

DOCUMENT RESUME

ED 072 077

TM 002 316

TITLE Milwaukee Bilingual Education Program, 1971 - 1972. Evaluation Report.

INSTITUTION Milwaukee Public Schools, Wis. Dept. of Educational Research and Program Assessment.

PUB DATE 72

NOTE 185p.

EDRS PRICE MF-\$0.65 HC-\$6.58

DESCRIPTORS Academic Achievement; *Behavioral Objectives; *Bilingual Education; Comparative Analysis; *Curriculum Design; Educational Research; Elementary Grades; English; Evaluation Methods; Item Analysis; Kindergarten; Measurement Instruments; Parent Attitudes; *Program Evaluation; Questionnaires; Secondary Grades; Second Language Learning; Spanish; Student Attitudes; Student Evaluation; Teacher Attitudes; Team Teaching; Technical Reports; Test Results; Tests

IDENTIFIERS *Milwaukee; Wisconsin

ABSTRACT

The Milwaukee Bilingual Education Program has been guided by behavioral objectives related to desired pupil, staff, management, parent and community outcomes. The objectives were developed and revised mainly by curriculum supervisors. Frequent references are made to two publications, "Milwaukee Public Schools Bilingual Elementary Program K-4," and "Performance Objectives for Bilingual Education Offerings at the Secondary Level," which define the totality of the behavioral objectives and contain the test item pools of expected pupil behaviors. Of the several objectives in each subject content area, supervisory and/or teaching staff members selected two to be evaluated for each component in 1971-1972. Some behavioral objectives were analyzed in terms of percent of pupil achievement by language dominance. Tests of significance have been included for comparisons of pre/post scores and comparison of Bilingual Program groups with other groups. The report of pupil outcomes is divided into three sections: kindergarten, primary, and secondary. Each section is subdivided into curriculum areas. Under each curriculum area, there are statements of goals, objectives measured, classroom procedure, evaluation procedure, findings, and conclusion. A summary concludes each section. (Author/CK)

ERIC Clearinghouse on Tests, Measurement
and Evaluation
Educational Testing Service
Princeton, New Jersey 08540



BILINGUAL EDUCATION PROGRAM

EVALUATION REPORT 1971-1972

DIVISION OF PLANNING AND LONG-RANGE DEVELOPMENT
DEPARTMENT OF EDUCATIONAL RESEARCH AND PROGRAM ASSESSMENT

ED 072077

MILWAUKEE PUBLIC SCHOOLS
Milwaukee, Wisconsin

ED 072077

Evaluation Report
Milwaukee Bilingual Education Program
1971 - 1972

Division of Planning and
Long-Range Development

Department of Educational Research
and Program Assessment

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INTRODUCTION

The Milwaukee Bilingual Education Program has been guided by behavioral objectives related to desired pupil, staff, management, parent and community outcomes. The objectives were developed and revised mainly by curriculum supervisors. Classroom experience and a broadened curriculum necessitated major revisions and additions of objectives prior to the funding period reported herein. Because bilingual teaching of the subject areas was without precedent, the setting of criteria for the new objectives was postponed until the next (1972-1973) funding period. Results reported for 1971-1972 comprise, in the main, baseline data to be used as a reference point in defining criteria behaviors. During the 1971-1972 period, the revised curriculum objectives and processes were described in two publications, "Milwaukee Public Schools Bilingual Elementary Program K-4" and "Performance Objectives for Bilingual Education Offerings at the Secondary Level". Frequent references will be made to the two publications, which define the totality of the behavioral objectives and contain the test item pools of expected pupil behaviors. Of the several objectives in each subject content area, supervisory and/or teaching staff members selected two to be evaluated for each component in 1971-1972. Achievement of many K-4 objectives was expected at the end of a three- or four-year primary program. Assessment of these objectives by grade level was undertaken to provide a formative evaluation describing progress toward the goals.

Some behavioral objectives were analyzed in terms of percent of pupil achievement by language dominance. Division of groups into the three language

categories - English-dominant, Spanish-dominant, and bilingual - resulted in such small populations that it would have been meaningless to apply statistical tests of significance to the data. It is suggested that the results be interpreted as possible trends to be confirmed or challenged with replication over time.

Tests of significance have been included for comparisons of pre/post scores and comparison of Bilingual Program groups with other groups. The .01 level of confidence was selected as the criterion for significance. For pre/post, a significant outcome indicates that a difference that great would have occurred by chance only one time in 100. For comparisons with other groups, a significant outcome means that, if the groups represented the same population, a difference this great would occur only once in 100 times. However, these tests are included only as a gross sort of yardstick as their use assumes controls which could not be implemented: random sampling to establish the experimental and control groups; a normal distribution of scores; and uniform treatment. Violations of these assumptions were: pupils were enrolled in the program by parents at the elementary level and by student election at the secondary level; many skewed distributions of scores; and teacher variables in use of methods and materials.

Results at both elementary and secondary levels include only pupils who were both pre and posttested and, therefore, do not reflect achievement of pupils who were late in entering the program or those who left it.

The report of pupil outcomes is divided into three sections: kindergarten, primary, and secondary. Each section is subdivided into curriculum areas. Under each curriculum area, there are statements of goals, objectives measured, classroom procedure, evaluation procedure, findings, and conclusion. A summary concludes each section.

Staff and community goals, objectives, and outcomes are described and summarized in Section Four.

The Appendix contains examples of locally-developed instruments referred to in the text.

In 1971-1972, the program served a total of 380 students. The costs of the special program were funded with a budget of \$270,742 provided by ESEA Titles VII and I.

PUPIL POPULATION

In the following tables and throughout the report, there will appear to be inconsistencies in numbers of pupils. The variation is because of differences in population on the different dates of data collection.

TABLE I
Total Population
Milwaukee Bilingual Program, 1971-1972

School	Grade	Totals	
Vieau	Kindergarten	25	
	Grade 1	33	
	Grade 2	47	
	Grade 3	<u>20</u>	
		125	Total Elementary: 125
South Division	Grade 10	58	
	Grade 11	52	
	Grade 12	<u>26</u>	
		136	
Lincoln	Grade 7	4	
	Grade 8	6	
	Grade 9	7	
	Grade 10	1	
	Grade 11	1	
	Grade 12	<u>2</u>	
		21	Total Secondary: 157
			Total Program: 282*

* About 100 additional Spanish-American students at the secondary level, who were not enrolled in the academic program, were given special tutoring help by the bilingual reading teacher and his staff and/or special help by the bilingual student advisors.

TABLE II

Milwaukee Bilingual Education Program
Ethnic Count, Language Dominance,
and Attrition, 1971-1972

VIEAU	Ethnic Count May, 1972					Language Dominance November, 1971				Attrition September, 1971 - May, 1972								Total Percent of Total Enrollment	
	Anglo	Cuban	Mexican	Puerto Rican	Total	English	Spanish	Bilingual	Total	Other School	Other City	Texas	Mexico	Puerto Rico	January Graduate	Married	Other		Unknown
Kindergarten	0	0	14	13	27	3	11	12	26	1	1	1		1					4
Grade 1	0	0	10	18	28	5	22	5	32	2				3				1	6
Grade 2	3	0	28	12	43	14	20	8	42	4	1			1					6
Grade 3	4	1	10	12	27	6	16	3	25	1									1
<u>Elementary Total:</u>	7	1	62	55	125	28	69	28	125	8	2	1		5				1	17
Number						22	56	22											
Percent	5.9	0.1	50	44															14

(Continued on next page)

TABLE II (Continued)

	Ethnic Count May, 1972				Language Dominance November, 1971				Attrition September, 1971 - May, 1972							Total Enrollment			
	Anglo	Cuban	Mexican	Puerto Rican	English	Spanish	Bilingual	Total	Other School	Other City	Texas	Mexico	Puerto Rico	January Graduate	Married		Other	Unknown	Total
SOUTH DIVISION																			
Number	1	2	70	46	19	71	24	114	13	1	1		5	2	2	2		26	
Percent	.05				17	62	21												
LINCOLN																			
Number	0	0	1	17	0	13	0	13	2			5			1			8	
Percent			5	95		100												44	
<u>Secondary Total:</u>																			
Number		2	71	63	19	84	24		15	1	1	5	5	5	3	2		34	
Percent		.05		46	15	66	19												22
<u>Elementary and Secondary Program Total:</u>																			
Number	8	3	133	118	47	153	52	252	23	3	2	10	5	2	3	3		51	
Percent				45	19	60	21												18



KINDERGARTEN

**English Language Arts
Spanish Language Arts
Mathematics
Science
Social Studies**

The first two years of bilingual kindergarten had conventional half-day sessions. A full-day kindergarten was initiated in 1971-1972. This resulted in greatly enhanced opportunities to understand individual pupils and establish rapport with them, according to the teacher. The teacher rated her bilingualism as the program's greatest advantage. However, she pointed out that communication at the kindergarten level is "mainly through feelings" and indicated that language differences would not interfere with success for non-bilingual kindergarten teachers who could relate to pupils in this way.

Twenty-five pupils were enrolled in bilingual kindergarten during the year. Evaluation of the behavioral objectives refers to the 20 pupils who were in the program all year. Of these, there were three English-dominant, seven Spanish-dominant, and ten bilingual.

ENGLISH LANGUAGE ARTS

GOAL: The pupils will develop and maintain skills that will enable them to understand standard English and to communicate through listening and speaking.

CLASSROOM PROCEDURE

The class was conducted in English on alternate days. Appropriate responses to English by English-dominant pupils also served as models for the acquisition of English language skills.

OBJECTIVE 1

Listening: The pupils will be able to understand English classroom directions and expressions, as defined in "Milwaukee Public Schools Bilingual Elementary Program K-4", page one and two.

Evaluation Procedure

The classroom teacher noted on a checklist when each pupil responded with an appropriate verbal or motor response to his own name, greetings, and classroom directions (e.g., sit down, stand up, follow me).

Findings

The listening skills were in the entering behavioral repertoire of all English-dominant, 82% of bilingual, and 25% of Spanish-dominant pupils. The skills were acquired by 75% of the Spanish-dominant pupils within three months. By the end of kindergarten, the objective had been met by 100% of English-dominant, bilingual, and Spanish-dominant pupils as shown in Figure 1.

