DOCUMENT RESUME

ED 102 272 95 UD 014 860

TITLE Evaluation of the Chelsea Title VII Bilingual Program, 1973-1974.
INSTITUTION Heuristics, Inc., Dedham, Mass.
SPONS AGENCY Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C. Div. of Bilingual Education.; Chelsea Public Schools, Mass.
PUB DATE Feb 74
NOTE 107p.

EDRS PRICE MF-$0.76 HC-$5.70 PLUS POSTAGE
DESCRIPTORS Biculturalism; *Bilingual Education; Bilingual Teacher Aides; Bilingual Teachers; *Elementary Education; English (Second Language); Individualized Instruction; *Program Evaluation; School Community Relationship; Small Group Instruction; *Spanish Speaking; Urban Education
IDENTIFIERS *Chelsea; Elementary Secondary Education Act Title VII; ESEA Title VII; Massachusetts

ABSTRACT

This report presents the evaluation of the Chelsea Bilingual-Bicultural Program for the 1973-1974 academic year, a project funded by Title VII of the 1965 Elementary Secondary Education Act, as amended, and also by the city. Program staff included the following: program director, materials specialist, community worker, English as a Second Language specialist, six bilingual teachers responsible for instruction in both languages (English and Spanish) in all academic areas in grades 1-3, six teacher aides, and a secretary. The program operated at the first through third grade levels in two schools. There were three program classes in each school, one at each grade level. Classes were generally divided into two main groups according to language dominance, and these groups were subdivided into smaller groups according to ability levels. With a teacher and an aide in each class, small group and individualized teaching techniques were the most frequently used instructional approaches. Class sizes ranged from a low of 17 to a high of 24 students. This report presents the summative assessment. The report first presents the evaluation procedures for program assessment. This is followed by a description of the program and a discussion of the instructional and management components. (Author/JM)

Chelsea Public Schools
Chelsea, Massachusetts

Evaluation of the Chelsea Title VII Bilingual Program 1973-1974

HEURISTICS INC.

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INTRODUCTION

This report presents the evaluation of the Chelsea Bilingual-Bicultural Program for the 1973-1974 academic year. The project was funded by ESEA Title VII and also received financial assistance from the city. Heuristics, Inc. was engaged to perform the evaluation of this second year of program operation. The evaluation was conducted under Office of Education guidelines for assessment of Title VII programs including an Educational Audit. The evaluation focused on the assessment of the degree of accomplishment of product objectives for each component of the program.

This report presents the summative assessment of the program. Formative assessment was provided orally to the project director continuously during the year and in the written Interim Evaluation Report submitted in February, 1974.

The report first presents the evaluation procedures for program assessment. This is followed by a description of the program and a discussion of the instructional and management components.

EVALUATION PROCEDURES

As part of the assessment of the Chelsea Title VII program the following activities were performed by the evaluators with the cooperation in many instances of appropriate program staff members:

1. Assistance in the revision and specification of program objectives;
2. Construction and refinement of the evaluation design;
3. Selection and/or construction of appropriate measuring instruments;
4. Construction and analysis of various data collection forms;
5. Construction and analysis of attitude instruments for teachers, aides, and PAC members;
6. On-site classroom observation;
7. Interviews with program staff members;
8. Review of program files;
9. Analysis of test results;
10. Provisions of regular feedback to the project director;
11. Preparation of written reports.

PROGRAM DESCRIPTION

Introduction

This section of the report presents a description of the Chelsea Title VII bilingual program. The following topics are discussed: staff positions and personnel educational background, number of classrooms, number of students, student attendance, and class (subject matter) schedules.

Staff

As scheduled, the Chelsea bilingual program began its second operational year on the opening day of the public schools with its full complement of instructional and non-instructional staff members. The staff included the following personnel:

Program director - responsible for overall program management;

Materials specialist - responsible for materials acquisition and overall management of the Curriculum Center, and for the development of in-service activities;

Community worker - responsible for liaison between the community, home, and the program;

ESL specialist - responsible for providing supplementary English as a Second Language (ESL) instruction to Spanish dominant students most in need;

Six bilingual teachers - responsible for instruction in both languages (English and Spanish) in all academic areas in grades 1 through 3;

Six teacher aides - responsible for assisting the teachers in instructional and non-instructional activities;

Secretary - responsible for office management under the direction of the program director.

Since the beginning of this fiscal year, four changes in personnel have occurred: 1) a new director was hired--the previous one resigned to take another position within the school system; 2) an ESL specialist was hired to fill this new position; 3) two teacher aides resigned for personal reasons in November, and two new aides were hired immediately; 4) also in November, the materials specialist resigned to accept another position with the school system, and a new specialist was not hired until January--during the two-month interim period the director assumed the responsibilities of the position.

All the non-instructional staff (director, materials specialist, and community-worker) are fluent in Spanish and English, with English as a first language for two of them and Spanish for the other. Their academic credentials are as follows: holder of a master's degree and three years teaching experience (including one year of teaching in Mexico); holder of a bachelor's degree and currently doing graduate work for a master's degree, and six years foreign language teaching experience; several years experience in working with Spanish and English community groups and currently enrolled at a local university in a program leading to an associate degree in Human Services.

As noted previously, there are six teachers and six aides in the program; one-third of them were new to the program this year. Additional teachers and aides were needed because the program was expanded this year to include the third grade. All the teachers were bilingual in Spanish and English with varying degrees of second language competency. Five of the six teachers were native

English speakers; of the five, one holds a master's degree, one is enrolled in a master's program, two have one year of teaching experience in public schools, three have taught in the bilingual program for one year, and two have no teaching experience. The native Spanish speaking teacher holds a degree from a Peruvian college, is currently taking courses at a local college for certification, and has three years teaching experience--two years in Peru and one year in the bilingual program. Of the six aides, four are native Spanish speakers with varying degrees of English language competency, and two are monolingual in English. The two English speaking aides are taking Spanish language courses. The ESL specialist is also monolingual in English, holds a bachelor's degree, and has had four years teaching experience as an ESL teacher. Table 1 presents a summary of the staff's background excluding, however, the aides and the secretary.

Classes

The Title VII bilingual program operated at the first through third grade levels in two Chelsea schools--the Williams and the Shurtleff. There were three program classes in each school--one at each grade level--for a total of six bilingual classes (see Table 2). Classes were generally divided into two main groups according to language dominance and these groups were sub-divided into smaller groups according to ability levels. With a teacher and an aide in each class, small group and individualized teaching techniques were the most frequently used instructional approaches.

Table 1

Staff Background Summary

Category	Staff: Non-Instructional 1	2	3	Instructional 1	2	3	4	5	6	7
Language Ability										
First Language English	✓	✓		✓	✓	✓		✓	✓	✓
First Language Spanish			✓				✓			
Bilingual (Eng.-Span.)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Monolingual (Eng.)										✓
Experience										
Teaching										
Bilingual Program				✓	✓		✓	✓		
United States	✓	✓		✓				✓		✓
Foreign	✓						✓			
Educational										
Bachelor's Degree	✓	✓		✓	✓	✓	✓	✓	✓	✓
Master's Degree	✓							✓		
Currently Enrolled in Degree Program		✓	✓				✓		✓	
Other	✓		✓							✓

Table 2

Number of Bilingual Classes by School and Grade

School	Number of Classes for Grade 1	2	3	Total
Williams	1	1	1	3
Shurtleff	1	1	1	3
Total	2	2	2	6

Class sizes ranged from a low of 17 to a high of 24 students. The classes were generally larger at the Shurtleff school than at the Williams. For the six program classes, however, the average size was 20 students--12 Spanish and 8 English dominant students (see Table 3). The aim of the program was a class size of 20 students composed of 10 Spanish and 10 English speaking students. It was difficult, however, to recruit sufficient numbers of English dominant students to participate in the program (only 29% of the first grade students this year were English dominant). These empty English dominant seats were generally filled from the list of Spanish dominant volunteers, thus producing the imbalance of English speaking to Spanish speaking students.

Observation of the program's classes was conducted by the evaluator throughout the school year. Observations were standardized using a form devel-

Table 3

Program Enrollment by School, Dominant Language, and Grade

School	Dominant Language	Number of Students in Grade 1	2	3	Total	Average No. of Students Per Class By Group	Average No. of Students Per Class
Williams	Spanish	12	10	9	31	10.3	18.3
	English	5	8	11	24	8.0	
Shurtleff	Spanish	17	9	14	40	13.3	22.0
	English	7	11	8	26	8.7	
Total	Spanish	29	19	23	71	11.8	20.2
	English	12	19	19	50	8.3	
Total	Combined	41	38	42	121		20.2

oped by the evaluators and 88 such observations were recorded. (See the Program Operation section for further discussion of the classroom observations.)

Students

The program had a total enrollment of 121 students -- 71 Spanish dominant (which represents approximately 59% of the total enrollment) and 50 English dominant students. Approximately the same number of students were served by the program at each grade level -- 41 first grade, 38 second grade, and 42 third grade students. (See Table 3 for a more complete presentation of the enrollment data.)

First grade students were selected for the program from the population normally entering the first grade during the 1973-1974 school year in the participating schools. The second and third grade students this year were last year's first and second grade students and, therefore, have been in the program for one year. One criterion met by all participants--first, second, and third graders alike--was parental consent. All students, therefore, participated in the bilingual program with the approval of their parents.

Attendance

In September the program began with 121 students --55 at the Williams and 66 at the Shurtleff. At various times throughout the year (September through May) students left and entered the program. The most prevalent reason for this mobility, which was associated exclusively with Spanish dominant students, was families moving out of or into the school districts served by the participating

schools. The net result of this mobility was that attendance data was provided for a total of 124 students--59 at the Williams and 65 at the Shurtleff--and for no more than 115 students for any one month.

The attendance data are presented in Tables 4 and 5. Table 4 presents the attendance by the month, i.e., the number of students present for a certain percentage of school days each month from September through April and the percentage of students present at least 80% of the time. Examination of Table 4 shows that for September the percentage of students in attendance at least 80% of the time was very high (97%). This percentage decreased steadily from September through January and then began to increase from January through April. This pattern was also reflected in the separate schools; however, the attendance rate was consistently higher at the Shurtleff than at the Williams.

The attendance data were also analyzed to provide an overall estimate of the students' consistency of attendance. The analysis involved the tabulation of each student's daily attendance during the length of time he or she was registered for the program. For most of the students the length of time (September-April) was 142 and 146 days at the Williams and Shurtleff schools respectively. (The reason for the 4-day difference between the two schools was the conflagration in October that destroyed nearly 20% of the city of Chelsea resulting in the closing of the Williams school, which was on the periphery of the fire, for four days.) The number of students present for decreasing percentages of the total number of days was established for each school and the combined schools. A sum-

Table 4

Number of Students in "Percent-of-Time Present" Intervals by Month and School

Percent-of-Time Present Interval	September		October		November		December		January		February		March		April	
	W*	S*	W*	S*	W*	S*	W*	S*	W*	S*	W*	S*	W*	S*	W*	S*
100	33	37	22	29	15	20	5	12	9	14	13	30	17	18	9	15
95 - 99	-	-	-	5	-	4	13	16	-	2	13	1	10	10	15	18
90 - 94	6	12	18	9	14	15	11	5	8	14	-	5	-	1	-	7
85 - 89	7	4	6	4	8	6	9	11	11	6	6	5	4	10	12	10
80 - 84	6	2	-	6	6	6	6	4	6	6	4	4	8	7	6	4
75 - 79	2	1	3	1	3	2	2	2	9	5	4	4	5	5	1	1
70 - 74	-	-	-	1	3	2	3	4	5	3	4	2	5	2	4	1
65 - 69	-	-	4	-	1	-	2	1	1	-	5	1	1	3	1	2
60 - 64	-	-	1	1	1	-	-	2	1	1	2	3	1	1	2	-
55 - 59	-	-	-	-	2	-	1	-	1	1	-	1	1	-	-	1
50 - 54	-	-	-	1	1	-	1	-	1	1	2	-	-	3	1	-

Table 4 (cont.)

Percent-of-Time Present Interval	September W*	September S*	October W*	October S*	November W*	November S*	December W*	December S*	January W*	January S*	February W*	February S*	March W*	March S*	April W*	April S*
Below 50	-	-	-	-	-	2	-	-	1	3	-	2	1	2	2	2
Total by School	54	56	54	57	54	57	53	57	53	56	53	58	53	62	53	61
Combined Total	110		111		111		110		109		111		115		114	
Percent of Students Present ≥80%:																
by School	96	98	85	93	80	90	83	84	64	75	68	78	73	74	79	89
Combined Schools	97		89		85		84		70		73		74		84	

*W = Williams School
S = Shurtleff School

mary of the analysis is presented in Table 5.

