69).

This positive value of reinforcing language with simultaneous action for children who do not speak the language was firmly established when the responses of the English speakers on the reinforced and nonreinforced Spanish TV segments were compared. Seventy-three and five tenths (73.5) percent of the English-speaking children achieved 100 percent correct responses on the Spanish TV segments which had the Spanish language reinforced by simultaneous action, but only 20.7 percent achieved 100 percent correct responses on the Spanish TV segments which did not have the Spanish language reinforced by simultaneous action. A χ^2 value of 111.06 ($p < .001$, 3df) verified this significant difference.

3. In response to sub-questions 2 and 3, the findings showed that children who understand the language do perform better when the language is reinforced by simultaneous action. However, the improvement in performance is less than that of children who do not understand the language. The difference between responses on Spanish reinforced and nonreinforced segments was significant at the .001 level for the English ($\chi^2 = 111.06$) and bilingual ($\chi^2 = 49.49$) speakers, but the difference for the Spanish speakers ($\chi^2 = 10.64$) was significant only

at the .05 level (Table 14, page 82). A comparison of Spanish speakers' responses on Spanish TV segments with the language reinforced by simultaneous action and on nonreinforced Spanish TV segments showed a difference of 23.2 percent in favor of those who achieved 100 percent correct responses on the reinforced segments (65.1 percent reinforced; 41.9 percent nonreinforced). This was 29.6 percent less than the difference between the number of 100 percent correct responses of the English speakers on the reinforced and nonreinforced Spanish TV segments (73.5 percent reinforced; 20.7 percent nonreinforced). The English speakers' responses on the English TV segments were also higher on the segments with the language reinforced by simultaneous action. However, the difference (7.6 percent) between 100 percent on English reinforced (59.7 percent) and English nonreinforced (51.1 percent) was not nearly as great as the difference between their responses on the reinforced and nonreinforced Spanish TV segments. These findings indicated the importance of language being reinforced by simultaneous action for all children, but especially for children who do not speak the language.

4. In response to sub-question 4, the analysis indicated that Spanish speakers and English speakers achieved more 100 percent correct responses when the segments had only one language. The 100 percent correct responses of the English speakers on the bilingual TV segments (36.2 percent reinforced; 15.4 percent nonreinforced) and the Spanish speakers' 100 percent correct responses (38.7 percent reinforced; 29.0 percent nonreinforced) were lower than their correct responses on

either the Spanish TV segments or the English TV segments. However, their correct responses were higher on the bilingual segments. A comparison (Table 17, page 102) of the bilingual TV segments above the 50th percentile correct responses of the English speakers (83.6 percent reinforced; 77.0 percent nonreinforced) and Spanish speakers (83.8 percent reinforced; 67.7 percent nonreinforced) with their responses on the English TV segments and Spanish TV segments showed that their highest number of correct responses were on the bilingual segments.

5. One of the most interesting findings was discovered in the comparison of the above the 50th percentile correct responses of all three groups of speakers on all six groups of TV segments (Table 17). The bilingual speakers had the highest correct responses on all of the categories except the Spanish TV segment with the language not reinforced by simultaneous language. The Spanish speakers (75.8 percent) outachieved the other two groups in this area.

6. The English speakers gained the most from having the language reinforced by simultaneous action. There was a significant difference between their responses on reinforced and nonreinforced Spanish (Table 14, page 82), English (Table 15, page 91), and bilingual (Table 16, page 99) segments. The bilingual speakers had a difference between their responses on Spanish and English. The reinforcement made a difference between the responses of the Spanish speakers on the Spanish segments.

7. Composite correct responses on the four animation segments were better at every level than the composite correct responses on the

eight segments with professional actors. Fifty-eight percent of the children had perfect correct responses on the animation segments and 34.42 percent achieved 100 percent correct responses on the professional actor segments. These results indicated that there was better comprehension by the children when animation was used.

8. Although the scores were higher on the adult segment, there was not enough variety in the segments to make the findings meaningful.