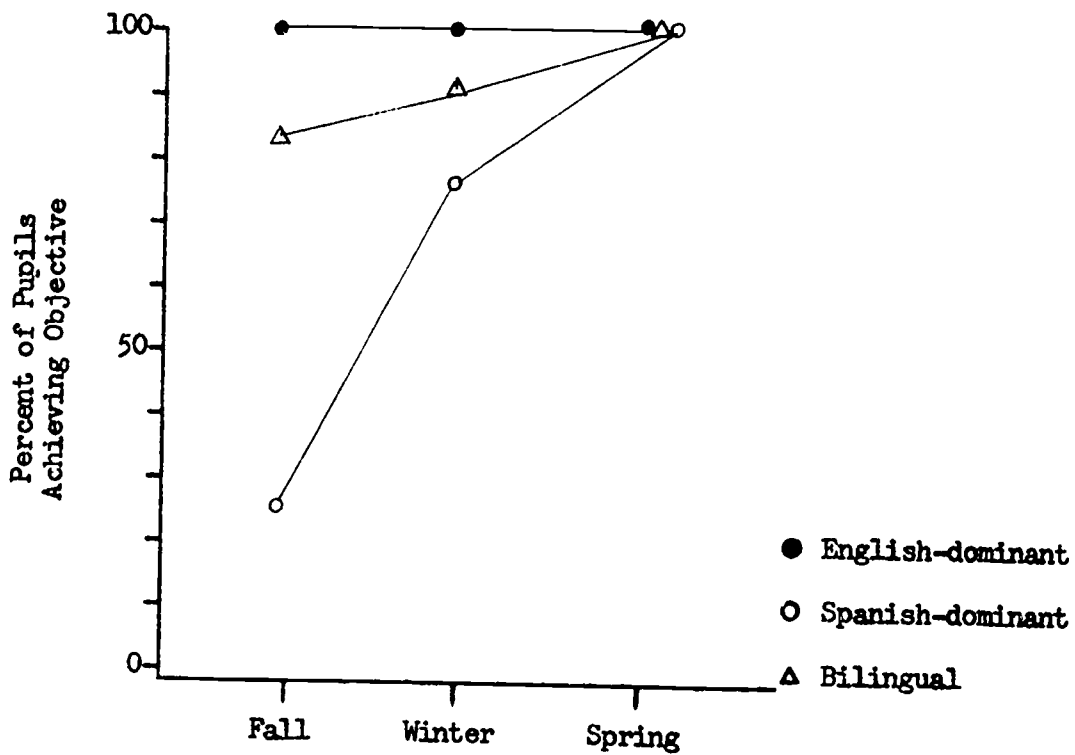


Figure 1. Pupil Acquisition of English Listening Skills, Kindergarten

Conclusion

The objective was inappropriate for English-dominant pupils, who entered with the defined skills. It was a valid expectation for Spanish-dominant and bilingual pupils.

OBJECTIVE 2

Speaking: By the end of kindergarten, the English-speaking pupils will be able to speak English in sentences; Spanish-speaking pupils will be able to use basic English words and expressions, as defined in "Milwaukee Public Schools Bilingual Elementary Program K-4", page two.

Evaluation Procedure

The classroom teacher periodically checked the ability of all pupils to engage in conversation, respond orally to a greeting, identify self and others, name and describe objects, recite a poem, and sing a song. In addition, English-dominant pupils were expected to express spatial and temporal relationships and to repeat a three-to-five word message.

Findings

The speaking skills were in the entering behavioral repertoire of all English-dominant, half of the bilingual pupils, and none of the Spanish-dominant. Bilingual and some Spanish-dominant pupils were able to engage in conversation by the end of the school year. This, along with reciting a poem and describing objects by size, was achieved by 57% of Spanish-dominant pupils as shown in Figure 2. The graph does not reveal the fact that each Spanish-dominant child progressed in at least one of the components.

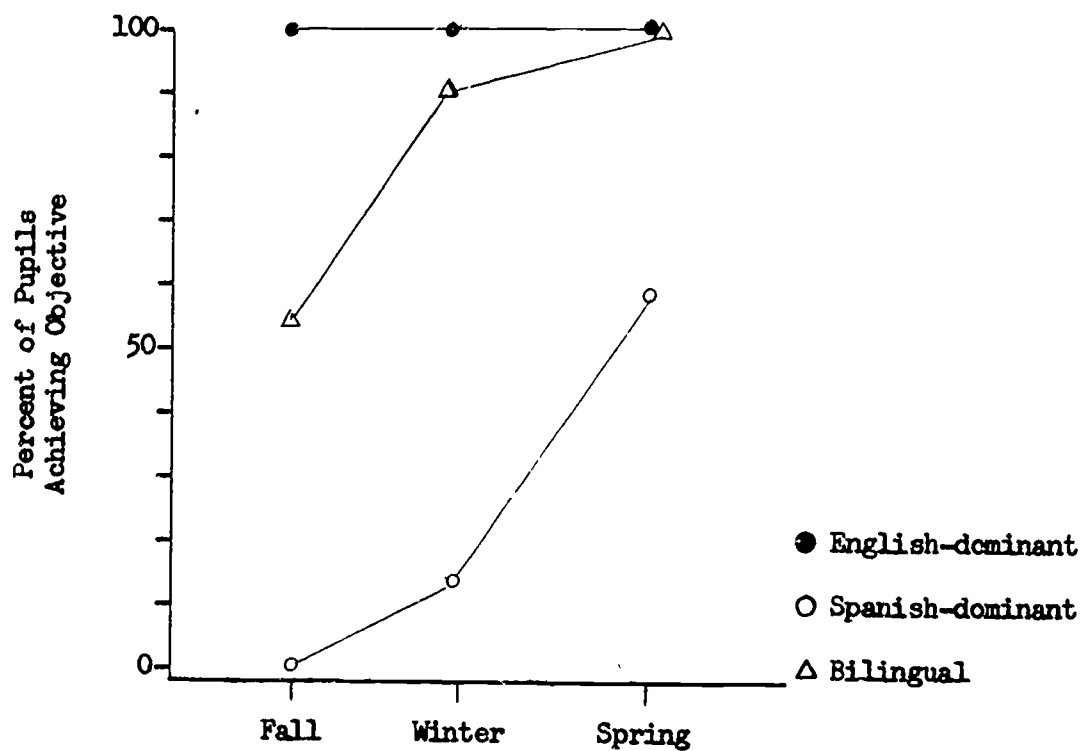


Figure 2. Pupil Acquisition of English Speaking Skills, Kindergarten

Conclusion

The ability to engage in English conversation required the development of a sequence of behaviors which was not completed by the end of the year by Spanish-dominant pupils.

SPANISH LANGUAGE ARTS

GOAL: The pupil will achieve the performance objectives in understanding, speaking, reading, and writing standard Spanish by the time he completes the primary grades.

CLASSROOM PROCEDURE

The class was conducted in Spanish on alternate days. Materials included Spanish stories, songs, and Spanish Language Arts kits furnished for field trial use by the Spanish Curriculum Development Center (SCDC).

OBJECTIVE 1

Understanding: The pupil will acquire the basic listening skills needed to distinguish the sound contrasts of Spanish when spoken at normal speed in regular conversation and to comprehend what is being said, as described in "Milwaukee Public Schools Bilingual Elementary Program K-4", pages 80 to 84.

Evaluation Procedure

Twenty-two objectives with "In-Class Test Items" were identified by curriculum and supervisory staff. Criteria were specified for the end of primary. Data were collected at the kindergarten level as components of the formative evaluation. An oral language test was developed for formative evaluation of Spanish comprehension, phonics, and grammar (Appendix A). Starting in spring, tape recordings were made of pupils' responses to questions about a set of ten stimulus pictures. A Marquette University professor of Spanish listened to the tape cassettes and rated the responses. Results were transferred to the Pupil Achievement Record (Appendix B). Each pupil had an individual cassette on which to record samples of oral Spanish throughout his primary school years. Any appropriate English or Spanish response to a Spanish ques-

tion was accepted as evidence of Spanish comprehension.

Findings

The possible high score (number of correct responses) for comprehension of oral Spanish was 21. As shown in Figure 3, average scores were 12.33 for English-dominant, 13.00 for bilingual, and 15.29 for Spanish-dominant kindergarten pupils.

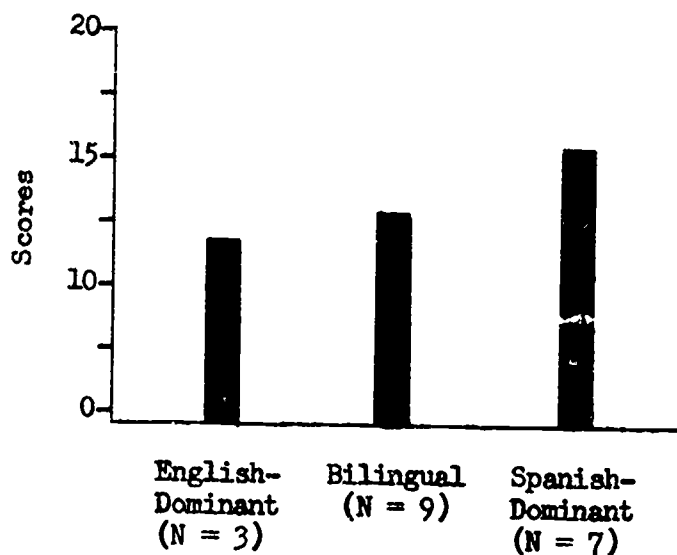


Figure 3. Mean Scores by Language Dominance on Understanding Subtest, Spanish Oral Language Test, Kindergarten

Conclusion

English-dominant pupils acquired skills approaching those of Spanish speakers in comprehension of oral Spanish.

An item analysis of the first 20 trials of the Spanish Oral Language Test was conducted by the University of Wisconsin, Department of School Information Systems. The analysis (Appendix C) indicated high reliability and resulted in a recommendation for further work with the test.

OBJECTIVE 2

Speaking: The pupil will acquire the basic speaking skills needed for correct pronunciation of Spanish sounds (intonation, rhythm, stress) while using standard grammatical forms and word order in everyday situations. Specific responses are on pages 80 to 102, "Milwaukee Public Schools Bilingual Elementary Program K-4".

Evaluation Procedure

The speaking subtest of the Spanish Oral Language Test, referred to under Objective 1, elicited verbal responses to 28 items scored on a three-point scale (3 = like a native, 2 = acceptable, 1 = unacceptable).

Findings

The possible high score was 74. As shown in Figure 4, average scores by language dominance were 19.5 for English-dominant, 26.0 for bilingual, and 34.0 for Spanish-dominant kindergarten pupils.