Table 5

Number of Students in "Percent-of-Time Present" Intervals by School Over an Eight Month Period (September - April)

Percent-of-Time Present Interval	School: Williams N	Williams %	Shurtleff N	Shurtleff %	Total N	Total %
100	-	-	1	2	1	1
95 - 99	13	22	23	35	36	29
90 - 94	17	29	14	21	31	25
85 - 89	10	17	10	15	20	16
80 - 84	7	12	8	12	15	12
75 - 79	7	12	3	5	10	8
70 - 74	4	6	3	5	7	5
65 - 69	1	2	-		1	1
60 - 64	-		-		-	
55 - 59	-		1	2	1	1
50 - 54	-		-		-	
Below 50	-		2	3	2	2
Total	59	100	65	100	124	100

Inspection of Table 5 indicates that overall student attendance was very good. The table shows that 103 of the 124 registered students (83%) attended school at least 80% of the time, and that more than half of them (68 of 124 students or 55%) were present at least 90% of the time.

The principal factor affecting the rate of attendance was sickness. In many cases, however, "sickness" was the excuse when unsuitable clothes or footwear for inclement weather, sick parent or sibling were the real causes. Suspected or known cases in this category were reported to the community liaison person who investigated and acted accordingly, i.e., by referring the family to the proper social agency or by serving as a counselor for the family. Another factor affecting the attendance in a few cases was that some students were marked absent before the school had become aware that the family had moved.

Schedules

The bilingual program operated in the participating schools according to the schedule established by the Chelsea school system. The school day began at 8:30 A.M. and ended at 2:00 P.M. for a 330 minute school day or 1650 minute school week. The distribution of time was in terms of minutes per day for the major subjects of language arts, reading, spelling, mathematics, and ESL-SSL, and for the non-instructional periods of opening exercises, recess, and lunch. The time distribution was in minutes per week for such subjects as writing, science, and social studies. Except for SSL (Spanish as a Second Language) and ESL (English as a Second Language), instruction in the academic subjects was

generally presented in the students' native language by the program's teachers and aides. Instruction in the non-academic subjects (physical education, music, and art) was generally conducted in English by non-program teachers approximately every two weeks, and not weekly as indicated in the class schedule. The schedules for the Spanish and English dominant students are presented in Tables 6 and 7.

The class schedules for the Spanish dominant students varied slightly within and across the two schools. This variance was attributable to the fact that some Spanish dominant students received additional ESL instruction daily from the ESL specialist. She served those students who had little or no English language ability and those students who, in the opinion of the classroom teacher, could benefit the most from additional English language instruction. The length of the instructional period was approximately 40 minutes; students left their regular classroom to go to another room for ESL instruction. At the Shurtleff, the other "room" was the coat room of each classroom; at the Williams there was a separate room available. The ESL instructor's schedule was arranged so that she was at the Shurtleff school in the morning and at the Williams in the afternoon. Next year, the schedule should be arranged so that for a period of time she will be at one school in the morning and for another period of time at the same school in the afternoon.

Teacher schedules also varied somewhat for the six teachers in the two schools. This variance was attributable to teacher preference for and competence

Table 6

Spanish Dominant Student Activity Schedule and Distribution of Time in Minutes per Week (Minutes per Day)

Activity	Grade 1		Grade 2		Grade 3	
	Minutes Per		Minutes Per		Minutes Per	
	Week	Day	Week	Day	Week	Day
Opening Period	60		60		60	
*Spanish Language Arts oral, written	150	30	150	30	150	30
*Spanish Reading oral, silent, phonics	475	95	375	75	300	60
ESL oral	200	40				
ESL oral, written			200	40	250	50
Mathematics	160	32	160	32	185	37
*Spelling			100	20	100	20
Integrated Language Arts	40		40		40	
Science	15		15		15	
Social Studies	80		80		80	
Writing	100		100		100	

Table 6 (cont.)

Activity	Grade 1		Grade 2		Grade 3	
	Minutes Per Week	Day	Minutes Per Week	Day	Minutes Per Week	Day
Music	60		60		60	
Art	60		60		60	
Physical Education	100		100		100	
Recess	50	10	50	10	50	10
Lunch	100	20	100	20	100	20

*Major subjects

Table 7

English Dominant Student Activity Schedule and Distribution of Time in Minutes per Week (Minutes per Day)

Activity	Grade 1 Minutes Per Week	Grade 1 Minutes Per Day	Grade 2 Minutes Per Week	Grade 2 Minutes Per Day	Grade 3 Minutes Per Week	Grade 3 Minutes Per Day
Opening Period	60		60		60	
*English Language Arts	150	30	150	30	150	30
*English Reading						
oral, silent	450	90				
phonics	125	25				
oral, silent, phonics			425	85	400	80
*SSL						
oral	100	20				
oral, written			150	30	150	30
*Mathematics	160	32	160	32	185	37
*Spelling			100	20	100	20
Integrated Language Arts	40		40		40	
Science	15		15		15	
Social Studies	80		80		80	

Table 7 (cont.)

Activity	Grade 1		Grade 2		Grade 3	
	Minutes Per Week	Day	Minutes Per Week	Day	Minutes Per Week	Day
Writing	100		100		100	
Music	60		60		60	
Art	60		60		60	
Physical Education	100		100		100	
Recess	50	10	50	10	50	10
Lunch	100	20	100	20	100	20

*Major Subjects

in certain academic areas. For example, in three classrooms at one school the aides did most of the teaching to Spanish dominant students in Spanish reading and language arts, under the direction of the teacher, because the teachers felt the aides were more proficient in Spanish. Other arrangements were made between teachers: one teacher handled the social studies and science instruction and another teacher handled ESL and SSL instruction for their classes; one teacher taught reading in Spanish to the Spanish speaking students and the other taught reading in English to the English speaking students in their classrooms.

PROGRAM OPERATION

Introduction

In this section of the report, opinions and observational data concerning various program elements are discussed. These data were gathered by interview and discussion, questionnaire, and classroom observation techniques.

Classroom Observation

Since classroom environment and interaction are closely related to learning outcomes, a specially designed observation form was used for recording data on each of these dimensions. The 18 entries on the form concerned with classroom environment required the observer to record both factual and judgmental data on the physical characteristics of the classroom space and on the materials used. As many as possible of the salient characteristics of the space were included, such as room size, lighting, ventilation, and acoustics. Materials were judged according to the supply on hand and condition. On the classroom interaction dimension the instrument guided the gathering of data on the interaction behavior of teachers, aides, and students. Of the 33 items on this dimension on the observation form, the following are presented as representative: small group instruction, individualized instruction, class divided into three or more groups, materials preparation, teacher questions-student responds, student discussion-teacher directed.

The observer made a total of 88 observations--76 classroom observations and 12 ESL observations. The observations took place at both participating schools from the end of November through the beginning of May. These data are presented in Table 8. The length of time for an observation ranged from 10-40 minutes; the average duration of an observation was 22 minutes.

Table 8

Number of Classroom Observations by School, Grade, and Month

School	Grade	Month							Total
		Nov	Dec	Jan	Feb	Mar	Apr	May	
Williams	1	1	3*	1	3*	2	3	2	15
	2	1	2	2*	2	3	4*	1	15
	3	1	2	2*	2	3	3	1	14
Shurtleff	1	1	2	2*	3**	4	3	1	15
	2	1	2	1	2*	4	3*	1	15
	3	1	3*	1	1	5*	2	1	14
Total		6	14	9	13	21	18	7	88**

* Includes one (1) observation of the ESL Specialist
** Includes two (2) observations of the ESL Specialist
*** Includes twelve (12) observations of the ESL Specialist

All instruction (with the exception of ESL instruction conducted by the specialist at one of the schools) took place in regular classrooms with movable seats. Hence, the room size coupled with the small class size and movable seats made for excellent accommodations for small group and individualized instruction. Room acoustics, lighting, and ventilation were good; room management in most instances was observed to be orderly; distractions, such as corridor and outside noise, were minimal. There appeared to be an adequate supply of instructional materials in good condition. (Questionnaire results for teachers and aides, however, indicate that the majority of them did not feel that there were enough school supplies.) In most instances materials were neatly stored on table tops (particularly the library books) and in closets or cabinets.

At the Williams school all ESL instruction took place in a room separate from the classrooms. This room was quite adequate for instructional purposes, except that ventilation was poor. At the Shurtleff school, however, ESL instruction was conducted in the coatroom of each classroom. In all three instances, these "rooms" were totally inadequate for instruction in terms of size, seating arrangements, acoustics, lighting, ventilation, and storage space. Hopefully, other arrangements can be made next year.

The 12 observations of ESL instruction indicated that the teacher used small group instructional techniques all of the time. The student-teacher interaction method was a combination of having the students respond to a given question

(Teacher Questions-Student Responds) and involving them in a discussion of some visual experience (Student Discussion-Teacher Directed).

For the 76 regular bilingual classes observed in approximately 34% of the observations students were not divided into groups. In 17% of the observations the classes were divided into two groups; the remaining observations (49%) found the classes divided into three or more groups. When classes were recorded as ungrouped it did not necessarily mean that teachers were conducting "large group" lessons, since individual work with the same materials by all in a class was recorded as an "ungrouped" observation, as in the mathematics classes using a basic text designed for individualized instruction.

The 76 classroom observations provided the opportunity for 86 entries on the interaction dimension. This difference between visits and entries was due to changes in content area during an observation. During all the observations (86), teachers were observed to be involved in small group instruction 54% of the time, in individualized instruction 35% of the time, and in classroom monitoring 6% of the time. In the remaining time (5%) they were either absent from the classroom (3 observations) or involved in non-instructional activities (1 observation). The student-teacher interaction technique most often observed (67% of the time) was recorded under the category "Teacher Questions-Student Responds" (student responds to a given stimulus question). For the remaining percentage of time (33%) students were involved in teacher-guided discussions.

During the 86 observations of classroom activities obtained from the 76 classroom visits, aides were observed performing instructional activities 73% of the time. Their remaining time (27%) was spent in non-instructional activities such as preparing materials and correcting papers (15%) and in various duties which took them out of the classroom (12%). During the observations of classroom activities the instructional method used by the aides most often was the small group technique (41% of the time). They were observed in individual instruction 23% of the time (this method occurred most often during the math period), and in monitoring the class 9% of the time. The interaction technique (student-teacher interaction) most often used by the aides was question-response techniques (83% of the time); the guided discussion method was employed the remaining 17% of the time.

The content areas for which instruction was occurring during the classroom observations are shown in Table 9. (It should be noted that for the 86 entries on the interaction dimension that on four occasions for the teachers and 22 occasions for the aides they were either not present or engaged in non-instructional activities at the time--but never at the same time. Hence, the 82 and 64 total entries for teachers and aides respectively in Table 9.) Examination of the table shows that for 50% of the observations the teachers were involved in content areas (reading in English and language arts) associated exclusively with English dominant students; and that for approximately 58% of the time the aides were involved in subject matter associated with the Spanish dominant students. Only two teach-

ers were involved in the 11 observations (13.4%) of reading in Spanish with Spanish dominant students; and only two aides were involved in the nine observations (14%) of reading and language arts in English with English dominant students. Even in mathematics, which was usually presented on an integrated basis, the observation was that teachers usually spoke in English and the aides in Spanish. The observational data, supported by interview data, suggest that for the majority of teachers the instructional language was English and for the majority of aides the instructional language was Spanish. This situation apparently evolved because the majority of teachers were native English speakers who lacked confidence in their Spanish language ability, and the majority of aides were native Spanish speakers who had limited English langauge ability. To help correct this situation (if indeed it does need correcting), the evaluators suggest that the director give more weight to fluency in both langauges in hiring new teachers and aides when the program is extended to the fourth grade next year.

Bilingual Education in General

Teachers unanimously agreed that bilingual education is important and valuable, and is not an educational fad. The majority of teachers and aides considered it a practical approach to the education of non-English speaking children that would neither impede their overall education nor retard the "Americanization" process. Teachers and aides also indicated that bilingual education was as beneficial to English dominant students as it was for Spanish dominant students, and that the education received by English dominant participants was not inferior to that of their peers in the regular school program.