Factors that Could Have Influenced Some of the Findings

Age and grade level. In an effort to determine why the scores of the Spanish speakers were lower than the other two groups, a cross-tabulation was made to determine the age and grade level by language groups of the children who were tested on each of the shows (Tables 3 and 4, pages 52 and 53). The results showed that the Spanish speakers were younger than the other two groups. Twenty-eight and one tenth (28.1) percent of the Spanish speakers were four years old or younger, and only 4.9 percent were seven years old or over. Forty-two and nine hundredths (42.09) percent of the Spanish speakers were five years old while 33.1 percent of the English speakers and 36.1 percent of the bilingual speakers fell in the same category. This constituted respective differences of 9.8 percent (English) and 6.8 percent (bilingual) with the Spanish. The six-year-old percentages were nearly equal with 26.9 percent of the Spanish speakers, and 28.5 percent of the bilingual speakers falling in this category. The Spanish speakers were at a disadvantage at the seven-year-old and over category with 4.9 percent

in comparison to 9.8 percent of the bilingual speakers and 14.9 percent of the English speakers.

The age difference was reflected in the grade placement of the children. On Show 2, 78.0 percent of the Spanish speakers fell in kindergarten or lower, while 64.4 percent (bilingual) and 62.2 percent (English) fell in the same category. A difference was still there in Show 3, although it was not as great with 62.9 percent (Spanish), 50.9 percent (bilingual) and 53.7 percent (English) in kindergarten or nursery.

This difference in grade placement between the two shows could have had an effect on two sets of scores. Only four of the segments used came from Show 2 where the Spanish speakers were the youngest. Two of them (El Tren and Circus) were animation and used Spanish language. Two of them (Toy Truck and Talking to Mars) were English and used professional actors. All four of them were reinforced segments. The fact that the Spanish speakers were younger and in earlier grades could have accounted for the difference in their scores on Spanish reinforced and nonreinforced and English reinforced and nonreinforced from those of the English and bilingual speakers. Their 23.2 percent difference between Spanish reinforced and nonreinforced as compared to the 52.8 percent difference for English speakers and 44.7 percent for bilingual speakers could have been the result of their young age and earlier grade placement on the Spanish reinforced segments from Show 2. It could also explain their .2 percent higher score on English nonreinforced segments because the English reinforced segments came from Show 2.

Animation. The use of animation versus professional actors could have been a factor in certain of the results. The wide difference in the responses of all three language groups on the Spanish reinforced and nonreinforced segments could have been due in part to the fact that both of the reinforced segments (Circus and El Tren) were animation and only one (Redondos) of the nonreinforced was animation (Table 19, page 106).

The use of animation could also have helped to account for the greater difference in the correct responses of English speakers on the Spanish segments (a difference of 52.8 percent between the 100 percent correct responses on reinforced and nonreinforced) and between the bilingual segments (a difference of 20.8 percent). Both of the Spanish reinforced segments (El Tren and Circus) were animation while both of the bilingual segments (Haircut and Subibaja) had professional actors.

Another result that could have been effected by animation was the responses of Spanish speakers on the English reinforced and nonreinforced segments. They achieved 0.2 percent higher on the nonreinforced segments (Figure 4, page 71) than they did on the reinforced segments (Figure 13, page 85). One of the nonreinforced segments (Mr. Bezeal) was animation, and both of the reinforced segments (Toy Truck and Talking to Mars) had professional actors.

III. CONCLUSIONS

As a result of the findings of this study, the following conclusions were reached:

1. In bilingual teaching the use of simultaneous action as a reinforcement for the language is very effective.

2. In teaching children who do not understand the language used, it seems necessary to reinforce the language by simultaneous action as much as possible.

3. Language reinforced by simultaneous action is beneficial for all learners. However, it is not as necessary for those who understand the language as it is for those who do not understand the language.

4. Language reinforced by simultaneous action is a necessary production technique for the producers of bilingual educational television programs.