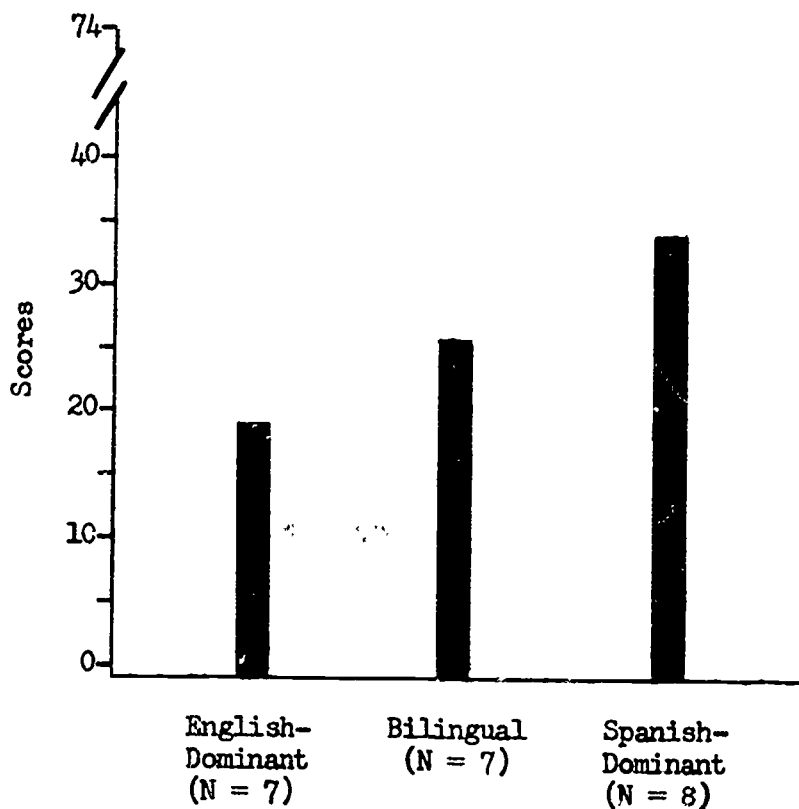


Figure 4. Mean Scores by Language Dominance on Speaking Subtest, Spanish Oral Language Test, Kindergarten

Conclusion

Spanish-speaking skills were rated by language dominance according to expectations. Results furnished baseline data for measurement of performance gains and for establishment of criterion levels.

MATHEMATICS

GOAL: To help pupils develop a mathematical awareness as they are introduced to beginning concepts.

CLASSROOM PROCEDURE

The teacher directed manipulative activities with objects (beads, blocks, etc.) to introduce mathematical concepts. The use of English and Spanish facilitated learning in the dominant language. The Addison-Wesley texts, "Matemática Para La Educación Primaria, Pre-Escolar" and "Elementary School Mathematics, Primer", were used to introduce abstract symbols.

OBJECTIVES

The child will be able to make comparisons; distinguish geometric shapes; discriminate spatial relationships, distinguish similarities and differences; discover and complete patterns; recognize sets; and compare the cardinal numbers 0 - 9 for a set of objects.

Evaluation Procedure

Progress toward achievement of objectives was recorded on a checklist by the classroom teacher in fall, winter, and spring. The fall/winter group included two English-dominant, ten bilingual, and eight Spanish-dominant pupils. By spring, two English-dominant, nine bilingual, and seven Spanish-dominant pupils remained.

Findings

(See Table III)

TABLE III

Kindergartner Pupil Acquisition
of Mathematics Skills

Skill	Language Dominance	Time of Acquisition by Language Dominance					
		Fall(F)	Winter(W)	Spring(S)	△	□	○
		Percent who had skill in:					
		Fall(F)	Winter(W)	Spring(S)	△	□	○
Recognition of Sets (three sets)	English	0	100	100			
	Bilingual	1	90	90			
	Spanish	0	63	85			
Recognition of Shapes	English	100	100	100	100	100	100
	Bilingual	80	100	100	20	100	100
	Spanish	12	87	100	0	87	100
Visual Memory (three skills)	English	100	100	100	50	100	100
	Bilingual	70	100	100	40	70	100
	Spanish	25	87	100	0	12	43
Positional Relations (six skills)	English	100	100	100	0	100	100
	Bilingual	60	100	100	0	90	100
	Spanish	0	87	85	0	50	85
		On - Behind		Over - Under			
		F	W	S	F	W	S

TABLE III (Continued)

Skill	Language Dominance	Time of Acquisition by Language Dominance			Percent who had skill in:		
		Fall(F)	Winter(W)	Spring(S)	Fall(F)	Winter(W)	Spring(S)
Order Objects (smallest to largest and largest to smallest)	English	Smallest to Largest F 0 W 50 S 100	Largest to Smallest F 100 W 100 S 100				
	Bilingual	F 0 W 50 S 100	F 60 W 100 S 100				
	Spanish	F 0 W 25 S 85	F 25 W 100 S 100				
Classify Objects	English	Size F 100 W 100 S 100	Shape F 50 W 100 S 100	Color F 100 W 100 S 100	Texture F 0 W 100 S 100		
	Bilingual	F 60 W 100 S 100	F 20 W 100 S 100	F 60 W 100 S 100	F 0 W 50 S 100		
	Spanish	F 25 W 100 S 100	F 0 W 87 S 100	F 37 W 75 S 85	F 0 W 12 S 85		
Compare Objects (heavy - light, large - small)	English	Heavy - Light F 100 W 100 S 100	Large - Small F 100 W 100 S 100				
	Bilingual	F 60 W 60 S 100	F 60 W 60 S 100				
	Spanish	F 12 W 62 S 85	F 12 W 50 S 71				
Reproduce Patterns by Size, Shape, Color	English	Size F 0 W 0 S 100	Shape F 50 W 50 S 100	Color F 50 W 50 S 100			
	Bilingual	F 0 W 0 S 88	F 20 W 20 S 100	F 20 W 20 S 100			
	Spanish	F 0 W 37 S 71	F 12 W 25 S 85	F 12 W 50 S 100			

TABLE III (Continued)

Skill	Language Dominance	Time of Acquisition by Language Dominance					
		Fall(F)		Winter(W)		Spring(S)	
Compare Size of Pictured Objects: Larger, Taller, Longer	English	Larger - Smaller F 50 S 100	Taller - Tallest F 0 W 0 S 100	Longer - Shorter F 0 W 0 S 100			
	Bilingual	30 30 100	0 0 33	0 0 88			
	Spanish	0 62 85	0 12 57	0 0 37			
Identify Similarities and Differences in Size, Shape, Color, Texture	English	Size F 0 W 0 S 100	Shape F 50 W 50 S 100	Color F 100 W 100 S 100	Texture F 0 W 0 S 100		
	Bilingual	0 0 88	40 40 100	60 60 100	0 0 88		
	Spanish	0 62 100	12 66 100	37 75 100	0 12 71		
Visual Recognition of Sets	English	More - Less F 0 W 0 S 100	Match 1 : 1 F 100 W 100 S 100	Equivalent F 0 W 0 S 100			
	Bilingual	0 0 88	60 60 100	0 0 88			
	Spanish	0 62 85	37 87 85	0 0 57			
Identify Cardinal Number of Sets, 0 - 9	English	F 0 W 0 S 100					
	Bilingual	0 0 100					
	Spanish	0 25 57					
Identify Numerals 0-9	English	0 0 100					
	Bilingual	0 0 100					
	Spanish	0 0 71					

Conclusion

English-dominant pupils entered kindergarten with the ability to recognize shapes, to describe position, to identify objects from memory, to order objects from largest to smallest (but not from smallest to largest), to classify objects by size and color, and compare by weight and size, match 1 : 1, and identify similarities and differences by color. Those skills were possessed by fewer bilingual and very few (25% or less) of Spanish-dominant pupils on entering. There was quick acquisition with instruction. Not in the pupils' entering repertoire were abilities to compare pictured objects by dimension, to make size and texture comparisons, to recognize quantities or identify cardinal numbers of sets. At the end of kindergarten, all but a few pupils achieved the objectives.

Because arithmetic was taught in both Spanish and English, language should not have been a factor. The bilingual staff identified cultural child-rearing differences (such as the amount of visual stimuli and time available to interact with children) as the probable reasons for the initial discrepancy in skill levels of Spanish-dominant pupils.

SCIENCE

GOAL: To develop in pupils an awareness of the properties of the world around them.

CLASSROOM PROCEDURE

Science was taught bilingually. The class recorded and measured the growth of plants. Pupils measured their heights. Fish, animals, and growing plants were observed.

OBJECTIVE

The pupil will use the process skills of observing, describing, experimenting, classifying, identifying, measuring, and recording to discover the properties of objects, plants, and animals, as indicated in "Milwaukee Public Schools Bilingual Elementary Program K-4", page five.

Evaluation Procedure

The skills of observing, describing, classifying, and identifying were tested individually. Pupils were asked to point out similarities, differences, and seasonal changes in a set of summer and winter woodland scenes.

Findings

Sixty-eight percent correctly identified at least four similarities in pictured size, color, texture, position, or movement; 63% correctly identified at least four differences by property; and 82% correctly identified seasonal differences. Those who encountered difficulties appeared to lack experience with concepts of perspective and/or positional relationships.

Conclusion

More than half of the group demonstrated abilities to identify, classify, and describe their observations. The percentages of correct test performance established a baseline for setting criterion levels.

SOCIAL STUDIES

GOAL: To help pupils learn to live successfully in a school environment and to introduce them to the culture of the United States and the Latin heritage.

CLASSROOM PROCEDURE

Pupils were taught personal independence and concern for others as in any kindergarten. Bilingual culture was stressed by observance of both United States and Latin-American holidays.

OBJECTIVES 1 AND 2

The child will be able to:

- share with classmates
- take care of himself independently, as defined in "Milwaukee Public Schools Bilingual Elementary Program K-4", page seven

Evaluation Procedure

The classroom teacher noted the acquisition of cooperative behavior (sharing toys, playing games, self-help with wraps and materials, and the ability to follow instructions).

Findings

All except three Spanish-dominant pupils entered with the criterion cooperative behavior and self-help skills. All pupils had met the objectives by mid-year.

OBJECTIVES 3 AND 4

The child will be able to:

- demonstrate knowledge of Spanish-American and United States customs and geography
- identify land and water masses on a globe or map, as specified in "Milwaukee Public Schools Bilingual Elementary Program K-4", page eight

Evaluation Procedure

A bilingual tester assessed pupils individually on ability to identify a picture of President Nixon; the flags of the United States, Puerto Rico, and Mexico; pictures associated with Halloween, Thanksgiving, Mexican Independence Day, and El Dia de La Raza; and land and water masses on a globe.

Findings

Of the 22 bilingual kindergarten pupils, 55% correctly identified the President; 36% identified all three flags, 5% identified two flags, 32% identified one flag, 27% did not identify any flag; 50% identified all holidays (Halloween, Thanksgiving, Mexican Independence Day, El Dia de La Raza); and 27% identified land and water masses on a globe.

Conclusion

Social studies objectives relating to pupil adaptation to the classroom appeared to have been learned in the course of daily experience. Objectives related to culture and geography fell between 25% and 75% of attainment, perhaps reflecting intermittent rather than continual emphasis.

PRIMARY

English Language Arts
Spanish Language Arts
Mathematics
Science
Social Studies

1969-1970

The program was initiated with one first grade class at Vieau and a first and second grade at Bruce-Guadalupe Community School, all taught bilingually in self-contained classrooms.