Table 9

Number and Percent of Classroom Observations of Teachers and Aides by Content Area

Content Area	Observations			
	Teachers		Aides	
	N	%	N	%
Reading in English (Eng. Dom.)	25	30.5	2	3.1
Reading in Spanish (Span. Dom.)	11	13.4	24	37.5
English Language Arts	16	19.5	7	10.9
Spanish Language Arts	1	1.2	13	20.3
Mathematics (Integrated)	21	25.6	11	17.2
English-Second Language (ESL)	3*	3.7	-	-
Spanish-Second Language (SSL)	-	-	4	6.2
Social Studies	2	2.4	-	-
Handwriting (Integrated)	1	1.2	2	3.1
Spelling	1	1.2	-	-
Music	1	1.2	1	1.6
Total	82	99.9**	64	99.9

* There were 12 additional observations of ESL instruction presented by the ESL Specialist

** Percentage does not equal 100 due to rounding errors

Bilingual Education in Chelsea

Unanimously, the professional and paraprofessional teaching personnel believed that there was a need for a bilingual program in the city, and that the cultural-educational experience would enrich the lives of those students who participated in it. All of the teachers and most of the aides felt that it was useful for English speaking students as well as Spanish speaking students to learn the Spanish language in school, and for Spanish speaking students to study their academic subjects in their native language. Program personnel indicated that, in their opinion, participating students enjoyed the program. Half of the teachers, however, felt that non-program teachers did not approve of the program. This may suggest an area for further investigation and for dissemination of program information.

Program Administration

The bilingual instructional staff (teachers and aides) agreed that the program was well planned and organized, and that the program administrators were responsive to their individual needs. Unanimously the aides agreed that the director was available to assist them in any way possible; however, approximately half of the teachers did indicate a desire for more personal contact with the director. The staff indicated that they were helped and had sufficient contact with the curriculum, ESL, and community liaison specialists.

Communication

A majority of both teachers and aides agreed that communication among program personnel within schools, and among program personnel and non-program personnel within schools was good; however, communication among program personnel between schools should be improved, though the morale of both teachers and aides was high.

Instructional Preparation and Training

Nearly all of the teachers indicated that their academic training was adequate preparation for teaching in the program; that they understood the methodology of bilingual classroom instruction; that the wide range of English language competency in the classroom did not make the teaching situation difficult; and that, although there were special problems in teaching a bilingual class, they preferred teaching a bilingual class to a regular (non-bilingual) class. They also said that they knew the objectives of the program, and that their teaching was related directly to these program objectives.

The aides unanimously considered themselves competent to provide academic instruction to students; however, the majority indicated a desire for training in bilingual instruction, teaching methods, and in classroom management.

Instructional Conditions and Materials

Concerning the instructional conditions of the classrooms, the majority of teachers agreed that the class sizes were appropriate for individualized instruction; they rejected, however, the statement that the physical characteristics of their classrooms were appropriate for bilingual instruction, (their reasons for this response should be investigated--it may suggest a need that may be met through appropriately designed in-service programs). Most of the teachers also agreed that they were satisfied with the amount of audio-visual materials available for use in the classrooms. The observer, however, saw the use of audio-visual equipment in the classroom on only two occasions--a recording in a music class, and a film in a math class.

The majority of teachers and aides agreed that the amount of instructional materials provided were sufficient and in good condition. However, only half of the teachers and aides agreed (with the other half disagreeing) that the quantity of general school supplies (e.g., pencils, paper, erasers, chalk) were adequate.

Staff and In-service Meetings

In general, teachers were divided in their attitude toward the number and effectiveness of staff meetings. Most of them agreed that the number of meetings held this year was satisfactory, yet the majority indicated that they were uncertain whether or not the number should have been increased. The majority of teachers indicated that the meetings did not provide them with infor-

mation, techniques or materials that would be of use to them in the classroom--the rest of the teachers disagreed and indicated that the meetings were effective. Unanimously the aides, and the majority of teachers thought that aides should also attend staff meetings. This past year, aides were invited to attend the meetings, but only one or two attended any one meeting. Perhaps aides should be required to attend all staff meetings just as the teachers.

The majority of teachers were satisfied with the time allotted for pre-service, and with the number of in-service meetings scheduled this year. The aides unanimously agreed, as did most of the teachers, that the aides should attend in-service meetings.

Most of the teachers indicated that the in-service program was well planned and organized, and that the meeting times and locations were convenient. They did indicate, however, that they would have liked to have been given more advanced notification of the meetings, and that the meetings should not be held at one school all of the time. Furthermore, they agreed that, in general, the in-service time had been used efficiently, and that the overall program was not only worthwhile but had met their needs as teachers. They felt that the instructors were knowledgeable in their specific content area, and came to the meetings well prepared. The majority also agreed that while they had learned many useful things during the overall program and that their participation in the program had added to their professional growth; their involvement in the program, however, did not produce any significant change in their teaching methods. Finally, most of the

teachers indicated that they had not been involved in the planning and organizing of the in-service program, but they unanimously agreed that they should have been.

Teacher Aides

In general, the teachers indicated that they and their aides worked well together and that they would like to work with the same aides next year. The teachers unanimously agreed, however, that the aides should receive additional instruction concerning their duties and responsibilities as aides; furthermore, the majority of teachers also indicated that they would like some training on how to use aides more effectively in the classroom.

The aides unanimously agreed that they were being used to good advantage in the classroom, and that they were provided with the supportive help they needed from the classroom teachers. Most of them indicated that they received adequate supervision; however, many of them would like more direction from the teachers.

Concerning the aides' role in the program, all the aides indicated that they knew what their duties and responsibilities were, and that they were competent to handle them. Most of them also believed that their duties (e.g., helping to prepare lesson plans and materials, working with small groups and individual students, and correcting papers) should not be increased. While the majority of aides indicated that they generally work with the same students most of the time, all of them agreed that they had a good working rapport with all of the students in the class. Unanimously the aides indicated that there should be more

cooperation and the exchange of ideas among aides within the same school and across the two schools.

Progressive versus Traditional Practices in Education

In addition to submitting to interviews and completing questionnaires, program personnel also completed the Education Scale developed by Kerlinger and Kaya. This Scale measures attitudes toward progressive and traditional educational practices, and provides three scores--progressive and traditional attitude scores, and a total score which is obtained by subtracting the traditional score from the progressive score.

The Scale contains 20 items--10 for each subscale. The respondent indicates his/her agreement or disagreement with each item by circling one of six choices--AVS (agree very strongly), AS, A, D, SD, and DVS (disagree very strongly). Responses are then converted to a numerical scale with a score range of 7 (AVS) to 1 (DVS), with a blank (no response) given a score of 4. The subscale scores can range from 10 to 70 and the total score from -60 to +60. A high score on a subscale reflects favorable attitudes toward the dimension being measured (i.e., traditional or progressive practices in education). A positive total score indicates progressive attitudes, and a negative total score indicates traditional attitudes toward education. (See Scales for the Measurement of Attitudes by Shaw and Wright, pages 83-86 for further discussion of the Education Scale, and Educational and Psychological Measurement, Volume XIX (1959), 13-29 and 305-317 for two studies by Kerlinger and Kaya concerning the construction and validation of the Education Scale.)

The average subscale scores and total score for each group (teachers and aides) are reported in Table 10; graphical presentation of the subscale scores are shown in Figure 1 and of the total scores in Figure 2. The data summary in Table 10 suggest that the teachers hold attitudes favorable to a progressive form of education. For example, they show a tendency to believe that "learning is experimental" and involves the "testing of alternatives before accepting any of them" rather than the idea that "learning is essentially a process of increasing one's store of information;" and that students "should be allowed more freedom than they usually get in the execution of learning activities" rather than students "need and should have more supervision and discipline than they usually get." The aides, however, seem to believe equally in both types of educational practices, showing no clear-cut preference for either. Also, they exhibited more homogeneity in their opinions than did teachers. Nevertheless, both groups, teachers and aides, fell in the first quadrant (high progressive and high traditional scores) when their mean progressive and traditional scores were plotted using a coordinate system with a score of 40 as the origin. This indicates relatively high scores on both dimensions (see Figure 1). The positive total score reflects that both groups showed a favorable overall attitude toward progressive educational practices as shown in Table 10 and Figure 2. In comparison, though, the teachers were more progressive in attitude and opinion than were the aides. The difference between the two groups may be accounted for (at least partially) by the factors of age, educational background, and origin of birth. As a group the teachers are younger and all but one were born, raised, and educated in this

country; whereas the aides are older as a group, and two-thirds of them were born, raised, and educated in countries other than the United States.

Table 10

Subscale and Total Score Attitudinal Results on the Educational Scale by Group

Group	Progressive Score		Traditional Score		Total Score	
	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S
Teachers (N=7)	55.0	6.5	42.9	11.8	12.1	17.7
Aides (N=5)	53.6	2.9	51.6	3.0	2.0	2.9

In sum, if the bilingual-bicultural concept of education is considered to be innovative and progressive, then the data suggest that some of the personnel involved in the teaching process have ideas, beliefs, and opinions that are not consistent with the concept. The results, then, may suggest a need that may be met in part through appropriately designed in-service programs.