5. A wide difference in the 100 percent responses and the over 50th percentile responses of the English speakers and Spanish speakers on the bilingual TV segments did not allow a conclusive statement to be made concerning the difference in monolingual children's learning from bilingual TV segments and from Spanish TV segments and English TV segments.

6. The bilingual speakers' high achievement on the bilingual segments could be accounted for by the fact that these children were accustomed to using both languages and they were able to comprehend the segments more easily than the English and Spanish speakers who were familiar with only one of the languages.

7. One could conclude that bilingual children can comprehend more easily, or as easily, material that is presented bilingually, than material which is monolingual.

8. The results showed that young children who are bilingual can achieve as well as monolingual children, and thus teachers should encourage children to retain their bilingualism because it will be advantageous to them as they continue their education, especially in high school where second languages are generally taught.

9. Animation's effectiveness as a teaching device calls for its use in educational television in spite of its high cost. This effectiveness was great enough to warrant the concern that has been expressed nationwide about the quality of the animated cartoons presented on television, especially for an extended time on Saturday mornings. The effectiveness of animation was great enough that educational television producers should use it, even though the initial cost is greater than that of professional actors. The residual that must be paid to professional actors every time a program is shown helps to offset the difference in the cost of animation and programs with professional actors.

IV. RECOMMENDATIONS

In the course of the study several areas deserving further consideration became apparent and are identified in this section.

1. This study needs to be replicated making changes designed to overcome the weaknesses of the present study. The segments should be written specifically for the test with the questions to be answered by the study kept in mind. The questionnaire should be prepared in the same manner. An effort should be made to design the study in such a

way that inferential statistical analyses will be possible.

2. Research needs to be conducted in the interchangeable use of Spanish and English within a television segment and within a full-length program. The interchanging of the two languages is a natural occurrence among people who are bilingual. Some things can be expressed better in one language than in the other. Studies need to be carried out that will determine the most effective ways of introducing this practice into bilingual educational programs within a school system.

3. Further and more complete research needs to be carried out in order to determine the effectiveness of adult actors in relationship to child actors. Questions that need to be researched are: Are adult or children actors more effective alone in a segment? Is it better to have adults in leading roles with children in supporting roles or vice versa? Is learning facilitated when characters are carried throughout a series?

4. The question of a difference in the effectiveness of adult actors and child actors needed further research with more segments containing a variety of situations. Bandura's theory[1] that children learn behavior patterns from real-life of fantasy (television) models should be considered as this research is planned and executed.

---

[1]Norman Morris, Television's Child (Boston: Little, Brown and Co., 1971), pp. 111-113.

5. A review of literature revealed the expense involved in producing animation, and this study pointed out the effectiveness of animation in teaching young children. Therefore, one study should be conducted on the cost effectiveness of animation, and another study should research ways to reduce the costs of animation.

BIBLIOGRAPHY

BIBLIOGRAPHY

I. BOOKS

Anderson, Theodore, and Mildred Boyer. Bilingual Schooling in the United States. 2 vols. Austin: Southwest Educational Development Laboratory, 1970.

Cline, Marion, Jr. Improving Language Arts of Bilinguals Through Audio-visual Means. Santa Fe: New Mexico Highlands University, 1962.

Cooper, James G., Richard Holman, Horacio Ulibarri, and Miles V. Zinta. Bilingual Education, Putting Research Into Educational Practice. No. 6. Washington, D. C.: Office of Education, 1972.

DeAvila, Ed. A Summary of the Formative Research on Bilingual Children's Television. Oakland: Bilingual Children's Television, 1973.

Friedrick, Lynette Kohn, and Aletha Huston Stein. Aggressive and Pro-social Television Programs and the Natural Behavior of Preschool Children. Monographs of Society for Research in Child Development, Vol. 38, No. 4. Chicago: Pennsylvania State University, August 1973.