1970-1971

The addition of a bilingual second grade at Vieau and a third grade at Bruce-Guadalupe enabled pupils to continue in the program. Bruce-Guadalupe continued the self-contained classroom. Vieau introduced team teaching in reading and mathematics with the provision of a bilingual supervising teacher who met with small groups from the regular classrooms during the day. At the end of the year, Bruce-Guadalupe elected to become independent of the Milwaukee Public Schools and left the program.

1971-1972

The bilingual first grade class at Vieau was provided with two teachers who worked together in the classroom. In spring, kindergarten and first grade teamed by introducing first grade work for part of the day to 11 kindergarteners deemed "ready". In return, selected first graders (still at the "readiness" level) were sent for a period to the free play atmosphere of the kindergarten.

There were two second grades and one third grade whose teachers teamed with a bilingual resource teacher who served as coordinator of the elementary program. During the first semester, second and third graders moved among the teaching team for instruction by ability groups. The teaching staff found there was not adequate planning time for this arrangement and considerable time was lost in pupil movement. Therefore, the self-contained classroom was revived for reading and mathematics in the mornings during the second semester. Pupils were placed

according to English/Spanish reading ability. Departmentalized teaching was continued in the afternoon for oral language (grouping by language dominance), science, and social studies. Staff members taught according to their subject area strengths.

The Bilingual Program and comparison group primary staff, by grade level, numbered:

	Bilingual Program		Comparison Group	
	Teachers	Aides	Teachers	Aides
Kindergarten	1	1	1	$\frac{1}{4}$
Grade 1	2	1	1	$\frac{1}{2}$
Grade 2	2	2	1	$\frac{1}{2}$
Grade 3	1	1	1	$\frac{1}{4}$
Resource Teacher	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
	7	5	4	$1\frac{1}{2}$

Daily enrollment was approximately 102 in the Bilingual Program and 137 in the comparison group. One similar class at each grade level in the same school comprised the comparison groups. The class size and teacher/pupil ratio of comparison groups are typical of regular classes in the Milwaukee Public Schools system. Program outcomes should be interpreted in the context of the smaller class sizes and larger teaching staff of the Bilingual Program.

ENGLISH LANGUAGE ARTS

GOALS: The pupil will develop and maintain skills that will enable him to understand standard English and communicate with English-speaking people through listening, speaking, reading, and writing.

PERFORMANCE OBJECTIVES

After completing primary school in either a two-, three-, or four-year program, both the Spanish- and English-dominant pupils will meet the objectives listed below.

OBJECTIVE 1

Listening: The pupil will distinguish the sound contrasts of English when spoken at normal speed in regular conversation and comprehend what is said. He will demonstrate the skills listed in "Milwaukee Public Schools Bilingual Elementary Program K-4", page ten.

Classroom Procedure

English was used as the language of the classroom at least 50% of the time.

In grades one and two, the "Instant Reader" was used to elicit behavioral responses to oral English.

Evaluation Procedure

Scores on the "Listening" subtest of the Cooperative Primary Test were used as a measure of the criterion comprehension, recall, and interpretation skills. The test was administered by classroom teachers in May, 1972. It required pupils to respond to stimulus sentences read by the teacher.

Mean scores of Bilingual Program pupils were compared with the regular classes taught in English only, as shown in Table IV. In effect, the

performance of the comparison group was considered the grade-level "norm" for this objective.

Findings

TABLE IV
Mean Scores of
Bilingual Program and Comparison Pupils on
Cooperative Primary Listening Subtest, May, 1972

Grade Level	Form	Bilingual		Comparison		Difference	t
		Number of Pupils	Mean Score	Number of Pupils	Mean Score		
1	12A	16	27.56	32	35.38	7.82	3.14*
2	12A	27	29.82	33	37.73	7.91	5.72*
3	23A	13	36.85	24	29.83	7.02	3.54*

* Significant at the .01 level

First and second grade pupils scored significantly lower than the comparison group on comprehension of oral English. The objective related to end of primary and was attained by third grade program pupils, who scored significantly higher than the comparison group.

OBJECTIVE 2

Speaking: The pupil will use the basic speaking skills needed for correct pronunciation of English sounds (intonation, rhythm, and stress) while using standard grammatical forms and word order in everyday situations, as defined in "Milwaukee Public Schools Bilingual Elementary Program K-4", pages 10 and 11.

Classroom Procedure

In grades one and two, the Peabody Kit and Instant Reader (accompanied by a tape recording) were used in teaching oral English.

The third grade curriculum (with the exception of Spanish Language Arts) was presented in English only. The teacher found it necessary to use one language in order to establish and consolidate basic skills still lacking in the group.

Evaluation Procedure

Oral English was evaluated by a bilingual tester in Spring, 1972, using in-class test items. Pupils were observed in the classroom and tested in groups of five to seven in a game-like situation. In addition to dialogue with the pupil, the tester used a set of picture cards of familiar home and outdoor scenes to elicit oral responses which were rated on English pronunciation, word order, and grammar.

TABLE V
 Primary Pupil Achievement of
 English-Speaking Skills

	Number of Pupils	Percent Who Achieved Objective
Grade 1	24	83
Grade 2	33	79
Grade 3	14	100

Conclusion

By the end of primary (third grade), all pupils demonstrated the ability to use oral English. Spanish-dominant pupils were able to pronounce English consonant and vowel sounds correctly.

OBJECTIVE 3

Reading: The pupil will satisfactorily complete the English basic reader on Reading Level 8 or above. When given a choice of material at least one level below the last successfully completed basic reader, the pupil will read independently, as described in "Milwaukee Public Schools Bilingual Elementary Program K-4", pages 11 and 13.

Classroom Procedure

According to guidelines developed by teachers in December, 1970, pupils were to learn to read in their dominant language. Reading in Spanish for English-dominant pupils was to be introduced after the completion of Level 5 or higher in English. Reading in English for Spanish-dominant pupils was to be delayed until the pupil was functioning comfortably in English. Reading in the second language was to be delayed until basic understanding and speaking skills were learned. The team of the two first grade teachers chose not to adhere to the guidelines and introduced reading in both English and Spanish to all pupils during the first semester. During the second semester, they adhered to guidelines. The Ginn 100 and Ginn 360 were the basic readers.

Evaluation Procedure

Pupils were to be tested by the teacher with Ginn 360 Tests for Levels 1 - 10 on completion of each level after Level 3 to determine readiness for the next developmental level. Independent reading was to be assessed by the teacher. Pupil progress was noted on the Milwaukee Public Schools' reading record ("Milwaukee Public Schools Bilingual Elementary Program K-4", pages 14 to 19). At the end of the year, teachers reported the number of pupils at each English reading level.

Findings

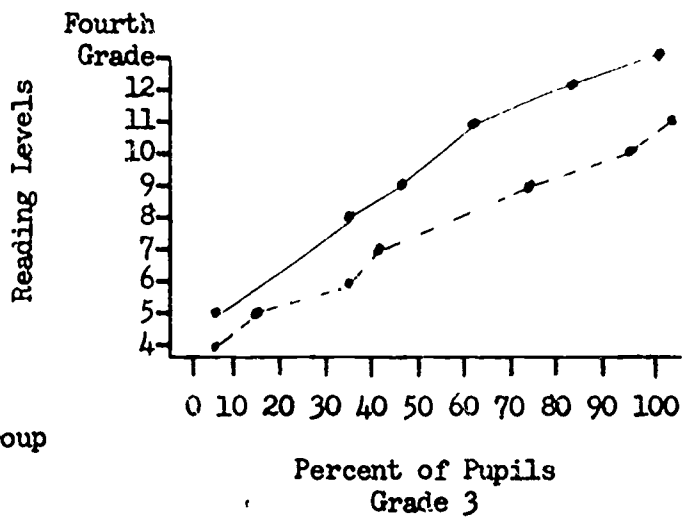
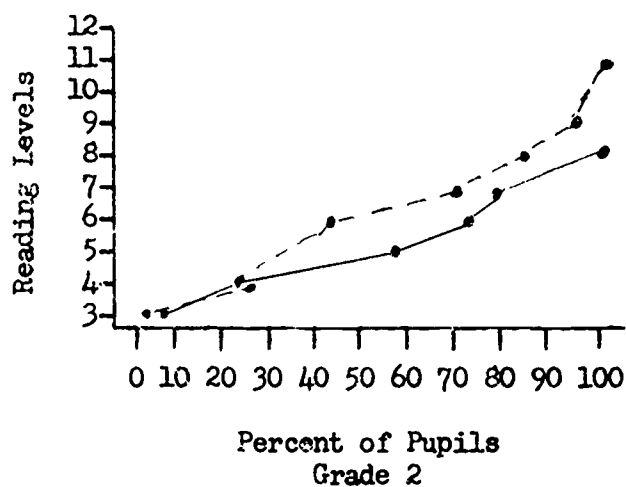
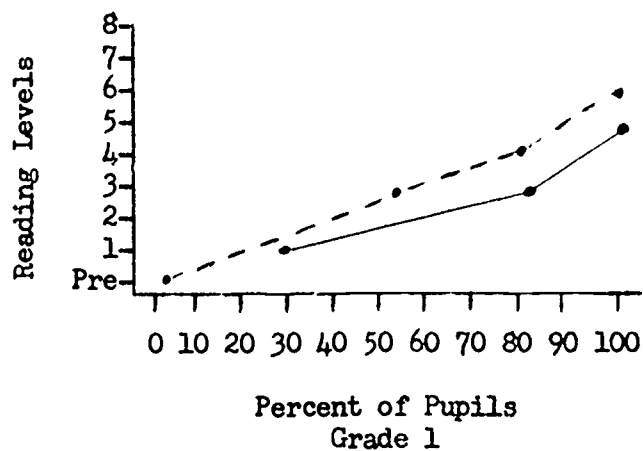
Table VI shows the numbers of pupils at each English reading level. Progress is shown graphically in Figure 4 illustrating that the program group had a higher proportion of pupils at or above Level 8 in English reading at the end of third grade.

A "reading level" is a list of basic readers and supplementary books for independent reading. The Milwaukee Public Schools Primary Reading Record includes Levels 3 through 12.

TABLE VI

English Reading Levels of Bilingual Program
and Comparison Pupils, May, 1972

Grade Level	Total Number of Pupils	Percent of Pupils at Each Reading Level													
		Pre	1	2	3	4	5	6	7	8	9	10	11	12	4th grade
1 X	23		30		52		18								
1 C	35	3			29	51		17							
2 X	34 (two classes)				9	15	35	12	6	23					
2 C	34				3	23		15	29	15	12		3		
3 X	15						7		27	13		13	20	20	
3 C	28						7	7	21	5	34	21	5		



— Bilingual Program Group
 - - - Comparison Group

Figure 5. Cumulative Curves of Percent of Pupils at Respective English Reading Levels, Bilingual Program and Comparison Groups, May, 1972

Conclusion

Grade One:

The 83% of Bilingual Program first graders who ended the year at or below Level 3 (compared with 31% of the comparison group) may reflect some initial confusion from the simultaneous introduction to reading skills in two languages.