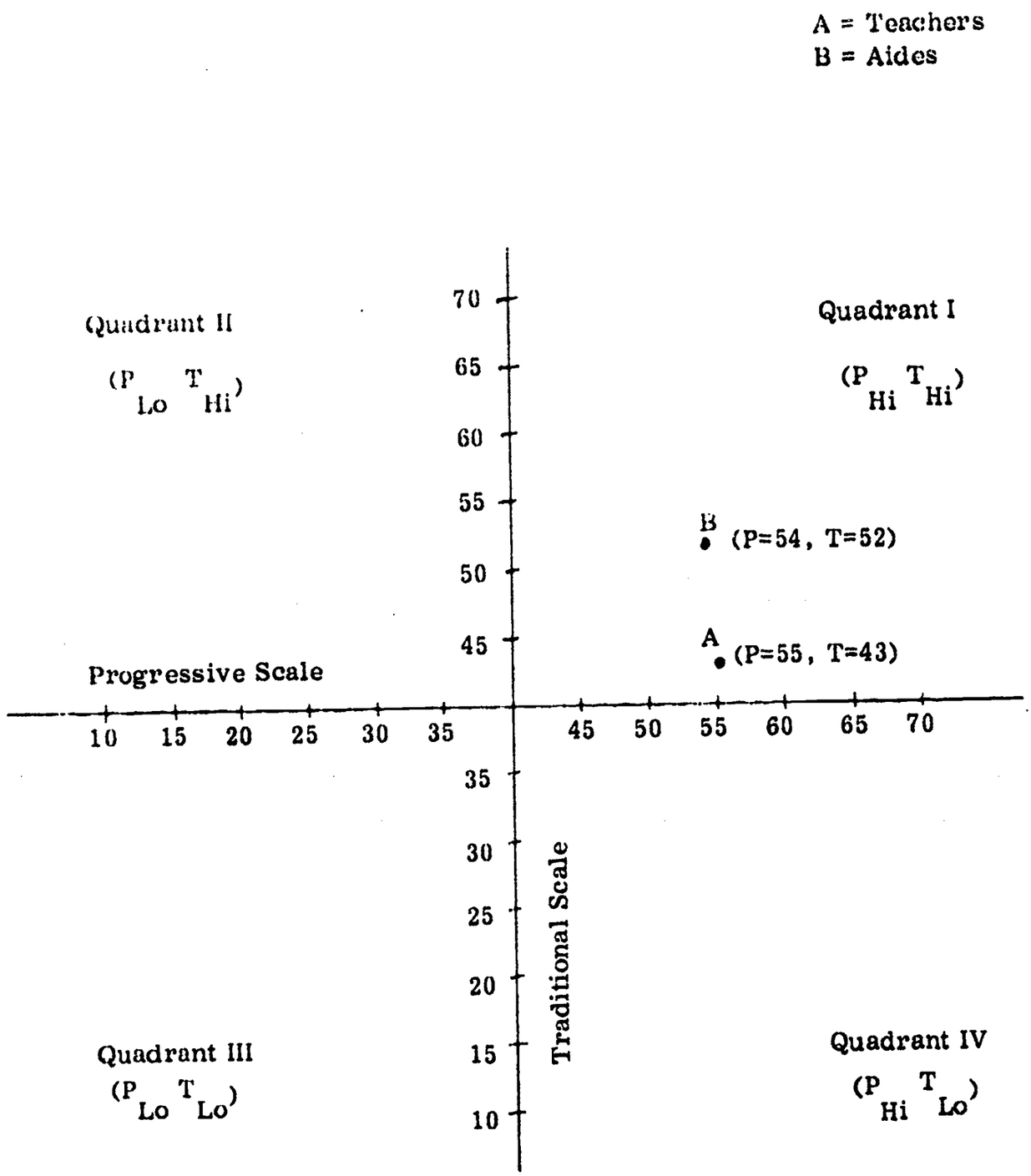

Figure 1: Subscale Mean Scores on the Education Scale for Teachers and Aides

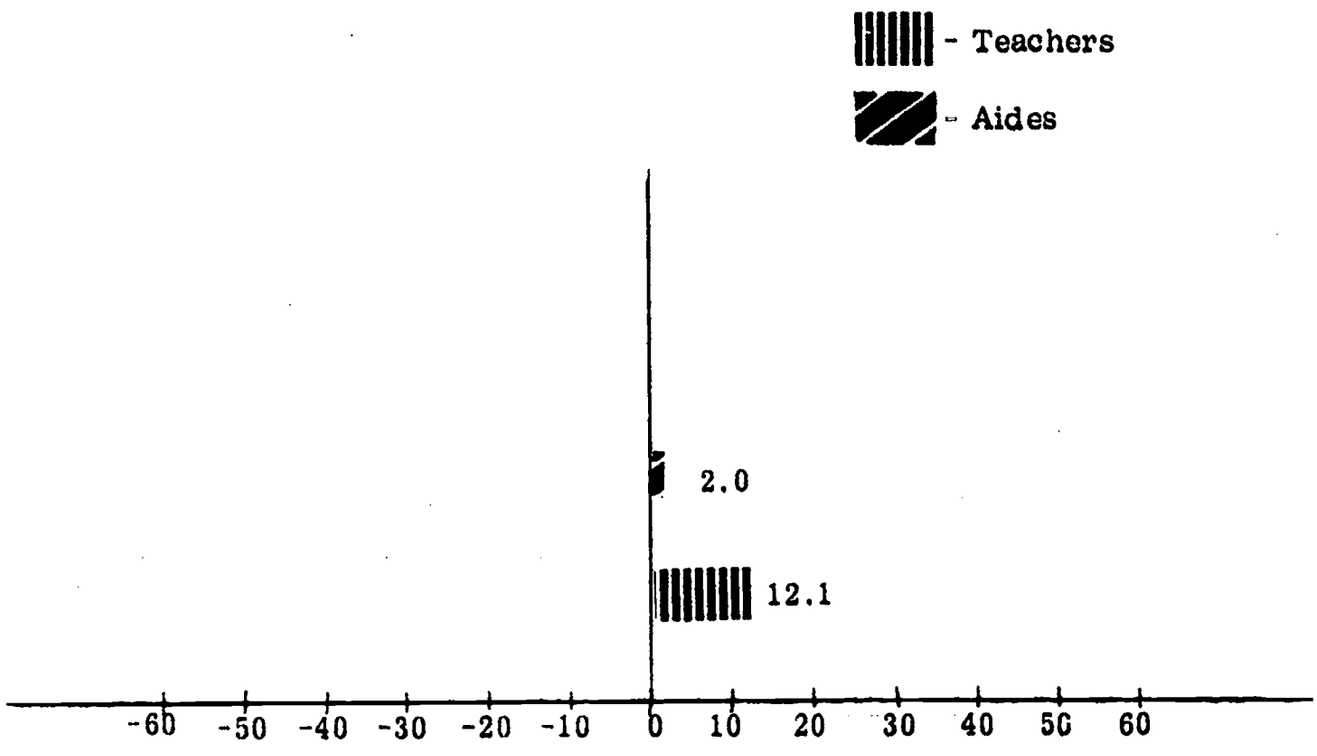

Figure 2: Total Score Means on the Educational Scale for Teachers and Aides

Instructional Component

Introduction

The product objectives of the Instructional Component focused on student achievement in the academic areas of reading (English and Spanish), mathematics, language arts (English and Spanish), and the production of Spanish and English speech sounds and grammatical structures.

During October, 1973 English dominant students were administered Comprension del Lenguaje Oral from the Inter-American Series and selected subtests from appropriate levels of the 1970 edition of the Metropolitan Achievement Tests. At the same time, Spanish dominant students were administered appropriate levels of the Prueba de Matematica, Prueba de Lectura, and the English Oral Productive Tests. In addition, their achievement in language arts was assessed by a teacher-completed Language Arts Checklist.

Post-testing for all students with all tests took place during the first part of May, 1974 producing approximately a seven month interval between testing sessions. Pre and posttests were administered by the same instructional personnel. Testing procedures were observed by the evaluators, auditors, and program administrators and no irregularities were noted.

In evaluating the Instructional Component objectives which are the same except for grade level, have been combined to form one objective. (This method was recommended by the auditor also.) The consolidated objectives, however,

carry the objective numbers used in the Evaluation Design of each objective that contributed to their formulation. For example the objective 2-E-3.0 reads--second grade, English dominant students, objective 3.

Evaluation by Objective

Product Objectives 1-S-1.0, 2-S-1.0, 3-S-1.0:

> Spanish dominant students in grades 1-3 will demonstrate increased proficiency in reading in Spanish as measured by the Prueba de Lectura. Minimum acceptable level of performance is a 50% increase in the mean raw score.

Evaluation

In October, 1973 and May, 1974, Spanish speaking students were administered the Prueba de Lectura--Level 1 to grades 1 and 2 and Level 2 to grade 3. The test measures Spanish reading skills and has items for which the student must mark the correct picture from four alternatives which corresponds to a printed stimulus. Level 1 has 40 items in each of two parts--Vocabulary and Comprehension; Level 2 has 110 items in three parts--Level of Comprehension (40 items), Speed of Comprehension (30 items), and Vocabulary (40 items). At each level the parts are combined to produce a Total Reading Score.

Using correlated data, pre and post means were compared to the criterion; in addition, pre- and post-test scores were analyzed with t-tests for correlated data. The results of these analyses are presented in Tables 11 and 12 and Figure 3.

Examination of Table 11 indicates that the performance in reading in Spanish at all three grade levels surpassed the criterion stated in the objective. The greatest pre-post gain--35 raw score points--was exhibited by grade one students. A gain this large, however, is not surprising: the low pretest mean allowed the students to make a dramatic growth in achievement. The achievement gains made in all grades were statistically significant as shown in Table 12. Additionally, a perusal of the posttest standard deviations shows considerable heterogeneity in each grade in the ability measured (i.e., reading in Spanish).

Table 11

Pre-Post-test Means on the Prueba de Lectura for Spanish Dominant Students in Grades 1 - 3

Grade	Test Level	Pre-test $\bar{X}$	Post-test $\bar{X}$	Criterion* $\bar{X}$
1 (N = 19)	1	8.6	43.7	12.9
2 (N = 17)	1	30.3	52.1	45.5
3 (N = 15)	2	28.3	49.3	42.5

*Criterion = Pre-test $\bar{X}$ + 1/2 Pre-test $\bar{X}$

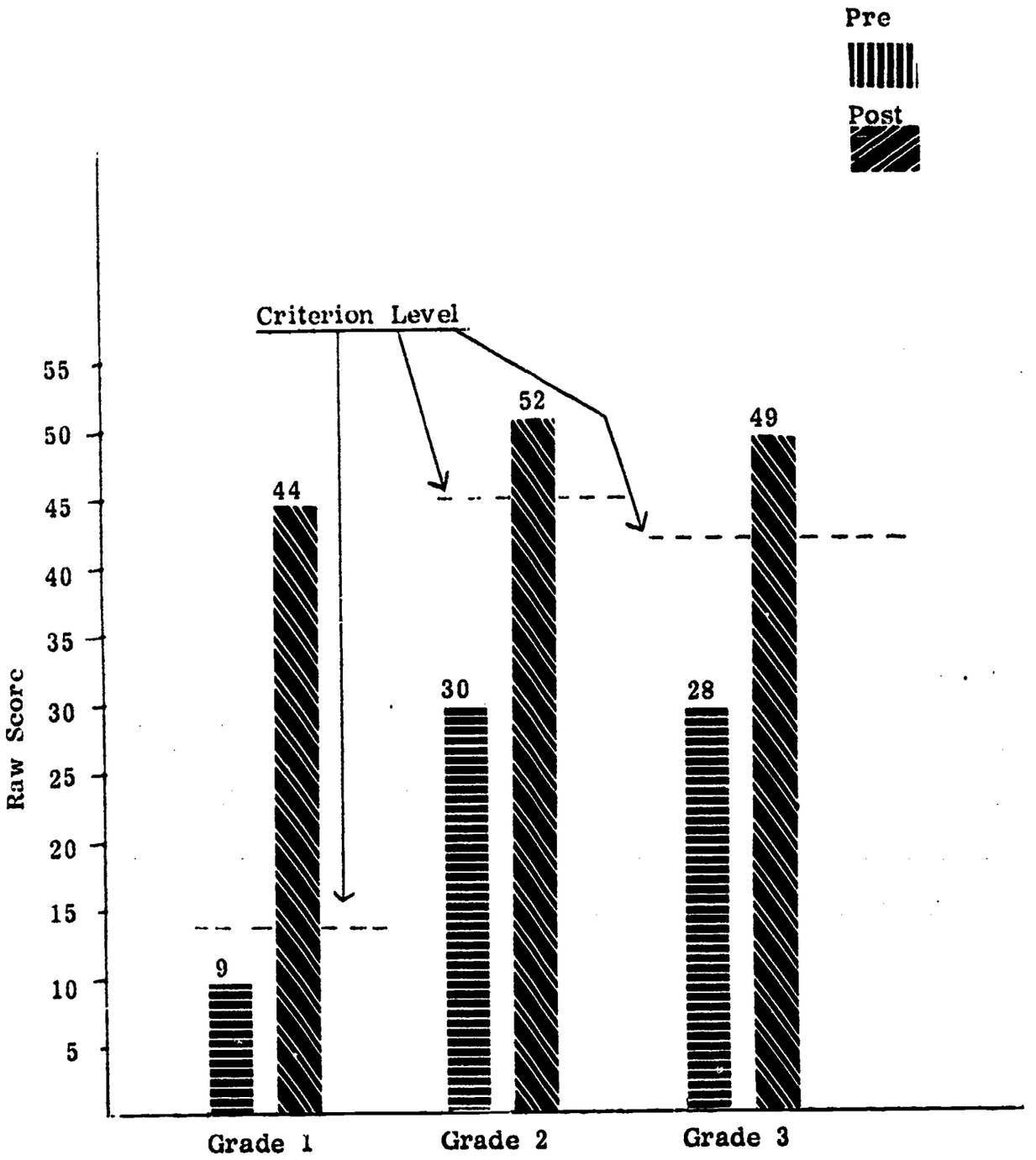

Figure 3: Pre- Post-test Raw Score Means on the Prueba de Lectura for Spanish Dominant Students in Grades 1 - 3

Table 12

Statistical Results of the Prueba de Lectura for Spanish Dominant Students in Grades 1-3

Grade	Test Level	Testing Session	Raw Score $\bar{X}$	S	t
1 (N = 19)	1	Pre	8.6	7.7	7.658**
		Post	43.7	20.9	
2 (N = 17)	1	Pre	30.3	21.5	4.759**
		Post	52.1	23.6	
3 (N = 15)	2	Pre	28.3	10.9	4.097
		Post	49.3	22.1	

*$p < .01$
**$p < .001$

Product Objectives 1-S-2.0, 2-S-2.0, 3-S-2.0

Spanish dominant students in grades 1-3 will demonstrate increased proficiency in English as a Second Language as measured by the English Oral Productive Test. Minimum acceptable level of performance is a 50% increase in the raw score mean.

Evaluation

The English Oral Productive Test is individually administered and assesses a student's ability to speak English as a second language. There are four levels of the test. For each item on the test the student is asked a question about a

stimulus picture, or asked to respond to a question which does not refer to a picture. Each level of the test has two parts--Word Meaning and Conversational Idiom--which combine to give a Total Score. The Maximum total score for the Primary Level is 86 (43 points for each part) and for Level 1 it is 84 (42 points for each part). In October and May, Spanish dominant students in grade 1 were pre- and post-tested with the Primary Level and grades 2 and 3 with Level 1 of the English Oral Productive Test.

Pre and post raw score means were compared to the criterion stated in the objective. Moreover, raw scores were analyzed for statistical significance by the use of t-tests. The results of all analyses are presented in Tables 13 and 14, and in Figure 4.