Furu, Takeo. The Function of Television for Children and Adolescents. Tokyo: Sophia University, 1971.

Gropper, George L. Studies in Televised Instruction, The Role of Visuals in Verbal Learning. HEW Grant No. 7-48-0000-120. Pittsburgh: Office of Health, Education, and Welfare, 1965.

Hall, E. T. The Hidden Dimension. Garden City: Doubleday, 1966.

Liebert, Robert M., John M. Neale, and Emily Davidson. The Early Window. New York: Pergamon Press, 1973.

MacLennan, Donald W., and J. Christopher Reid, eds. Abstracts of Research on Instructional Television and Film. Columbia: University of Missouri, Institute for Communication Research, 1964.

Morris, Norman S. Television's Child. Boston: Little, Brown and Company, 1971.

Obiesh, Gabriel and Wesley C. Meierheny, eds. Trends in Programmed Instruction. Washington: National Education Association, 1964.

Olson, David, Ed. National Society for the Study of Education. Media and Symbols: The Forms of Expression, Communication, and Education. Seventy-third Yearbook, Part I. Chicago: University of Chicago Press, 1974.

Rubinstein, Eli A., George A. Comstock, and John P. Murray, eds. Television and Social Behavior, Television and Growing Up: The Impact of Televised Violence. Rockville, Md.: National Institute of Mental Health, 1972.

Rubinstein, Eli A., George A. Comstock, and John P. Murray, eds. Television and Social Behavior, Vol. II, Television and Social Learning. Rockville, Md.: National Institute of Mental Health, 1972.

Rubinstein, Eli A., George A. Comstock, and John P. Murray, eds. Television and Social Behavior, Vol. IV, Television in Day-to-Day Life: Patterns of Use. Rockville, Md.: National Institute of Mental Health, 1972.

Sargent, Leslie W. A Comparison of the Short-Term Effects of Certain Types of Television Program Materials. Angwin, California: Pacific Union College, 1961.

Schwarzwalder, John C., Principal Investigator. An Investigation of the Relative Effectiveness of Certain Specific TV Techniques on Learning. St. Paul: Department of Health, Education, and Welfare, 1960.

Shulman, Milton. The Ravenous Eye, The Impact of the Fifth Factor. London: Cassell, 1973.

Steiner, Stan. La Raza: The Mexican Americans. New York: Harper, 1969.

Turner, Paul, ed. Bilingualism in the Southwest. Tucson: University of Arizona Press, 1973.

II. PERIODICALS

Allen, William H. "Instructional Media Research: Past, Present, and Future," A V Communication Review (Spring 1971), 19: 5-18.

Cardenas, Rene and Lilly Wong Fillmore. "Toward a Multicultural Society," Today's Education (September-October 1973), 83-88.

"Children's Television, Can We Move From Exploration to Education?," Jean Fox, ed., AAUW Journal (April 1974), 37-39, 46.

Cutler, Maryilyn H. "Who'll Pay for Bilingual Education? You, Of Course," The American School Board Journal (June 1974), 8-9.

"Degrees in Bilingual Education," School and Society (October 1971), 332.

Fishman, Joshua and John Lovas. "Bilingual Education in Socialinguistic Perspective," TESOL Quarterly (1970), 4(3): 12.

Jones, Philip. "The Educational TV in Your School May Be Anything But Educational," The American School Board Journal (March 1974), 25-28.

Kobrick, Jeffery. "The Compelling Case for Bilingual Education," Saturday Review (April 29, 1972), 54-58.

Morrisett, Lloyd. "Television Technology and the Culture of Childhood," Educational Research (December 1973), 2(12): 3-4.

"Springle Still Finds Potholes on Sesame Street," Report on Education Research (January 31, 1973), 8-9.

"Television in Schools is Teaching Nonreaders to Read, But At What Price?," American School Board Journal (March 1970), 28-30, 61.

"Two Gut Issues on Bilingual Education Brought Out at Hearing," Education Daily (November 2, 1973), 4-5.