Grade Two:

The two second grades had a comparable range of English reading skills. The criterion (Level 8 or above) was achieved by 24% of program pupils and 29% of the comparison group.

Grade Three:

At the end of primary, 93% of Bilingual Program pupils and 64% of comparison pupils had reached the criterion reading level. The advanced progress of the Bilingual Program group may reflect an advantage in the initial teaching of reading skills in the dominant language for Spanish-speaking pupils. Some effect could have been due to the Bilingual Program's smaller class size and use of fewer books per level and/or teacher variables in the judgment of reading level achievement.

OBJECTIVE 4

Writing: When given assistance with spelling, the pupil will be able to write short, creative, or functional compositions using standard English punctuation and capitalization, as specified in "Milwaukee Public Schools Bilingual Elementary Program K-4", page 11.

Classroom Procedure

Manuscript was introduced in the first grade. At the second grade level, pupils wrote class compositions and individual stories. Writing sentences was stressed in third grade.

Evaluation Procedure

Achievement of in-class test items for writing objectives was assessed in Spring, 1972, at the third grade level by a check of pupil folders.

Findings

All 15 pupils wrote legible English manuscript. Standard English punctuation was used by 80%. Correct capitalization was used by 50%. These outcomes were not related to language dominance.

Conclusion

Pupils are ready to learn cursive writing.

SPANISH LANGUAGE ARTS

GOAL: The pupil will achieve the performance objectives listed below in understanding, speaking, reading, and writing standard Spanish by the time he completes the primary grades.

OBJECTIVE 1

Understanding: The pupil will acquire the basic listening skills needed to distinguish the sound contrasts of Spanish when spoken at normal speed in regular conversation and to comprehend what is being said, as described in "Milwaukee Public Schools Bilingual Elementary Program K-4", pages 80 to 84.

Classroom Procedure

Materials used included Kit 1, Language Arts Strand, Spanish Curricula Development Center. Grade one engaged in charting activities.

Evaluation Procedure

Comprehension of oral Spanish was evaluated in two ways:

- 1) Understanding was assessed in the Test of Comprehension and Use of Oral Spanish previously referred to in the kindergarten section (Appendix A) in which pupils were rated on their tape-recorded English or Spanish responses to Spanish statements about a series of pictures. Individual cassettes were used to record progress. The test was developed locally and based on in-class test items developed by the curricula and teaching staffs.
- 2) Comprehension of basic Spanish used by the teacher was evaluated by a bilingual tester. Pupils were tested in small groups using a "Simon Says" game situation. All primary Bilingual Program pupils were tested on Spanish Language Arts Objectives 1 through 3 requiring behavioral evidence of comprehension of everyday expressions, classroom directions, and classroom objects

and locations ("Milwaukee Public Schools Bilingual Elementary Program K-4", pages 81 to 84). Pupils at the end of third grade were assessed on all 19 objectives pertaining to comprehension of oral Spanish.

Findings

Results of the bilingual tester evaluation of comprehension of basic oral Spanish is shown in Table VII.

TABLE VII
Comprehension of Basic Spanish
Everyday Classroom Expressions and Directions
Grades One to Three

Grade Level	Number of Pupils	Percent Who Comprehended Greetings, Directions, Object Locations
1	21	87
2	25	89
3	18	94

The following proportion of third graders demonstrated understanding of additional Spanish expressions referring to:

<u>Category</u>	<u>Percent Who Understood</u>
Calendar	22
Clock Time	17
School Building	67
School Personnel	50
Science Expressions	72
Social Studies Expressions	44

The average score of 13 third grade pupils on the comprehension subtest of the tape-recorded test was 15.2 correct of a possible 21.

Conclusion

Daily exposure to the teacher's use of Spanish as the language of the classroom resulted in comprehension of basic expressions by the end of first grade. Many pupils did not understand other categories, especially time, by the end of third grade unless a specific effort had been made to teach them.

OBJECTIVE 2

Speaking: The pupil will acquire the basic speaking skills needed for correct pronunciation of Spanish sounds (intonation, rhythm, stress) while using standard grammatical forms and word order in everyday situations, as specified in "Milwaukee Public Schools Bilingual Elementary Program K-4", pages 80 to 104.

Classroom Procedure

Spanish was spoken daily. Except at the third grade level, where English was emphasized, curriculum components were presented in both Spanish and English, and pupils were expected to become familiarized with subject matter vocabulary in both languages.

Evaluation Procedure

The bilingual tester conversed with third graders to ascertain progress by the end of primary. Pupils were checked in small groups of two or three on specified test items. Ratings of tape-recorded responses to the Test of Comprehension and Use of Oral Spanish (Appendix A) furnished a second measure of speaking skills.

Findings

Seventeen pupils were rated by the bilingual tester. All of them successfully responded to simple questions regarding clothing, family, and animals. All imitated correct pronunciation. All were able to phrase a question with the correct word order. None of the 17 knew Spanish rhymes or songs, or the Spanish names for Latin-American or United States holidays. Three of the five English-dominant and two Spanish-dominant were unable orally to describe an experience, change a statement into a question, describe an object with a given cue adjective, or change positive statements into negative statements.

Thirteen third graders averaged 32.1 of a possible 56 points on the tape-recorded test. The standard deviation, 12.3, reflected a range from 14 for an English-dominant pupil to 56 by a Spanish-dominant pupil.

Conclusion

By the end of primary, Bilingual Program pupils had a usable Spanish vocabulary. About one-third of the class would require further experience in order to speak Spanish conversationally.

OBJECTIVE 3

Reading: The pupil will achieve the reading skills necessary to read Spanish Level 6 material.

Classroom Procedure

A variety of Spanish readers were used as they became available. In Spring, 1972, the teaching staff selected the most appropriate for ten reading levels (Appendix D).

The two first grade teachers presented both Spanish and English reading to all pupils for the first semester. As noted under English Language Arts, they found the method unsuccessful and returned to the guideline that pupils should be introduced to reading in their first language. Nine pupils were dropped from Spanish reading groups for the remainder of the year.

Second and third graders were taught in ungraded "team-taught" groups the first semester and then in self-contained classrooms based on reading levels.

Evaluation Procedure

Progress toward the objective was assessed by teacher reports of reading levels achieved by the end of the year.

Reading skills were assessed by the Guidance Testing Associates' Tests of Reading Spanish.

Findings

Year-end teacher reports of pupils at each reading level are shown in Table VIII and graphically in Figure 6.

TABLE VIII
 Spanish Reading Levels of
 Bilingual Program Pupils, May, 1972

Grade Level	Total Number of Pupils	Number Reading Spanish	Percent of Pupils at Each Reading Level											
			Pre	2	3	4	5	6	7	8	9	10		
1	23	15		47	33	13	7							
2	34	34			3	3		32	41	15				6
3	15-21	16					6	38	19	19	18			

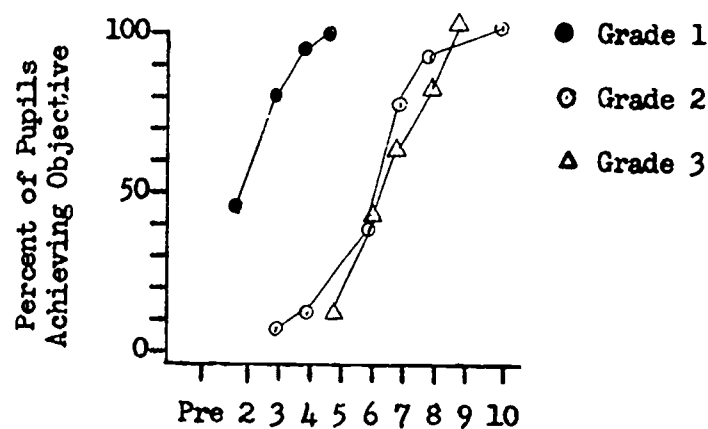


Figure 6. Cumulative Curves of Percents of Pupils at Respective Spanish Reading Levels, May, 1972

Table VIII and Figure 6 indicate that 94% of both second and third graders reached or exceeded the criterion, Level 6.

Spanish reading skills were assessed with Guidance Testing Associates' Tests of Reading Spanish, Forms L-1-CEs (80 items) and L-2-CEs (110 items). The score is the number of correct responses to multiple-choice items.

Scores on the Spanish reading test are shown in Tables IX and X.

TABLE IX
Mean Scores
Guidance Testing Associates' Tests of Reading Spanish
May, 1972

Grade Level	Number of Pupils			Total	
		Vocabulary	Comprehension		
1	24	7.88	5.70	14.00	
		Level	Speed	Vocabulary	Total
2	32	10.90	4.63	12.59	28.00
3	15	14.87	4.13	13.67	32.67

The Guidance Testing Associates' Spanish and English reading tests were designed to be equivalent. A comparison of group mean total scores in the two languages is shown in Table X.

TABLE X
Mean Total Scores of Bilingual Groups
on Equivalent English/Spanish Tests of Reading
May, 1972

Group	Number of Pupils	English	Number of Pupils	Spanish
Grade 1	16	15.94	24	14.00
Grade 2	33	26.79	32	28.00
Grade 3	9	69.78	15	32.67

Total scores reflected the learning of initial reading skills in the dominant language at first and second grade levels. The emphasis shifted to English reading at the third grade level.

Conclusion

The criterion reading levels were attained. English reading skills surpassed Spanish reading skills by the end of third grade. This finding matches Spanish parental desires for their childrens' abilities to function successfully within the dominant culture. Program goals aim for equivalent English and Spanish language skills by the end of sixth grade. The acquisition of Spanish reading skills is slower than English because, as in the study of other foreign languages, there is little, if any, exposure to written Spanish outside the classroom.

OBJECTIVE 4

Writing: The pupil will be able to express himself in writing through a short account of experiences or answers to questions using standard Spanish and punctuation, as specified in "Milwaukee Public Schools Bilingual Elementary Program K-4", pages 99 and 100.

Classroom Procedure

Starting at first grade, manuscript was used to write Spanish.

Evaluation Procedure

Written Spanish was evaluated at the end of primary. The bilingual tester reviewed classwork written in Spanish during the year.

Findings

All pupils had used criterion word order and language structures, pluralization, punctuation, and possessives.

Conclusion

Bilingual Program pupils were able to write in Spanish. Achievement of the objective was independent of language dominance.

MATHEMATICS

OBJECTIVES

Mathematics, Level 1

At the completion of the Level 1 mathematics program, the pupil will demonstrate his mastery of:

- addition and subtraction facts through sums of 10.
- place value through 99.
- rational counting through 99.
- reading time on the hour.