A study of the data presented in Table 13 discloses that the criterion was achieved in grade 1 but not, however, in grades 2 and 3. In grade 2, the raw score criterion mean of 62 (computed from the pretest mean) represents an average raw score equivalent to approximately 74% of the test items answered correctly--not an unreasonable task. But the criterion mean for grade 3 (based on the pretest means) of 84 does seem unreasonable since an average score of this magnitude would mean a perfect or near perfect score for all students.

A look at the pre-post means and standard deviations in Table 14 show that while the students in grades 2 and 3 answered approximately 50% and 67% of the items correctly in October they varied widely in their ability to speak English; but by May they not only had raised their scores as a group, they also

became more homogeneous in their English speaking ability. A great deal of the credit for this overall improvement should go to the ESL specialist who worked with the lower ability students. The scores of four students, two from each grade level, are cited as examples: two grade 2 students with pretest scores of 1 and 5 achieved posttest scores of 32 and 31 respectively; two grade 3 students with pretest scores of 4 and 5 obtained posttest scores of 51 and 52 respectively. Table 14 also shows that while the pre-post mean differences for grades 2 and 3 were not large enough to achieve the criterion, they were large enough to be statistically significant.

Table 13

Pre-Post-test Means on the English Oral Productive Test for Spanish Dominant Students in Grades 1-3

Grade	Test Level	Pre-test $\bar{X}$	Post-test $\bar{X}$	Criterion* $\bar{X}$
1 (N = 17)	Primary	25.5	49.9	38.3
2 (N = 21)	1	41.1	55.3	61.7
3 (N = 21)	1	55.9	66.3	83.8

*Criterion $\bar{X}$ = Pre-test $\bar{X}$ + 1/2 Pre-test $\bar{X}$

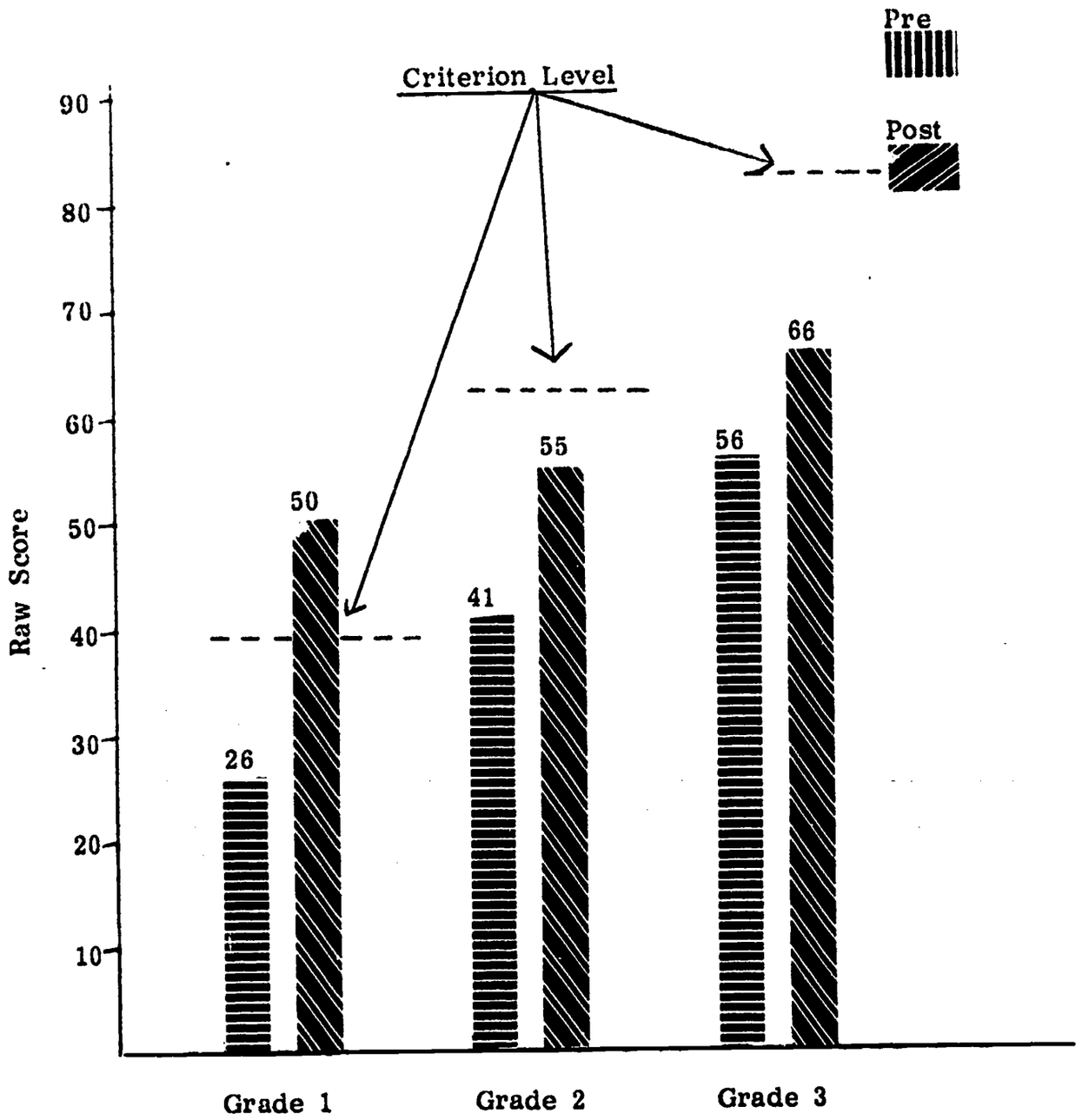

Figure 4: Pre- Post-test Raw Score Means on the English Oral Productive Test for Spanish Dominant Students in Grades 1 - 3

Table 14

Statistical Results of the English Oral Productive Test--
Spanish Dominant Students--Grades 1-3

Grade	Test Level	Testing Session	Raw Score X	S	t
1 (N = 17)	Primary	Pre	25.5	15.8	7.545
		Post	49.9	16.4	
2 (N = 21)	1	Pre	41.1	19.7	6.858**
		Post	55.3	13.0	
3 (N = 21)	1	Pre	55.9	22.0	2.770*
		Post	66.3	9.4	

*$p < .05$
**$p < .001$

In sum, the data suggest that the criterion level be lowered for grades 2 and 3 and/or the next higher level of the test be used, especially for grade 3 students.

Product Objectives 1-S-3.0, 2-S-3.0, 3-S-3.0:

Spanish dominant students in grades 1-3 will demonstrate increased proficiency in Spanish language arts as measured by teacher ratings on a Language Arts Checklist. Minimum acceptable level of performance is statistical significance at the .05 level.

Evaluation

Aided by the Title VII teachers, the evaluators constructed an Objective Checklist Rating Scale. For each objective on the Rating Scale, each Spanish dominant student was rated in October, February, and May on his/her performance using a five-point scale--1 (unable to perform) through 5 (mastery). Teachers identified four objectives for first grade students and to these four added three more (a total of seven) for second and third graders.

The Objective Checklist Rating Scale was analyzed, objective by objective, using the Sign Test (and a one-tailed test of significance since the direction of the differences were predicted). For the analyses, the first (October) and last (May) ratings were used. The results of the analyses are presented in Table 15.

Review of this table indicates that students in Grades 1, 2, and 3 significantly improved their ratings on the Spanish Language Arts objectives from pre to post. No student's rating decreased, and, for any particular objective, the ratings of at most two students remained the same. The impact of program participation on students' Spanish language arts skills is evident. Thus, these program objectives were accomplished.

Product Objectives 1-S-4.0, 2-S-4.0, 3-S-4.0:

> Spanish dominant students in grades 1-3 will demonstrate increased proficiency in mathematics as measured by the Prueba de Matematica. Minimum acceptable level of performance is a 50% increase in mean raw score.

Table 15

Results of the Objective Checklist Rating Scale for Spanish Language Arts for Spanish Dominant Students in Grades 1 - 3

Objectives	Pre > Post	Pre < Post	Pre = Post	Z	p <
Grade 1 (N=23): Students will demonstrate an ability to					
1. express themselves orally	0	23	0	4.589	.001
2. describe objects and pictures	0	22	1	4.447	.001
3. understand and retell a story	0	21	1	4.364	.001
4. express themselves in writing	0	21	1	4.364	.001
Grade 2 (N=16): Students will demonstrate an ability to					
1. express themselves orally	0	15	1	3.615	.001
2. describe objects and pictures	0	15	1	3.615	.001
3. understand and retell a story	0	16	0	3.750	.001
4. express themselves in writing	0	14	2	3.475	.01
5. increase their proficiency in the mechanics of writing	0	15	1	3.615	.001
6. list words in alphabetical order	0	14	2	3.475	.01
7. increase their proficiency in the use of language	0	16	0	3.750	.001

Table 15 (cont.)

Objectives	Pre > Post	Pre < Post	Pre = Post	Z	p <
Grade 3 (N=20): Students will demonstrate an ability to					
1. express themselves orally	0	18	2	4.007	.001
2. describe objects and pictures	0	19	1	4.130	.001
3. understand and retell a story	0	20	0	4.248	.001
4. express themselves in writing	0	19	1	4.130	.001
5. increase their proficiency in the mechanics of writing	0	20	0	4.248	.001
6. list words in alphabetical order	0	20	0	4.248	.001
7. increase their proficiency in the use of language	0	18	2	4.007	.001

Evaluation

The Prueba de Matematica assesses a student's mathematical ability in the four basic functions (addition, subtraction, multiplication, and division). There are four levels of the test. Level 1 (administered to first grade students) and Level 2 (administered to second and third grade students) contained only addition and subtraction problems. Level 1 had 25 items in horizontal and vertical form (row and column) using only two single digit numbers; Level 2 tapped the same skills using 40 two-and three-digit numbers. Test results were compared to the stated criteria; a t-test for correlated data was also used. The results are reported in Tables 16 and 17 and in Figure 5.

The pre-post achievement gains in the fundamental operations of addition and subtraction were large enough to achieve the criterion for grades 1 and 2, but not quite large enough for grade 3 as shown in Table 16; Table 17 shows that the gains made were statistically significant for all three grades. It would have been difficult for grade 3 students to achieve the criterion since it would have required nearly all of the students to obtain perfect scores. The relatively high pre and posttest averages suggest that level 2 of the Prueba de Matematica was not appropriate for these students and that the next higher level of the test be administered next year.

Table 16

Pre-Post-test Means on the Prueba de Matematica for Spanish Dominant Students in Grades 1-3

Grade	Test Level	Pre-test $\bar{X}$	Post-test $\bar{X}$	Criterion* $\bar{X}$
1 (N = 16)	1	2.5	16.1	3.8
2 (N = 18)	2	14.1	27.0	21.2
3 (N = 16)	2	26.6	36.5	39.9

*Criterion $\bar{X}$ = Pre-test $\bar{X}$ + 1/2 Pre-test $\bar{X}$

Table 17

Statistical Results of the Prueba de Matematica for Spanish Dominant Students in Grades 1-3

Grade	Test Level	Testing Session	Raw Score $\bar{X}$	S	t
1 (N = 16)	1	Pre	2.5	3.4	6.515*
		Post	16.1	8.1	
2 (N = 18)	2	Pre	14.1	10.8	5.852*
		Post	27.0	10.0	
3 (N = 16)	2	Pre	26.6	11.2	4.683 *
		Post	36.5	3.7	