Zotos, Michael and Richard Wylie. "The Spanish Speaking Child," The Title III Quarterly (Summer 1973), 17-19.

III. OTHER SOURCES

Bloom, Benjamin S. Stability and Change in Human Characteristics. New York: John Wiley Publishers, 1964, p. 127.

Committee on Children's Television, Television and Children's Needs. U. S. Educational Resources Information Center, ERIC Document ED 054614, May 1972.

Dale, Edgar and John Belland. A Guide to the Literature on Audiovisual Instruction. U. S. Educational Resources Information Center, ERIC Document ED 062 287, September 1971.

Garcia, Augustine. "A Study of the Relationship Between Teacher Perceptions and Bicultural/Bilingual Affective Interaction in the Classroom." Doctoral Dissertation, The University of New Mexico, 1972. Dissertation Abstracts, Sec. A, Vol. 33, No. 10, April 1973, p. 5599-A.

Hillard, Robert L. "How Are You Going to Keep Them Down on the Farm After They've Seen T. V.?," Alternative Futures in American Education. Appendix 3 to Hearings on H. R. 3606, January 1972.

Leary, Mary Ellen. "Are Children Who Are Tested in an Alien Language Mentally Retarded?," Hearings Before the Select Committee on Equal Educational Opportunity, Part IB, Appendix, May 28, 1970.

McRae, Susan. "Relations Between Teacher Bilingualism in Spanish and English and Attitudes Toward a Bilingual Television Program." Doctoral Dissertation, University of Texas, 1972. U. S. Educational Resources Information Center, ERIC Document ED 066 033, November 1972.

Nedler, Shan Evans. "Curriculum Development for Preschool Spanish Speaking Children of the Southwest: A Study of the Translation of a Development Process Into Classroom Practice." Doctoral Dissertation, University of Texas at Austin, 1972. Dissertation Abstracts, Sec. A, Vol. 34, No. 2, August 1973, p. 560-A.

Polsky, Richard M. "The Children's Television Workshop: 1966-68." Doctoral Dissertation, Columbia University, 1973. Dissertation Abstracts, Sec. A, Vol. 34, No. 5, November 1973, p. 2355-A.

Rogers, John Stanley. "The Effects of a Bilingual-Bicultural Education Program on Academic Success and Self-Esteem." Doctoral Dissertation, United States International University, 1973. Dissertation Abstracts, Vol. 34, No. 4, October 1973, p. 1595-A.

Schramm, Wilbur and Godwin C. Chu. "Learning from Television: What Research Says." Final Report, Contract OE 4-7-0071123-4203, U. S. Office of Education. Stanford: Stanford University Institute for Communication Research, 1967.

Skoczylas, Randolph. "An Evaluation of Some Cognitive and Affective Aspects of a Spanish-English Bilingual Education Program." Doctoral Dissertation, The University of New Mexico, 1972. Dissertation Abstracts, Sec. A, Vol. 33, No. 10, April 1973, p. 5711-A.

Stanford, Monty Carlis. "On Predicting the Effects of a Bilingual Children's Educational Television Program." Doctoral Dissertation, University of Texas, 1973. U. S. Educational Resources Information Center, ERIC ED 082 498, February 1974.

Tharp, Robert N. "Development of Audio-Visual Techniques Used at the Institute of Far Eastern Languages, Yale University." Connecticut Audio-Visual Education Association, Annual Bulletin 19. ERIC Document ED 043 246, 1960.

Tidhar, Hava. Using Television for Teaching a Second Language Through Dramatized Every Day Situations: An Assessment of Effects on Active Speech and On Understanding Dialogues Presented by Other Media. Instructional TV Center, ERIC Document ED 053 578, 1971.

U. S. Congress. Senate. Select Committee on Equal Educational Opportunity. Part 4 Mexican American Education. Hearing, 91st Congress, Second Session, August 21, 1970. Washington: Government Printing Office, 1971.