Mathematics, Level 2

At the completion of the Level 2 mathematics program, the pupil will demonstrate mastery of the following skills:

- addition and subtraction facts through 18
- place value through 999
- rational counting through 999
- adding and subtraction with two-, three-, and four-digit numbers without regrouping
- telling time to the hour and half-hour

Mathematics, Level 3

The pupil will demonstrate mastery of the following skills:

- read, write, and order numerals through 999,999
- solve addition and subtraction equations for sums through 18
- solve addition and subtraction examples with two-digit numerals (with and without regrouping)
- solve division equations using repeated subtraction, multiplication facts, sets, and the number line
- solve multiplication and division equations through products of 81
- use arbitrary, English, and metric units to measure length and area

- measure length to the nearest half inch
- identify odd and even numbers
- solve multiplication examples with two- and three-digit factors (with and without regrouping)
- solve division examples by subtracting
- identify equivalent fractions using visual aids
- apply mathematics operations in solving word problems

Classroom Procedure

The mathematics program was individualized and ungraded. The Addison-Wesley "Elementary School Mathematics" English and Spanish editions were used. Both languages were used in Levels 1 and 2. At Level 3, math was taught in English.

Evaluation Procedure

"Addison-Wesley Unit and Review Tests", at levels synchronized with the texts, provided formative feedback to teachers. The tests were translated into Spanish with the publisher's permission.

Formative Evaluation

A formative assessment was made by the evaluator at mid-semester (January, 1972). Teachers indicated the book and unit which had been covered by each pupil. Each was tested in his dominant language on the last unit completed. Pupils were tested in nine units at Level I, six at Level II, and one at Level III.

Findings

The elementary supervising teacher had estimated 70% to 80% correct response to the unit tests, as the tests had been covered previously. Actually, many items were missed by over 50% of the pupils, as shown in

Table XI. Those concepts which were the source of most errors were identified by the elementary supervising teacher (Appendix E). At a special workshop, she reviewed the problem areas and suggested strategies for eliciting concept comprehension.

TABLE XI
Results of Midyear Mathematics Tests
January, 1972

Addison-Wesley Book Level	Unit Test Number	Number of Pupils	Number of Questions Missed by 50% or More
	10 items each		
I	4	4	3
	5	6	2
	6	16	3
	7	4	3
	10 items each		
II	6	5	2
	7	6	2
	20 items		
III	2	14	4

Summative Evaluation

The elementary supervising teacher selected items from the "Unit and Review Tests" which related to the mastery objectives at levels one and

two. Level I had 34 items and Level II had 35 items. The published final review test for Level 3 (20 items) was judged an adequate review of Level 3 objectives. Classroom teachers indicated each pupil's progress. If a pupil was less than halfway through the text, he was given the test for the previous level.

Findings

The elementary supervising teacher estimated that pupils would have mastered at least 75% of the objectives at each level. The percents of pupils who did so are shown in Table XII.

TABLE XII

Percent of Primary Pupils
Who Achieved Mathematics Objectives

Addison-Wesley Math Levels	Grade One		Grade Two		Grade Three	
	Number of Pupils	Percent of Pupils Correct on at Least 75% of Test	Number of Pupils	Percent Correct on 75% of Test	Number of Pupils	Percent Correct on 75% of Test
I	23	17	13	23	1	100
II			18	22	18	89

The Level III test was given to ten third graders who had completed Chapter III, Book III. Scores ranged from 25% to 55% correct.

Conclusion

According to the elementary supervising teacher, the results indicate that pupils were "generally working at a low level in math".

SOCIAL STUDIES

GOAL: The pupil will acquire knowledge of the basic needs of families and the role of school in his life.

PERFORMANCE OBJECTIVE

The pupil will dictate and/or write charts and stories, participate in discussions, make booklets, and engage in fine art activities that reflect his progress toward the goal, as listed in "Milwaukee Public Schools Bilingual Elementary Program K-4", pages 47 to 57.

Classroom Procedure

Social studies instruction was given in the classroom by grade level (e.g., Level 1 at grade one). The course was integrated with language arts.

Evaluation Procedure

The bilingual tester conducted an informal assessment in May, 1972, by reviewing work compiled in pupils' booklets. Booklets were checked for evidence of the following studies:

Level 1

- Basic family needs
- Role of school in the pupil's life

Level 2

- Family living: food, clothing, shelter

Level 3

- Milwaukee: history, geography, ethnic groups, government, economics

Findings

There was evidence of criterion social studies work as follows:

- Eighty-seven percent of first graders completed drawings and descriptions of members of their families and their activities

- Eighty-two percent of second graders had booklets including weather, seasons, clothing materials, food sources, household utensils, houses, and safety
- Eighty-eight percent of third graders had books with reports on school occupation; reports on field trips to the museum, art center, airport, harbor, and zoo; group work on spring elections

Conclusion

Objectives of the social studies program were achieved.

SCIENCE

GOAL: The pupil will . . .

- acquire a basic knowledge of the properties of objects, the process of the interaction among objects, and the growth and development of organisms in relation to their environment.
- acquire skills in the processes of science: observing, describing, comparing, classifying, measuring, recording, and interpreting evidence and experimenting.
- develop a disciplined curiosity.

PERFORMANCE OBJECTIVES

At the completion of the Material Objects Program, the pupil will demonstrate the ability to:

- 1) describe and classify objects by their properties.
- 2) compare properties of objects to understand serial ordering.
- 3) describe changes that may be brought about.
- 4) use observable evidence to support his conclusions.

Classroom Procedure

Science lessons were based on the Material Objects Unit from the Physical Science Section of the Science Curriculum Improvement Study (SCIS) Program, Rand McNally and Company. The program emphasizes manipulation of materials by pupils and was taught in English and Spanish.

Evaluation Procedure

The elementary supervising teacher devised a performance test (Appendix F) to evaluate the ability to apply discriminations learned in the SCIS Program. By March, 1972, second and third grade pupils had completed the program. At that time, pupils were tested on a 1 : 1 basis in groups of ten

or less by a bilingual tester and the elementary supervising teacher. Pupils were rated on ability to demonstrate achievement of the objectives.

Findings

The score was the number of correct responses to 13 tasks in four categories. Table XIII shows mean scores by class groups. The two second grade classes are designated "a" and "b".

TABLE XIII

Mean Scores of Bilingual Classes on a Performance Test
for the SCIS Material Objects Science Program

Group	Number of Pupils	\bar{x}	SD
2a	15	7.47	2.33
2b	20	6.25	2.14
3	14	8.71	1.44

The two second grade group scores include pupils who entered after the Material Objects Program was completed. Eliminating the two pupils from Group 2a would change the number to 13 and the mean score to 7.85, an increase of 0.38. Eliminating the three pupils from Group 2b would change the number to 17 and the mean to 6.23, a decrease of 0.02. In this case, exposure to the program did not appear to affect test performance.

Table XIV shows the proportion of pupils who responded correctly to each component of the four activities.

TABLE XIV

Proportion of Correct Responses
to Science Test Items

Group	Number of Pupils	I Describe and Classify Objects by Properties		II Arrange in Serial Order		III Describe and Classify by Material		IV Match Like, Match in Different Forms, State Evidence					
		Name Property	Classify by: Color Size Shape Other	Color	Size	Shape	Other	Identify Property 1	Identify Property 2	Sort by Materials	Solves Problems	Solves with Hint	Solves with Suggestion
2a	15	73	80 33 73 6	93	93	33	53	80	20	13	33	33	0
2b	20	85	55 5 100 0	80	80	35	50	45	5	10	55	30	0
3	14	79	100 43 79 14	79	79	36	64	93	29	21	50	0	0

Results were below the expectations of the supervising teacher, who had anticipated at least 80% correct response on all items following completion of the program.

Conclusion

The first phase of the SCIS Program was completed by second and third grades, which then made some headway with the Interaction and Systems Program. First graders completed Material Objects by year's end. None progressed to the Organisms Program. Despite the program lag and limited success evidenced by test results, the elementary supervising teacher believes that the program should be continued and that pupils will progress faster now that the program is established.

COMPARISONS

A similar class in the same school served as a comparison group for each Bilingual Program class. The school population was 70% Spanish-American. The proportion of Spanish-dominant Spanish-Americans was greater in the Bilingual Program. Classroom teachers furnished information in Table XV in May, 1972. Reference to the table shows that the bilingual and regular classes differed in factors other than the use of two languages by the Bilingual Program. Compared with the regular classes, the bilingual classes had fewer pupils and more non-English-speaking pupils; pupils were ungraded; and team teaching was used more. The Bilingual Program had fewer pupils and more teachers and aides in the following ratios:

	Pupil/Teacher Ratio	Pupil/Aide Ratio
Bilingual Program	13.7 : 1	19.2 : 1
Regular Program	30.4 : 1	45.6 : 1

Bilingual Program and regular groups were compared on performance on tests administered in English in the City-Wide and Special Testing Programs in Spring, 1972. These were the Metropolitan Readiness Tests, Form A, kindergarten; Cooperative Primary Tests, Form 12A, first and second grades and Form 23A, third grade; and Cognitive Abilities Test, second grade. Pupils who did not understand English were not tested.

Findings - Kindergarten

The kindergarten bilingual group was compared with the regular class on the Metropolitan Readiness Test in spring of each year. The subtests measure the development of pupil skills which "contribute to readiness for first grade instruction", according to the test manual.

TABLE XV

Elementary Population and Process Program and Comparison Groups

	Bilingual Program					Comparison Groups					
	K	1	2a	2b	3	Total	K	1	2	3	Total
Number of Teachers	1	2	2	1	1	7	1	1	1	1	4
Number of Aides	1	1	1	1	1	5	1	1	1	1	4
Number of Volunteers	0	1	0	0	0	1	0	0	0	0	0
Number of Pupils	22	23	20	16	15-21	102	40 (two classes)	35	34	28	137
Number of Non English-Speaking	4	7	3	6	0	20	0	2	0	0	2
<u>Teaching Processes</u>											
<u>Semester 1:</u>											
Self-Contained Classroom	x	x	x	x	x	x	x	x	x	x	x
Ungraded		x	x	x	x	x					
Team Teaching	x	x	x	x	x	x					
<u>Semester 2:</u>											
Self-Contained Classroom	x	x	x	x	x	x	x	x	x	x	x
Ungraded		x	x	x	x	x					
Team Teaching	x	x	x	x	x	x					
Other											
		Flexible Grouping						Extra Help			

x = Teaching process used

Previous Findings

In Spring, 1970, the comparison group scored higher than the bilingual kindergarten. In Spring, 1971, the bilingual kindergarten scored higher than the comparisons and both group means were at least 15 points higher than in 1970.

Current Findings

Scores for Spring, 1972, are shown in Table XVI.