* $p < .001$

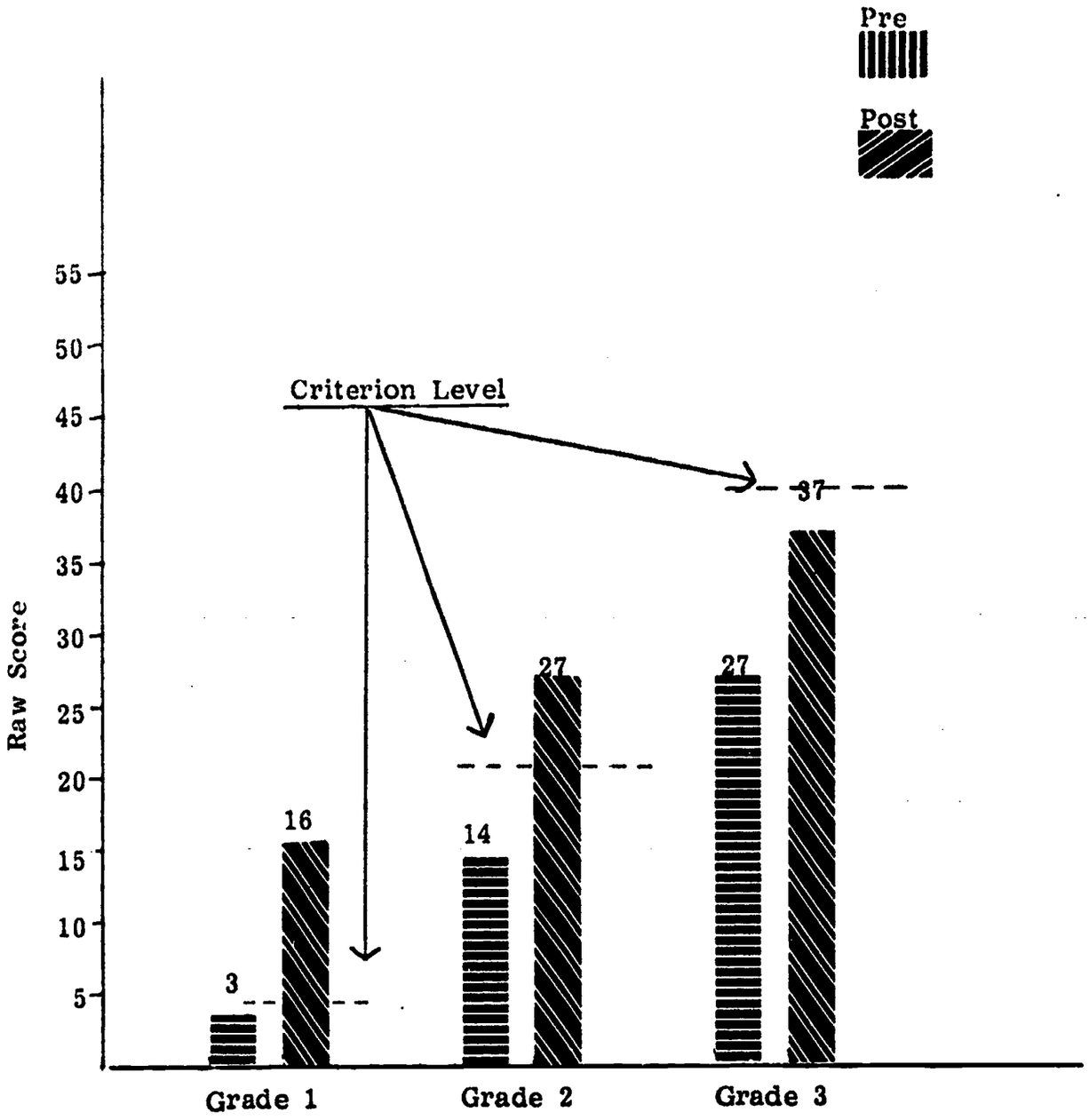

Figure 5: Pre- Post-test Raw Score Means on the Prueba de Matematica for Spanish Dominant Students in Grades 1 - 3

Product Objectives 1-S,E-1.0, 2-S,E-1.0, 3-S,E-1.0

Spanish and English dominant students in grades 1-3 will demonstrate increased proficiency in integrated language arts in Spanish and in English as measured by teacher ratings on a Language Arts Checklist. Minimum acceptable level of performance is statistical significance at the .05 level.

Evaluation

With the help of the teachers, the evaluators constructed an Objective Checklist Rating Scale to assess the progress of students in accomplishing the objectives of the integrated language arts content area. Three objectives were identified for this content area which brought together both groups of students--Spanish and English dominant. The same objectives were used for each grade level. Student performance was rated by the teacher on a five-point scale that ranged from 1 through 5 ("unable to perform" through "mastery"). Each student was rated on each objective three times during the year--October, February, and May. In analyzing the results, for which a Sign Test was used, only the first and last ratings were used. The results of the analyses are reported in Table 18. These data suggest that the Integrated Language Arts activities were highly effective in improving the Spanish and English dominant students' skills in this area. Although the students' showed statistically significant improvement in their performance of all objectives, fewest first grade students' made gains in performing objective #3, and fewest second grade students' made gains in performing objective #1. Spanish and English dominant students made comparable gains. Thus, these program objectives were accomplished.

Table 18

Results of the Objective Checklist Rating Scale for Integrated Language Arts for Spanish and English Dominant Students in Grades 1-3

Objectives	Spanish Dominant				
	Pre > Post	Pre < Post	Pre=Post	z	p <
Grade 1 (N=23)					
1. The student will demonstrate an ability to work with others on a common task in science, social studies, art and music.	0	23	0	4.589	.001
2. The students will learn songs in English and Spanish.	0	19	4	4.130	.001
3. The students will compare and contrast the Puerto Rican, Cuban and mainland cultures.	0	10	13	2.846	.01
Grade 2 (N=8)					
1. The student will demonstrate an ability to work with others on a common task in science, social studies, art and music.	0	6	2	2.042	.05

Table 18 (cont.)

Objectives	Spanish Dominant				
	Pre > Post	Pre < Post	Pre=Post	z	p <
2. The student will learn songs in English and Spanish.	0	8	0	2.475	.05
3. The student will compare and contrast the Puerto Rican, Cuban and mainland cultures.	0	8	0	2.475	.05
Grade 3 (N=12)					
1. The student will demonstrate an ability to work with others on a common task in science, social studies, art and music.	0	10	2	2.846	.01
2. The student will learn songs in English and Spanish.	0	9	3	2.666	.01
3. The student will compare and contrast the Puerto Rican, Cuban and mainland cultures.	0	11	1	3.015	.01

Table 18 (cont.)

Objectives	English Dominant				
	Pre > Post	Pre < Post	Pre=Post	z	p <
Grade 1 (N=12)					
1. The student will demonstrate an ability to work with others on a common task in science, social studies, art and music.	0	11	1	3.015	.01
2. The students will learn songs in English and Spanish.	0	11	1	3.015	.01
3. The students will compare and contrast the Puerto Rican, Cuban and mainland cultures.	0	10	13	2.846	.01
Grade 2 (N=18)					
1. The student will demonstrate an ability to work with others on a common task in science, social studies, art and music.	0	11	7	3.015	.01
2. The students will learn songs in English and Spanish.	0	18	0	4.007	.001

Table 18 (cont.)

Objectives	English Dominant				
	Pre > Post	Pre < Post	Pre=Post	z	p <
3. The students will compare and contrast the Puerto Rican, Cuban and mainland cultures.	0	17	1	3.881	.001
Grade 3 (N=11)					
1. The student will demonstrate an ability to work with others on a common task in science, social studies, art and music.	0	9	2	2.666	.01
2. The students will learn songs in English and Spanish.	0	11	0	3.015	.01
3. The students will compare and contrast the Puerto Rican, Cuban and mainland cultures.	0	11	0	3.015	.01

Product Objectives 1-E-1.0, 2-E-1.0, 3-E-1.0:

English dominant students in grades 1-3 will demonstrate increased proficiency in reading in English as measured by the total reading subtest from the appropriate level of the Metropolitan Achievement Tests, 1970 Edition. Minimum acceptable level of performance is a statistically significant gain (.05 level) in the mean standard score resulting in a 10 point gain in percentile ranks for grade 1 students and an average gain of one grade equivalent month for each month in the program for grade 2 and 3 students.

Evaluation

Assessment of reading in English was based on an analysis of the pre-post scores obtained on the reading subtests from the 1970 edition of the Metropolitan Achievement Tests. Three levels of the test were used on a pre-post basis: grade 1, Primer - Primary I; grade 2, Primary I-Primary II; grade 3, Primary II - Primary II. The Total Reading subtest is obtained by combining the results of two separate subtests--Word Knowledge, which measures the "extent of pupils' reading vocabulary," and Reading, which measures the "pupils' comprehension of written material." At the Primer level, however, the skills measured by the separate subtest at the other levels are included in the Total Reading subtest. Raw scores on the Metropolitan can be converted to standard scores, grade equivalents, percentiles and stanines except for the Primer level which does not provide grade equivalent scores. Standard scores on the Metropolitan within a single subtest area are directly comparable from level to level.

Students were administered the subtests in October and May. Raw scores were converted to standard scores which were then compared to the criteria

and analyzed using a t-test for correlated data. The results of the analyses are presented in Tables 19-22 and in Figures 6 and 7.

The data analysis for grade 1 students indicates that the criterion stated in the objective was attained. As a group, they increased their percentile ranking by 20 points (see Table 19) and the pre-post standard score mean difference was statistically significant at a probability level less than 0.011 (p .001) meaning that a mean difference of such a magnitude could occur by chance less than once out of every thousand times (Table 21). Furthermore, the data presented in Table 22 indicates that, as a group, the students were reading four months above their grade placement at the time of post-testing as measured by the Total Reading subtest from the Primary I battery of the Metropolitan Achievement Tests.

Students in grades 2 and 3 also attained the criterion level set in the objective. Both grades achieved an average monthly grade equivalent (G.E.) gain of at least one month for every month in the program. In addition the standard score mean differences were statistically significant. These findings are presented in Tables 20 and 21. The gain made by grade 3 students was quite dramatic as can be seen by an examination of data in Table 20. On the average, at the time of pretesting, they were six months below grade level, but at the time of post-testing they were two months above grade level--this means that they made a gain of one and one-half years in grade equivalent scores in a seven month period in their overall reading ability. The findings presented in Table 20 are also graphically presented in Figure 6.

Table 19

Raw Score and Standard Score Means and Percentile Ranks for Grade 1 English Dominant Students on the Total Reading Subtest from the Metropolitan Achievement Tests (N = 11)

Test Level	Testing Session	Raw Score $\bar{X}$	Raw Score S	Standard Score $\bar{X}$	Standard Score S	Percentile	Percentile Gain	Percentile Gain for Criterion
Primer	Pre	15.4	6.9	25.7	5.2	58	20	10
Primary 1	Post	57.8	21.9	45.5	12.1	78		

Table 20

Raw Score Means, Standard Score Means, Grade Equivalents, and Grade Placement for Grades 2-3 English Dominant Students on the Total Reading Subtest from the Metropolitan Achievement Tests

Grade	Test Level	Testing Session	RS X	SS X	Obtained G.E.	G.E. Difference (in Months)	Grade Placement	Grade Placement Difference (in Months)	Average G.E. Gain per Month (in Months)	Average G.E. Gain per Month for Criterion (in Months)
2 (N=14)	Primary I	Pre	55.9	44.4	2.1	7	2.1	7	1	1
	Primary II	Post	60.4	53.6	2.8		2.8			
3 (N=16)	Primary II	Pre	51.9	51.4	2.5	15	3.1	7	2.1	1
	Primary II	Post	75.1	65.4	4.0		3.8			

Table 21

Statistical Results Using Standard Scores on the Word Knowledge, Reading, and Total Reading Subtests from the Metropolitan Achievement Tests for English Dominant Students in Grades 1-3

Grade	Test Level	Testing Sessions	Word Knowledge $\bar{X}$	Word Knowledge S	Word Knowledge t	Reading $\bar{X}$	Reading S	Reading t	Total Reading $\bar{X}$	Total Reading S	Total Reading t
1 (N = 11)	Primer	Pre	-	-	-	-	-	-	25.7	5.2	5.058*
	Primary I	Post	47.8	12.9		47.1	15.1		45.5	12.1	
2 (N = 14)	Primary I	Pre	49.1	7.8	4.273*	43.4	5.9	7.906*	44.4	5.2	11.942*
	Primary II	Post	56.7	5.4		53.1	6.4		53.6	5.1	
3 (N = 16)	Primary II	Pre	52.9	7.2	6.983*	52.0	6.9	5.400*	51.4	6.1	7.266*
	Primary II	Post	68.8	10.5		62.4	6.0		65.4	8.8	