Velasques, Gilbert J. "Evaluation of a Bilingual Bicultural Education Program." Doctoral Dissertation, United States International University, 1973. Dissertation Abstracts, Sec. A, Vol. 34, No. 6, December 1973, p. 3195-A.

Williams, Frederick, Geraldine Van Wart and Monty Stanford. Carrascolendas: National Evaluation. U. S. Office of Education. ERIC Document ED 078 679, June 1973.

APPENDIX

APPENDIX

QUESTIONNAIRE

I. SHOW 2

Circus

Ensename un circulo.	Show me a circle.

El Tren

Ensename . . . Donde esta . . . el triangulo.	Show me the triangle.
Ensename . . . Donde esta . . . el cuadrado.	Show me the square.
Ensename . . . Donde esta . . . el circulo.	Show me the circle.

Talking to Mars

¿Que esta haciendo? (Senale a Rafael--vestido de azul.)	What's he doing? (Point to Rafael--dressed in blue.)
¿Con quien estaba hablando? (Rafael)	Who was Rafael talking to?

Toy Truck

¿Cual es el problema? o ¿Que pasa aqui?	What's the problem here?
¿Que fue lo que hizo?	What did he build?

II. SHOW 3

Hayride

¿Que el paso al reloj de Don Salvador?	What happened to Don Salvador's watch?
¿Como fue que Pablo lo encontro?	How did Pablo find it?
¿Habias (escuchado, oido) cantar "El Capotin" antes de hoy?	Have you ever heard the "Capotin" song they were singing?

Baja 500

¿Porque fue que el hombre paro su carro?	Why did the man stop the car?
¿Que paso (sucedio) cuando el chofer (senale) le habio al hombre (senale)?	What happened when the driver talked to the man?
¿Que paso (sucedio) cuando Manuel le hablo al hombre?	What happened when Manuel talked to the man?

Subibaja

Por que el subibaja no se movia?	Why wouldn't the seesaw move?
¿Que paso cuando Dona Luz movio a la ninita?	What happened when Dona Luz moved the little girl?
¿Por que este nino se movio para el lado donde estaba la nina?	Why did this kid get on the little girl's side?

Mr. Bezeal

Ensename . . . ¿Cual es . . . Donde esta "Man"? ¿Que dijo?	Show me the "man." What did he say?
Ensename . . . ¿Cual es . . . Donde esta "dog"? ¿Que dijo?	Show me the "dog." What did he say?

Viejo San Juan

¿De que cosa estan cantando?	What are they singing about?

Haircut

¿Que fue lo que Dona Luz hizo?	What did Dona Luz do?
¿Que dijo la ninita?	What did the little girl say?

Redondos

¿Donde estan los redondos?	What are the redondos?
¿Cual no es redondo? ¿Y ahora, es redondo?	Which one is not redondo? Is this a redondo now?

Seesaw

¿Que paso cuando las ninos le dieron la caja a Rafael?	What happened when the boys gave Rafael the box?
¿Por que?	Why?

VITA

Helen Pate Bain was born on May 9, 1924, in Nashville, Tennessee. She attend public schools in both Williamson and Davidson Counties, and graduated from Cohn High School, Nashville, in 1942. She graduated from George Peabody College for Teachers, Nashville, in August 1945.

She was employed as a teacher at Hillsboro High School, Nashville, in September 1945. In January 1946 she was employed by the Nashville City Schools to teach at Cohn High School where she remained as a teacher until her election as Vice President, President-Elect of the National Education Association in 1969. She had previously served two terms on the Executive Committee of the National Education Association from 1965 to 1969.

In June 1946 she was married to D. F. Bain from Ponchatoula, Louisiana. They have two sons, Kenneth and David. She also enrolled in the University of Michigan in the summer of 1946 and received her Master of Arts degree in 1950.

She entered the doctoral program at The University of Tennessee in September 1972 and graduated in December of 1974 with a major in Educational Administration and Supervision.