TABLE XVI
Mean Scores on the
Metropolitan Readiness Test, Form A, of
Bilingual and Comparison Kindergarten Pupils
May, 1972

	Bilingual Group (N = 17)		Comparison Group (N = 19)	
	\bar{x}	SD	\bar{x}	SD
Word Meaning	7.24	2.36	7.10	1.97
Listening	10.71	2.05	8.32	2.64
Matching	9.35	2.17	6.53	2.72
Alphabet	12.35	4.73	8.00	3.75
Numbers	15.82	4.79	9.37	4.17
Copying	4.77	2.71	5.32	4.17
Total	60.23	12.99	44.11	14.53

$$t = 3.49^*$$

* Significant at the .01 level

Overall performance by Bilingual Program pupils was significantly greater than the comparison group on the Metropolitan Readiness Test in spring.

There was no difference between the groups on the Guidance Testing Associates' Test of General Ability administered in Fall, 1971. The impressive gains of the program group probably reflect the initiation of an all-day kindergarten for the Bilingual Program which the bilingual teacher felt was a great advantage. The comparison group attended half days.

Boehm Test of Basic Concepts

Space, quantity, time, and miscellaneous concepts necessary for school achievement are included in the 50-item multiple-choice test.

Pupils were pretested in October, 1971, and posttested in May, 1972, with the English or Spanish form.

As shown in Table XVII, the difference between the two kindergartens was not statistically significant on the pre or posttest.

TABLE XVII

Mean Pre/Post Scores
Boehm Test of Basic Concepts
Bilingual Program and Comparison Kindergartens
October, 1971 - May, 1972

Group	Pre			Post		
	Number of Pupils	Mean Score	SD	Number of Pupils	Mean Score	SD
Bilingual	21	27.86	8.84	19	35.47	7.64
Regular	15	27.00	8.88	13	32.77	7.39
		$t = .028$			$t = 1.00$	

Conclusion

The Bilingual Program and comparison groups made approximately equivalent gains in basic concepts.

The concepts tested in the Boehm (e.g., top, inside, third) are closely related to arithmetic. The Metropolitan subtests were designed to measure "readiness", mainly in skills prerequisite to reading. The English-speaking kindergarten Bilingual Program pupils appeared to have developed more of the verbal "readiness" for first grade work than the half-day regular class.

Findings - Primary

Cooperative Primary Test

Grade One:

Results are shown in Table XVIII.

TABLE XVIII
Mean Scores on the
Cooperative Primary Tests, Form 12A, of
Bilingual and Comparison First Grade Pupils
May, 1972

	Bilingual (N = 16)	SD	Comparison (N = 32)	SD	t
Listening	27.56	6.21	35.38	8.90	3.14*
Mathematics	31.88	3.30	37.41	7.30	2.87*
Reading	8.44	3.33	22.38	5.79	8.90*

* Significant beyond the .01 level

The comparison group performance was superior in all tests. The "Word Analysis" test was not administered to the bilingual group and, therefore, is not included. The contrast in mean reading scores was extreme and could reflect confusion from learning to read in English and Spanish simultaneously at the beginning of bilingual first grade.

Grade Two:

Results are shown in Tables XIX and XX.

TABLE XIX

Mean Scores of Bilingual Program and
Comparison Second Grade Pupils on the
Cooperative Primary Test, Form 12A
May, 1972

	Bilingual (N = 27)	SD	Comparison (N = 33)	SD	t
Listening	29.82	6.13	37.73	4.58	5.72*
Word Analysis	32.93	9.09	48.33	9.36	6.43*
Mathematics	33.56	9.01	46.00	5.01	6.77*
Reading	23.04	7.98	34.00	9.27	4.85*

* Significant at the .01 level

TABLE XX

Mean Scores of Bilingual Program and
Comparison Second Grade Pupils on the
Cognitive Abilities Test, Primary II, Form 1
May, 1972

	Bilingual (N = 27)	SD	Comparison (N = 33)	SD	t
Oral Vocabulary	8.19	3.18	13.58	3.87	5.82*
Relational Concepts	10.52	2.67	13.67	2.46	4.75*
Multi-Mental	11.04	3.55	13.46	3.09	2.82*
Quantitative Concepts	13.15	3.28	19.91	3.21	8.03*
Total	42.89	10.18	60.61	9.53	6.95*
Deviation IQ	76.78		98.82		

* Significant at the .01 level

Bilingual Program second graders scored lower on both the Cooperative Primary Tests and the Cognitive Abilities Test (CAT). The substantial difference in total scores on the CAT indicates that the bilingual group was behind in the "development of skills needed to master a wide variety of instructional content", which the test was designed to measure. Many educators have observed that standardized tests are biased in favor of the Anglo-American culture. It might also be observed that they thus represent the culture in which the pupil must survive and compete during most of his school career.

Grade Three:

Results for grade three are shown in Table XXI.

TABLE XXI

Mean Scores of Bilingual Program and Comparison Third Grade Pupils on the Cooperative Primary Tests, May, 1972

	Bilingual (N = 13)	SD	Comparison (N = 24)	SD	t
Listening	36.85	5.66	29.83	5.81	3.54*
Word Analysis	52.77	5.04	42.83	8.17	3.98*
Mathematics	40.46	5.84	29.17	5.65	5.74*
Reading	32.92	5.63	22.58	7.78	4.22*
Writing	42.77	5.07	27.63	7.31	6.33*

* Significant at the .01 level

In the Bilingual Program, there was a trend to a turn-around from low performance at second grade to high performance at third grade. This may

indicate a pattern in learning through a bilingual curriculum. Bilingual Program pupils scored higher on all subtests.

Tests of Reading English

Guidance Testing Associates' Tests of Reading English were administered to Bilingual Program and comparison groups in April, 1972. Results are shown in Tables XXII to XIV.

Grade One:

TABLE XXII

Mean Scores of First Grade Bilingual Program
and Comparison Groups on the Guidance Testing Associates'
Test of Reading English, Level 1

	Bilingual (N = 16)	SD	Comparison (N = 32)	SD	t
Vocabulary	9.56	6.13	17.44	6.19	4.21*
Comprehension	6.38	4.85	13.22	7.04	3.95*
Total	15.94	9.75	30.66	12.38	4.15*

* Significant beyond the .01 level

The comparison group started the first grade at a higher level on a test of general ability. At the end of the year, the comparison group showed greater achievement in English reading.

Grade Two:

Results for grade two are shown in Table XXIII.

TABLE XXIII

Mean Scores of Second Grade Bilingual Program
and Comparison Pupils on the Guidance Testing Associates'
Test of Reading English, Level 2

	Bilingual (N = 33)	SD	Comparison (N = 34)	SD	t
Level	10.82	5.57	15.03	5.79	3.03*
Speed	4.21	3.24	5.41	2.35	1.73
Vocabulary	11.79	7.44	19.79	7.09	4.56*
Total	26.79	13.58	39.94	13.65	3.95*

* Significant at the .01 level

The comparison group did not differ from the bilingual group in the Level 1 Guidance Testing Associates' Test of Reading English in September but demonstrated a higher level of reading skills than bilingual pupils near the end of the school year.

Grade Three:

The Level 2 test was given in September, 1971, and April, 1972. Results are shown in Table XXIV.

TABLE XXIV

Mean Scores of Bilingual and Comparison
Third Grade Pupils on Guidance Testing Associates'
Test of Reading English, Level 2, April, 1972

	Bilingual (N = 9)	SD	Comparison (N = 24)	SD	t
Level	27.89	6.40	16.50	5.97	4.68*
Speed	11.33	5.64	7.50	3.93	1.87
Vocabulary	30.56	4.62	23.75	7.61	3.12*
Total	69.78	14.72	47.75	15.90	3.61*

* Significant at the .01 level

The Bilingual Program third grade started the year with higher (but not statistically significant) mean scores and ended the year with better English reading skills than the comparison group.

Conclusion

Summarizing the overall picture for 1971-1972,

- kindergarten program and comparison pupils entered school at similar levels of concept development. By the end of the year, the bilingual group had acquired greater verbal "readiness" skills, which the teacher attributed to the full-day program.

- the first grade bilingual group was below the level of the comparison group.
- the second grade bilingual group was below the level of the regular class. Perhaps the slow assimilation of bilingual competencies was operating at first and second grade.
- third grade Bilingual Program pupils closed the gap and ended the year above grade level (as represented by the test scores of the regular class).

SECONDARY

Hispano-American Culture, Language, and History
United States History
Bilingual Reading
Personal Economics
Sociology

OVERALL GOALS OF THE SECONDARY PROGRAM

- To help students, through the process of inquiry, to improve their ability to generalize and to analyze values so that they can make intelligent decisions independently.
- To give Spanish-background students as well as English-dominant students an opportunity to help each other acquire skill in communicating each other's language.
- To provide the opportunity for newly-arrived, Spanish-background students to gain confidence as they learn subject content material in English - at the same time, their own Spanish language helps bridge the gap from one language to another.

OVERALL PROCEDURES

Courses were taught by bilingual Latin-Americans. Spanish and English were used in almost equal proportions in all but reading classes. There Spanish was used mainly as a tool for the teaching of English reading skills.

Curricula were modeled on course outlines in "Performance of Objectives for Bilingual Education Offerings at the Secondary Level". Bilingual reading was the only course which operated at Lincoln Jr-Sr High School.

EVALUATION

Evaluation was limited to two objectives for each course, as selected by program staff.

TABLE XXV

Total Secondary Population
by Grade, May, 1972

Grade Level	South Division	Lincoln
7	—	4
8	—	6
9	—	7
10	58	1
11	52	1
12	<u>26</u>	<u>2</u>
Total	136	21

TABLE XXVI

Secondary Population
by Subject Area

Grade Level	Hispano*	Reading		United States History*	Personal Economics*	Sociology*
		Lincoln	South			
7		4				
8		6				
9		7				
10	38	1	33	6		2
11	4	1	24	36	5	3
12	<u>3</u>	<u>2</u>	<u>18</u>	<u>2</u>	<u>2</u>	<u>5</u>
Total	45	21	65	51	7	10

* South Division only

Of the 26 seniors in the Bilingual Program, five graduated in January and 21 (of a total 50 Latins) graduated in June. Sixteen of the June graduates planned to attend college.

HISPANO-AMERICAN CULTURE, LANGUAGE, AND HISTORY

GOALS:

- To help Spanish-background students achieve a positive sense of self-identity and pride as they develop bilingually and biculturally.
- To help students obtain a better understanding of the background and contributions of Spanish-Americans to the United States.
- To help Spanish-background students, who have little or no knowledge of United States History, to obtain an understanding of certain concepts of this history before they enroll in the United States History course.

CLASSROOM PROCEDURE

The class was taught bilingually. The teacher selected "The Latin Americans" by Cuña et al, MacMillan Co., as the most useful of many texts which were sampled during the year.