* $p < .001$

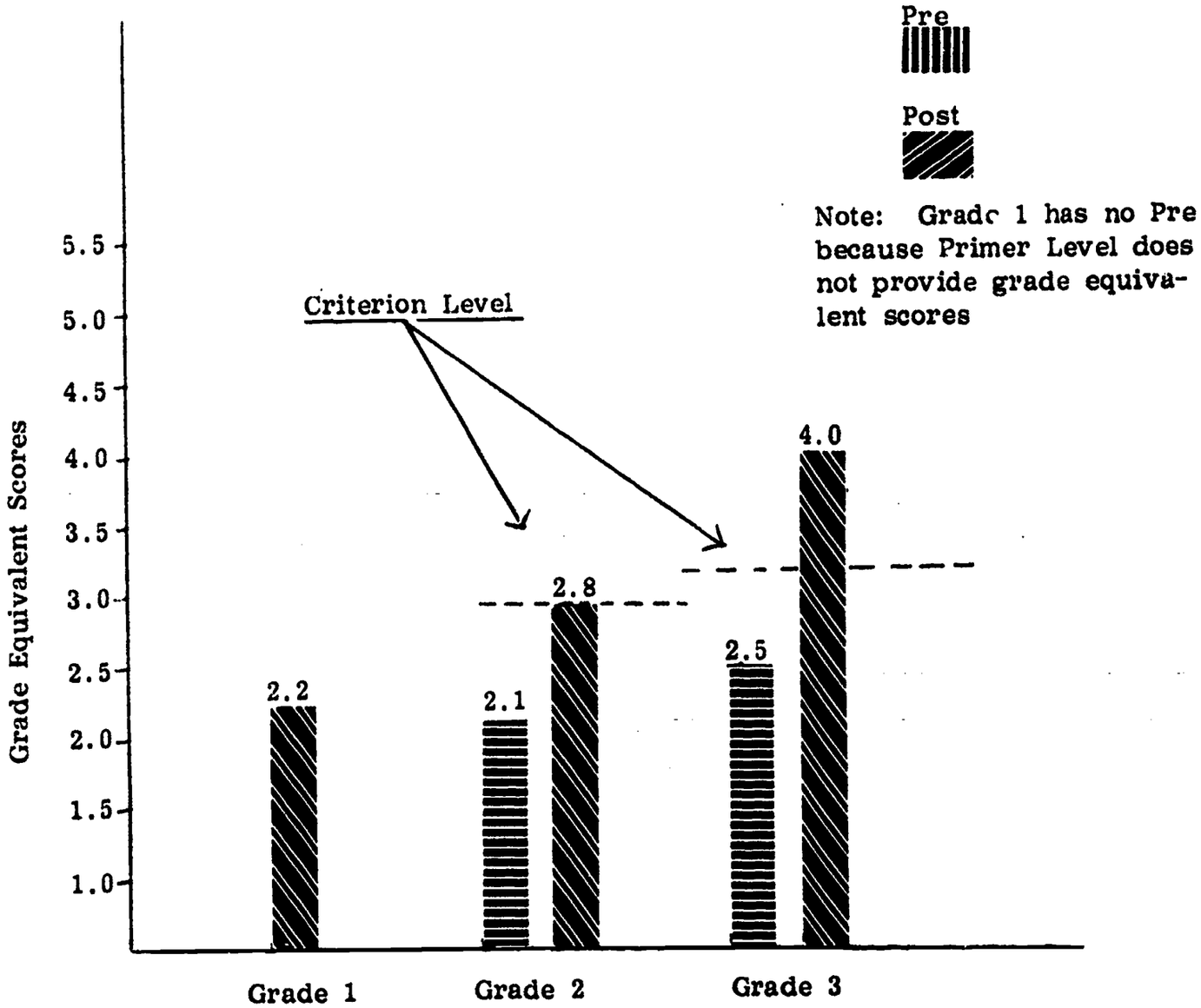

Figure 6: Comparison of Pre- Post-test Grade Equivalent Means (Post only for Grade 1) on the Total Reading Subtest for English Dominant Students, Grades 1 - 3

A summary of the posttest data is displayed in Table 22 for all three grade levels. The results show the actual grade placement of the students when they were administered the posttest and the grade levels obtained by the students on the posttests for the two reading subtests and the composite Total Reading subtest. These results are also graphically represented in Figure 7.

Product Objectives 1-E-2.0, 2-E-2.0, 3-E-2.0

> English dominant students in grades 1-3 will demonstrate increased proficiency in Spanish as a Second Language as measured by the Comprension del Lenguaje Oral. Minimum acceptable level of performance is a 50% increase in the raw score mean.

Evaluation

The 30 item Comprension del Lenguaje Oral was administered to English dominant students in grades 1-3 to obtain an estimate of their ability to understand words and short verbal expressions presented orally in Spanish. In administering the test, the directions were given in English. Each item required the student to mark one of four pictures that matched the Spanish stimulus word(s) in the sentence read in English by the teacher. The tests were given in October and May. Pre-post raw score means were computed and statistical significance determined through the t-test for correlated data. The results were compared to the stated criterion, and presented in Tables 23 and 24 and in Figure 8.

Table 22

Standard Score Means, Obtained Post-test Grade Equivalents, and Post-test Grade Placement on the Word Knowledge, Reading, and Total Reading Subtests from the Metropolitan Achievement Tests for English Dominant Students in Grades 1 - 3

Grade	Word Knowledge			Reading			Total Reading		
	Post $\bar{X}$	Obtained G.E.	Grade Placement	Post $\bar{X}$	Obtained G.E.	Grade Placement	Post $\bar{X}$	Obtained G.E.	Grade Placement
1	47.8	2.3	1.8	47.1	2.2	1.8	45.5	2.2	1.8
2	56.7	3.0	2.8	53.1	2.7	2.8	53.6	2.8	2.8
3	68.8	4.4	3.8	62.4	3.6	3.8	65.4	4.0	3.8

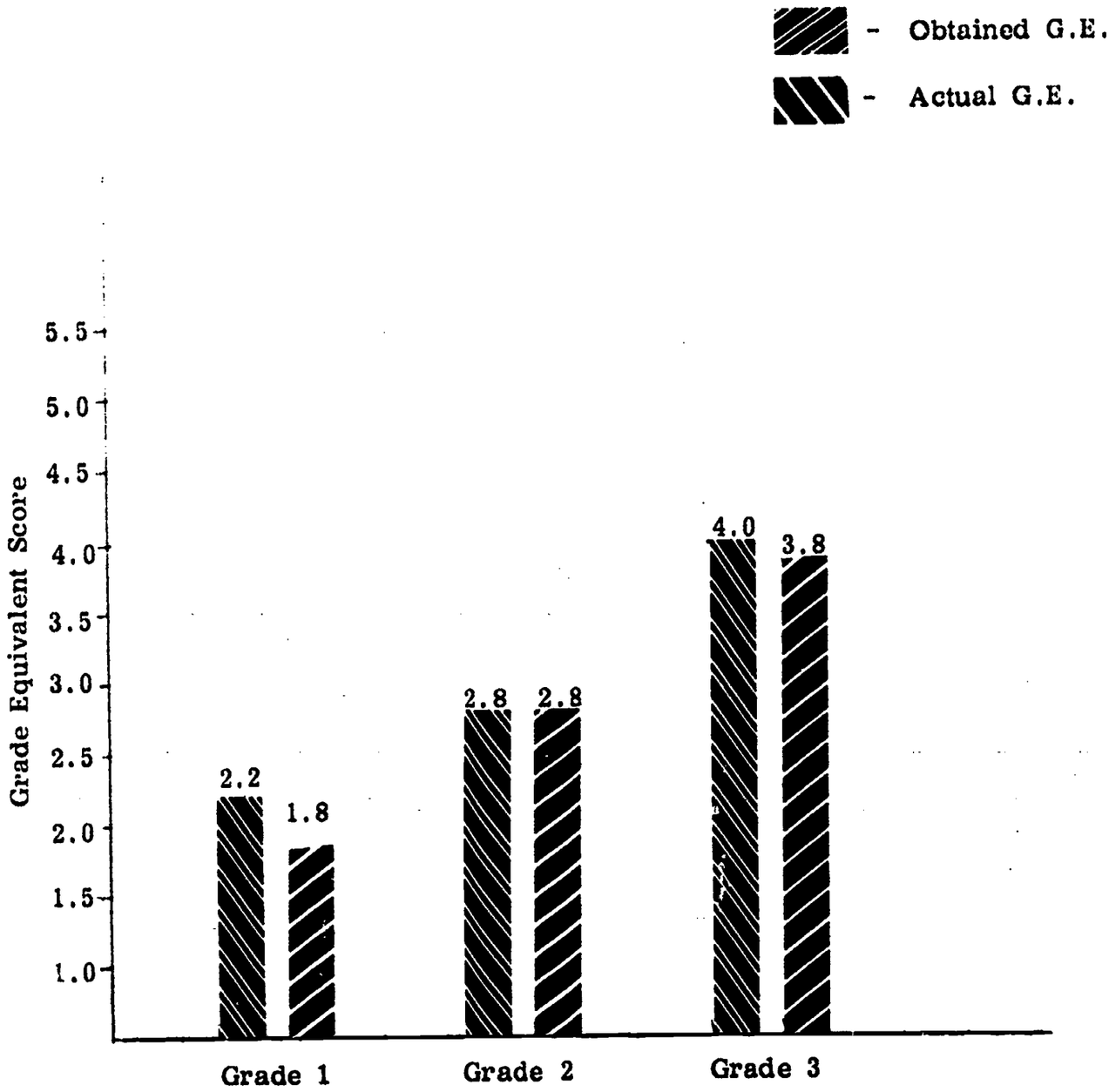

Figure 7: Comparison of Obtained Grade Equivalent Means (Post-test) and Actual Grade Placement at Time of Post-testing on the Total Reading Subtest for English Dominant Students, Grades 1 - 3

Table 23

Pre-Post-test Means on the Comprension del Lenguaje Oral for English Dominant Students in Grades 1-3

Grade	Pre-test $\bar{X}$	Post-test $\bar{X}$	Criterion* $\bar{X}$
1 (N = 11)	3.5	13.8	5.3
2 (N = 10)	17.4	22.1	26.1
3 (N = 10)	17.2	19.0	25.8

*Criterion $\bar{X}$ = Pre-test $\bar{X}$ + 1/2 Pre-test $\bar{X}$

In order to reach the criterion level established in the objective, students in each grade had to demonstrate an average gain of 50% using the pretest average score as the base. Inspection of Table 23 shows that only grade 1 students met the criterion. This was not difficult for students in the first grade, since an average increase of only two additional correct items would have been sufficient to reflect a 50% increase in the pretest mean. Initially, grade 2 and 3 students answered approximately 58% of the items correctly; the posttest means indicate approximately 74% of the items were answered correctly in grade 2 and 63% in grade 3. This reflects an approximate gain for grade 2 students of 17% and a 6% gain for grade 3 students. The results of the t-test for correlated data, which

are shown in Table 24, indicate that the achievement gains for grades 1 and 2 were significant, but not significant for grade 3. Figure 8 presents a graph of the pre-post results.

Table 24

Statistical Results of the Comprension del Lenguaje Oral for English Dominant Students in Grades 1 - 3

Grade	Testing Session	Raw Score $\bar{X}$	S	t
1 (N = 11)	Pre	3.5	3.1	7.692**
	Post	13.8	3.7	
2 (N = 10)	Pre	17.4	4.9	2.492*
	Post	22.1	4.1	
3 (N = 10)	Pre	17.2	3.6	1.369
	Post	19.0	9.4	

* $p < .05$
** $p < .001$

The test requires that students understand the Spanish for the following kinds of test tasks: single words, such as book, animal, teacher, and circle; short phrases, such as two pencils, little glass, and little brother; and longer phases, such as the thing that can give us light and little house were my dog