OBJECTIVE 1

The student will learn the content of Hispano-American Culture, Language, and History as shown in "Performance of Objectives for Bilingual Education Offerings at the Secondary Level" whether his language background is English or Spanish.

Evaluation Procedure

Nine "in-class test items" were selected by the teacher as a pre(October)-post(May) measure of achievement (Appendix G). Students took the test in their preferred language, Spanish or English.

Findings

Table XXVII indicates the percent correct on each question. Questions omitted from the posttest referred to material not covered during the year.

TABLE XXVII

Student Achievement in
Hispano-American Culture, Language, and History

Question Number	Percent of Pupils Who Responded Correctly	
	Pre(October) N = 14	Post(May) N = 7
1	14	—*
2	35	71
3	21	86
4	14	—*
5	7	—*
6	0	29
7	0	43
8	7	43
9	0	—*

* Not tested

Conclusion

The few who were tested at both the beginning and end of the year appear to have gained information about Latin-American history and culture. For the coming school year, course objectives and test items will be revised by the teacher and a vocabulary list will be developed. These and other modifications are expected to result in more effective teaching/learning transactions.

OBJECTIVE 2

The student will develop understanding and speaking skills in his second language as a result of exposure to both languages in the classroom.

Evaluation Procedure

In January, 1972, the Common Concepts Foreign Language Test (California Test Bureau) was administered in Spanish (Form 1) and English (Form 2) on alternate days to measure comprehension. The test was designed to evaluate comprehension of Spanish, French, or German. For this program, it was used for Spanish and English as second languages. The students' task was to identify the one of four pictures that matched a spoken sentence. Six training exercises preceded 80 test sentences. The test was given to two U.S. History classes and one Hispano class. A retest in May was planned in order to determine gains in second language comprehension.

Findings

Fifty-one students were present both days and pretested in both languages. Seventy-eight percent of them (1/0) responded correctly to at least 90% (72) of the items in both Spanish and English. The posttest was limited to those who scored lower than 72 on one or both tests. Seven students were posttested (six in Spanish, one in English). Scores of four rose to at least 90% correct in both languages. Mean pre-post scores are shown in Table XXVIII. By the end of the year, 86% of students had at least 90% comprehension of oral English and Spanish, as evidenced by performance on the Common Concepts Foreign Language Test.

TABLE XXVIII

Pre/Post Mean Scores
Common Concepts Foreign Language Test

	Spanish (N = 6)	SD	English (N = 1)	SD
Pre	56.83	14.30	66.00	—
Post	64.67	17.92*	72.00	—

* Significant at the .05 level

Conclusion

Most students entered the Bilingual Program with good comprehension of spoken English and Spanish. Those who had little familiarity with the second language showed significant gains between January and May.

BILINGUAL UNITED STATES HISTORY

GOALS:

- To provide continuity in bicultural instruction for those students who completed the Hispano-American Culture, Language, and History course the previous year.
- To develop in the student an awareness, understanding, and appreciation of our American freedoms, and understanding of the responsibilities that derive from these freedoms, and a sense of obligation to practice them in daily life.
- To teach the concepts of history and government of the United States so that the students will be prepared for intelligent participation in our democratic society.
- To enable the student to interpret the present in the light of both the past and the present and to prepare for the future.

CLASSROOM PROCEDURE

Many texts were sampled. "Study Lessons in American History" by Abramowitz was adopted because it stressed vocabulary and concept building. The lessons were translated in Spanish by a Professor of Spanish Languages, Marquette University.

OBJECTIVE 1

Students enrolled in the bilingual U.S. History class will show as much American History achievement as students enrolled in the regular U.S. History classes as measured by a standardized test at the end of the year.

Evaluation Procedure

The social studies supervising teachers selected the Cooperative Social Studies American History Test, Senior High School, Form A, for use in evaluating this objective. These supervisors shortened the instrument to 50 items by dropping 20 items considered inappropriate. Permission to translate the

test into Spanish was granted by Educational Testing Service. A Latin-American professor of Spanish, Marquette University, was the translator.

A comparison group was drawn from a list of Spanish-surname 11th grade students enrolled in regular U.S. History classes at South Division. The list was furnished by a Latin-American vice-principal at the school and reviewed by the Supervising Teacher. The test was administered on the same day to the comparison group and to bilingual U.S. History classes. Students selected the English or Spanish form.

Findings

The score was the total number correct on the 50-item test. As shown in Table XXIX, both groups demonstrated low levels of performance. The comparison group mean score was 3.27 higher than the bilingual class, a statistically significant difference.

TABLE XXIX

A Comparison of American History Test Scores
Between Bilingual and Comparison Groups, May, 1972

Group	Number of Pupils	Mean Score	SD
Bilingual	37	15.38	4.84
Comparison	23	18.65	4.32

$$t = 1.72^*$$

* Significant at the .05 level

Conclusion

The objective was not met. In fact, students in the bilingual U.S. History class actually scored lower than students in the regular U.S. History classes.

The social studies supervising teachers suggested that the lower scores of the Bilingual Program group might reflect a lack of training in the skills of interpretation and generalization. The bilingual U.S. History teacher thought the results could be attributed partly to initial disorganization at the beginning of the year, prior to obtaining a text and course outline. He plans to modify the course as a result of the test outcome. It must be remembered that, although the comparison group was matched as closely as possible to the bilingual, language differences existed: 11% of bilingual and 83% of comparison classes were English-dominant; 72% bilingual and 17% comparison were bilingual; 17% bilingual and 0% of the comparison classes were Spanish-dominant. Because students were not randomly assigned, whatever variable(s) that caused their selection of bilingual or regular U.S. History classes operated to distinguish them as different populations. As an explanation of this, it is suggested that the comparison group, though Spanish-surnamed, had more second and third generation people who had a lifetime acquaintance with this country's history.

OBJECTIVE 2

The student will develop understanding and speaking skills in his second Language as a result of exposure to both languages in the classroom.

Evaluation Procedure

The Common Concepts Foreign Language Test was administered in January, 1972, in Spanish (Form 1) and English (Form 2) as a pretest assessment of comprehension in both languages of bilingual social studies students. Results revealed that most of them had at least 90% bilingual comprehension (scored 72 or above on both the Spanish and English 80-item tests) as reported in the previous section. No further information would have been obtained by post-testing those 40 students. Instead, a test of curriculum vocabulary was substituted. A pool list of 166 English words used in the U.S. History curriculum was obtained. Thirty were then selected (every fifth word) for inclusion in the test. This year-end test required students to match each word with the appropriate definition, written by the history teacher.

Findings

Thirty-nine students averaged 20.23 correct on the 30-item test.

Conclusion

The class demonstrated acquisition of English vocabulary related to U.S. History.

BILINGUAL READING COURSE

GOALS:

- To assist subject content teachers to improve the reading achievement of Spanish-background students.
- To assist Spanish-background students to overcome reading and study difficulties in English, to improve their reading ability, and to read the specialized language of subject content areas.
- To assist Spanish-background students more effectively by close cooperation of the Bilingual Reading Specialist with subject content teachers, especially the following:
English as a Second Language; Hispano-American Culture, Language, and History (bilingual subject); U.S. History (bilingual subject); and Spanish(S) (designed for Spanish-background students).

CLASSROOM PROCEDURE

Individualized instruction was provided in an effort to elevate the students' level of English reading ability. Students elected the course or were recommended by subject content teachers. There were five bilingual reading classes at South Division. In addition, program or non-program students could go to the bilingual reading center for extra help during their study halls. Fifteen volunteer Spanish-American students, who attended the University of Wisconsin-Milwaukee, provided the extra help for approximately 60 South Division students per week.

There were two bilingual reading classes in the morning at Lincoln High School. The bilingual reading teacher spent the afternoon helping her counterpart at South Division.

OBJECTIVE 1

Secondary students will gain at least one English reading level on a pre-post test after two semesters in a bilingual reading class.

Evaluation Procedure

The Nelson Reading Test was administered in September (Form A) and May (Form B) by the bilingual tester. The test has 100 vocabulary items and 75 paragraph items to measure comprehension.

Findings

Results shown in Table XXX indicate a two-month reading gain at South Division and a four-month gain at Lincoln High School.

TABLE XXX

Gains in Reading Achievement of South Division and Lincoln High School Bilingual Students as Measured by the Nelson Reading Test

School	Number of Pupils	Grade Equivalent		
		Pre	Post	Gain
South Division	36	5.8	6.0	0.2*
Lincoln	7	4.4	4.8	0.4*

* Did not meet objective of one-year gain

Conclusion

The objective gain of "at least one grade level" was not achieved at either school, as specified in the objective. The groups ended the year near last year's posttest grade equivalents on the Nelson Reading Test (4.5 - Lincoln, 6.1 - South Division) but showed less improvement. Since pre-post gains have not reached the equivalent of one grade level in the two years of the program, a more realistic criterion might be in order.

PERSONAL ECONOMICS

GOALS:

- To understand the nature of our economic system and the techniques used in functioning economically.
- To learn a number of concepts essential to an understanding of some of the more important economic problems facing a consumer in contemporary society.
- To develop competence in referring to available materials, public agencies, economic principles, and other aids which will enable the student to make practical economic decisions.
- To develop skill in personal decision-making and evaluation of alternative choices through the use of objective analysis.

CLASSROOM PROCEDURE

Personal Economics was a pilot course in some Milwaukee Public Schools. The Bilingual Program staff translated and adapted the course outline for a one-semester offering to alternate with bilingual sociology.

OBJECTIVE 1

Given a problem in which a family has insufficient funds to pay for living expenses, the student will be able to cite at least three community agencies likely to be of assistance.

Evaluation Procedure

The pre(September, 1971)-post(January, 1972) ten-item test included this question: "Joe was just laid off. He does not have any money saved to support his family while he finds a job. Which three community agencies could help him?". As shown in Table XXXI, of the six who took both the pre and posttest, the percentage who met the criterion rose from 17% to 66%. At the end of the course, 54% of the total class membership met the criterion.

OBJECTIVE 2

The student will be able to enumerate at least three advantages of consumer credit.

Evaluation Procedure

The test included the item: "List four advantages and four disadvantages in the use of credit".

Findings

The six students who were pre and posttested could not cite three advantages or disadvantages of consumer credit at the start of the course but 66% of them had success at the end. At least three-fourths of the total class membership had become aware of credit risks and advantages by the end of the course, as shown in Table XXXI.

TABLE XXXI

Student Attainment of Personal Economics Objectives

	Pre	Post	Total Post
Percent of students who cited . . .	N = 6		N = 13
three community agencies.	17	66	54
three advantages of the use of credit.	0	66	84
three disadvantages of the use of credit.	0	66	76

At the end of the posttest, students were asked to grade the course and the teachers. Ten students responded with four A's, three B's, and three C's for the course, and eight A's and two B's for the teachers. Student suggestions for improvement included more field trips, only one teacher, and a