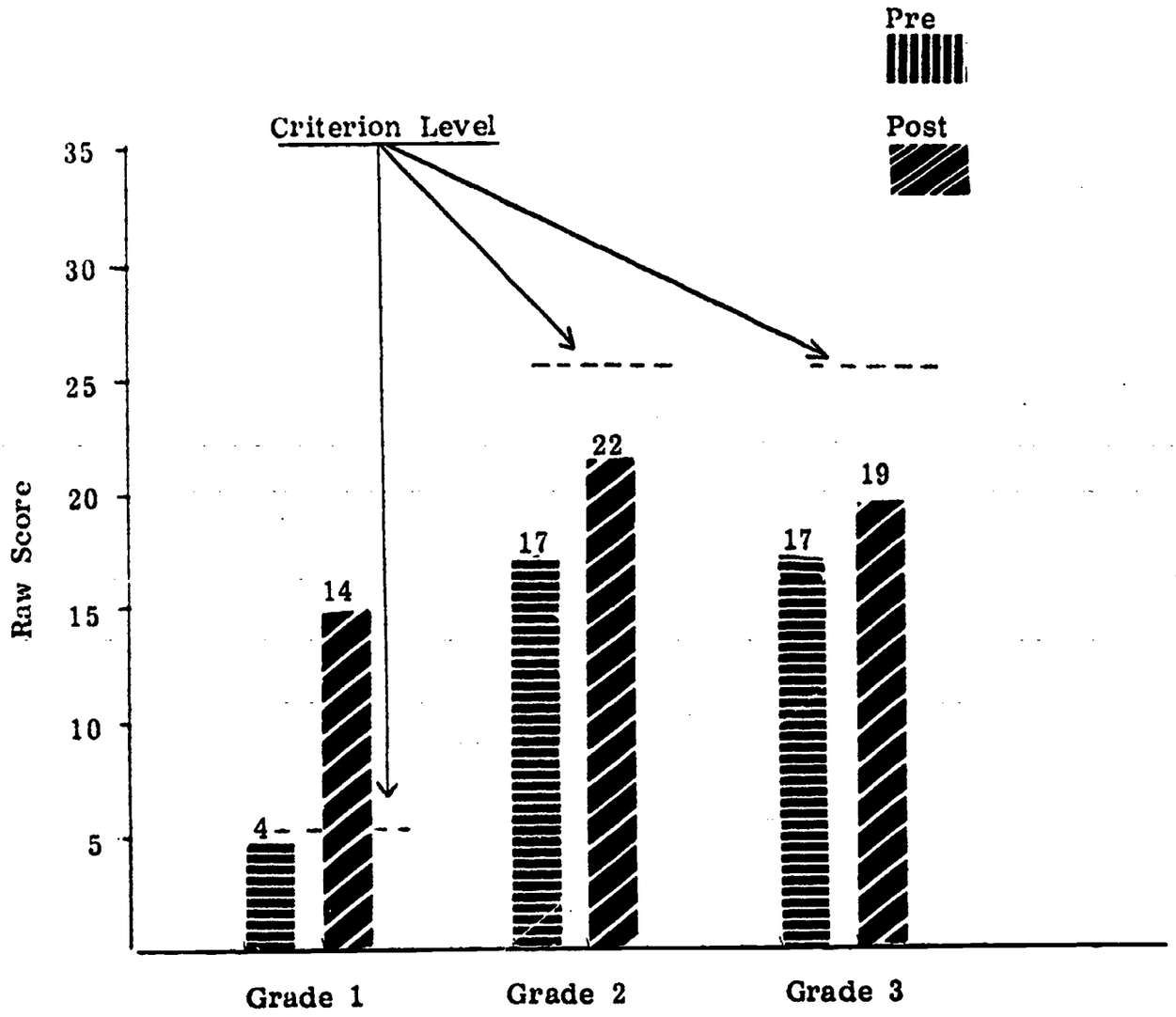

Figure 8: Pre- Post-test Raw Score Means on the Comprension del Lenguaje Oral for English Dominant Students in Grades 1 - 3

sleeps. An analysis of the items that were answered correctly by students in all three grades indicates that most of the single word items were the items answered correctly by the majority of students, particularly those in the second and third grades; that some of the students in grades 2 and 3 correctly answered some of the short phrase items; and that a few students in grades 2 and 3 correctly answered some of the long phrase items.

Product Objectives 1-E-3.0, 2-E-3.0, 3-E-3.0:

> English dominant students in grades 1-3 will demonstrate increased proficiency in language arts as measured by the Word Analysis subtest from an appropriate level of the Metropolitan Achievement Tests, 1970 edition. Minimum acceptable of performance is a statistically significant gain (.05 level) in the mean standard score resulting in a 10 point gain in percentile ranks for grade 1 students and an average gain of one grade equivalent month for each month in the program for grade 2 and 3 students.

Evaluation

The Word Analysis subtest (Listening for Sounds at the Primer Level) was administered to English speaking students to assess their language arts performance. This subtest measures the students' "knowledge of sound-letter relationships and skill in decoding." For each item, the student must "identify a dictated word from among several words with similar configurations and sound patterns." (Refer to the reading objectives 1-E, 2-E, and 3-E-1.0 for the levels of the Metropolitan used for pre-posttesting for grades 1-3.)

Obtained raw scores on this subtest were converted to standard scores and to percentiles (for grade 1 students) and standard scores and grade equiva-

lents (for grade 2 and 3 students). Tables 25-28 present the results of the analyses. Tables 25-26 present raw score means, standard score means, and the percentile equivalents (grade 1) and grade equivalents (grade 2 and 3) of the standard score means. Table 27 reports the results of the significance tests for correlated data; Table 28 shows where the average student was in grade equivalence, and where he/she should be at post-test time according to national norms. The results are graphically summarized in Figures 9 and 10.

Test results indicate that the criterion was attained at all three grade levels. Table 25 shows that grade 1 students surpassed their criterion by achieving a 20 point percentile gain; Table 26 shows that grade 2 and 3 students attained their criterion by achieving an average monthly grade equivalent gain of 1.7 and 2.1 months respectively; and Table 27 shows that the achievement gains the students made in their language arts ability were significant ($p<.001$) at all grade levels. A graph of the results given in Table 26 are presented in Figure 9. Furthermore, a closer scruting of Table 26 reveals that grade 2 students began one month below grade level (pre-test) and ended four months above (post-test) for a gain of 12 months growth in a seven month period, and that grade 3 students began (pre-test) three months below and ended five months above grade level during the same time interval. This represents an achievement gain of 1.2 years and 1.5 years in grade equivalent scores for grades 2 and 3, respectively, during a seven month (0.7 years) period. These results are striking.

Table 25

Raw Score and Standard Score Means and Percentile Ranks for Grade 1 English Dominant Students on the Word Analysis Subtest from the Metropolitan Achievement Tests (N=11)

Test Level	Testing Session	Raw Score $\bar{X}$	Standard Score $\bar{X}$	Percentile	Percentile Gain	Percentile Gain for Criterion
Primer	Pre	21.3	27.9	70	20	10
Primary I	Post	33.4	49.3	90		

Table 26

Raw Score Means, Standard Score Means, Grade Equivalents, and Grade Placement of Testing for Grade 2 and 3 English Dominant Students on the Word Analysis Subtest from the Metropolitan Achievement Tests

Grade	Test Level	Testing Session	RS $\bar{X}$	SS $\bar{X}$	Obtained G.E.	G.E. Difference (in Months)	Grade Placement	Grade Placement Difference (in Months)	Average G.E. Gain per Month (in Months)	Average G.E. Gain per Month for Criterion (in Months)
2 (N=14)	Primary I	Pre	31.8	41.9	2.0	12	2.1	7	1.7	1
	Primary II	Post	27.9	55.5	3.2		2.8			
3 (N=16)	Primary II	Pre	24.3	51.7	2.8	15	3.1	7	2.1	1
	Primary II	Post	32.1	63.9	4.3		3.8			

Table 27

Statistical Results Using Standard Scores on the Word Analysis Subtest from the Metropolitan Achievement Tests for English Dominant Students in Grades 1-3

Grade	Test Level	Testing Session	Standard Score $\bar{X}$	S	t
1 (N = 11)	Primer	Pre	27.9	4.7	6.611*
	Primary I	Post	49.3	11.5	
2 (N = 14)	Primary I	Pre	41.9	3.9	9.282*
	Primary II	Post	55.5	7.5	
3 (N = 16)	Primary II	Pre	51.7	8.2	7.806*
	Primary II	Post	63.9	6.9	

* $p < .001$

Table 28 summarizes the posttest results in terms of the obtained grade equivalents and the grade placement of the students at the time they were administered the post-tests. The results indicate that the students as a group in all grades were above grade level in their language arts ability. These findings are also presented in Figure 10.

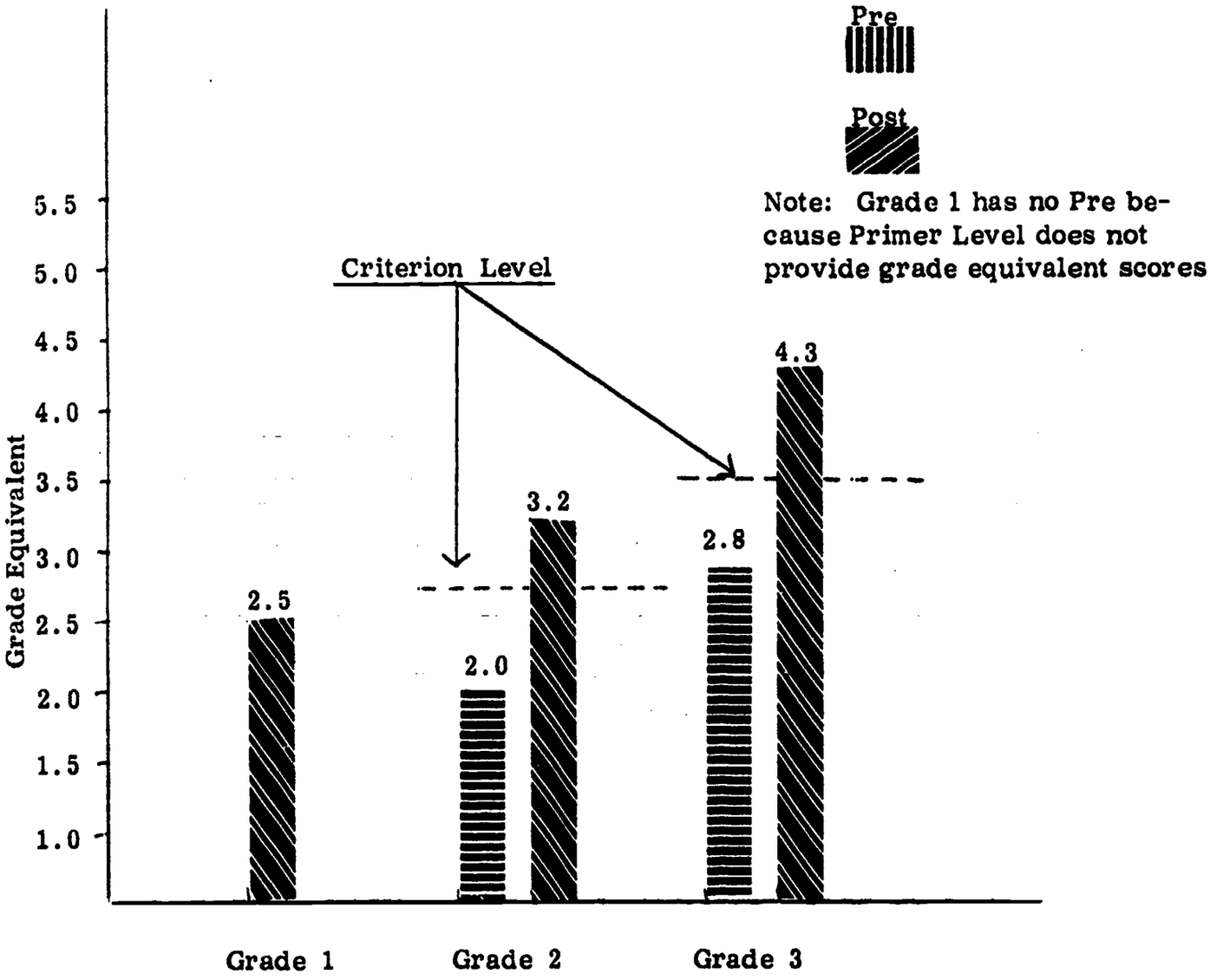

Figure 9: Comparison of Pre- Post-test Grade Equivalent Means (Post only for Grade 1) on the Word Analysis Subtest for English Dominant Students in Grades 1 - 3

Table 28

Post-test Standard Score Means, Obtained Grade Equivalents, and Actual Grade Placement on the Word Analysis Subtest from the Metropolitan Achievement Tests for English Dominant Students in Grades 1-3

Grade	Post-test $\bar{X}$	Obtained G.E.	Grade Placement
1	49.3	2.5	1.8
2	55.5	3.2	2.8
3	63.9	4.3	3.8

Product Objectives 1-E-4.0, 2-E-4.0, 3-E-4.0:

English dominant students in grades 1-3 will demonstrate increased proficiency in mathematics as measured by the mathematics subtest from the appropriate level of the Metropolitan Achievement Tests, 1970 Edition. Minimum acceptable level of performance is a statistically significant gain (.05 level) in the mean standard score resulting in a 10 point gain in percentile ranks for grade 1 students and an average gain of one grade equivalent month for each month in the program for grade 2 and 3 students.

Evaluation

The assessment of mathematics was based on an analysis of the pre-post scores obtained on the mathematics subtest from the Metropolitan Achievement Tests. Three levels of the Metropolitan were administered--Primer, Primary I, and Primary II. The Primer (the math subtest is named "numbers" on this level)

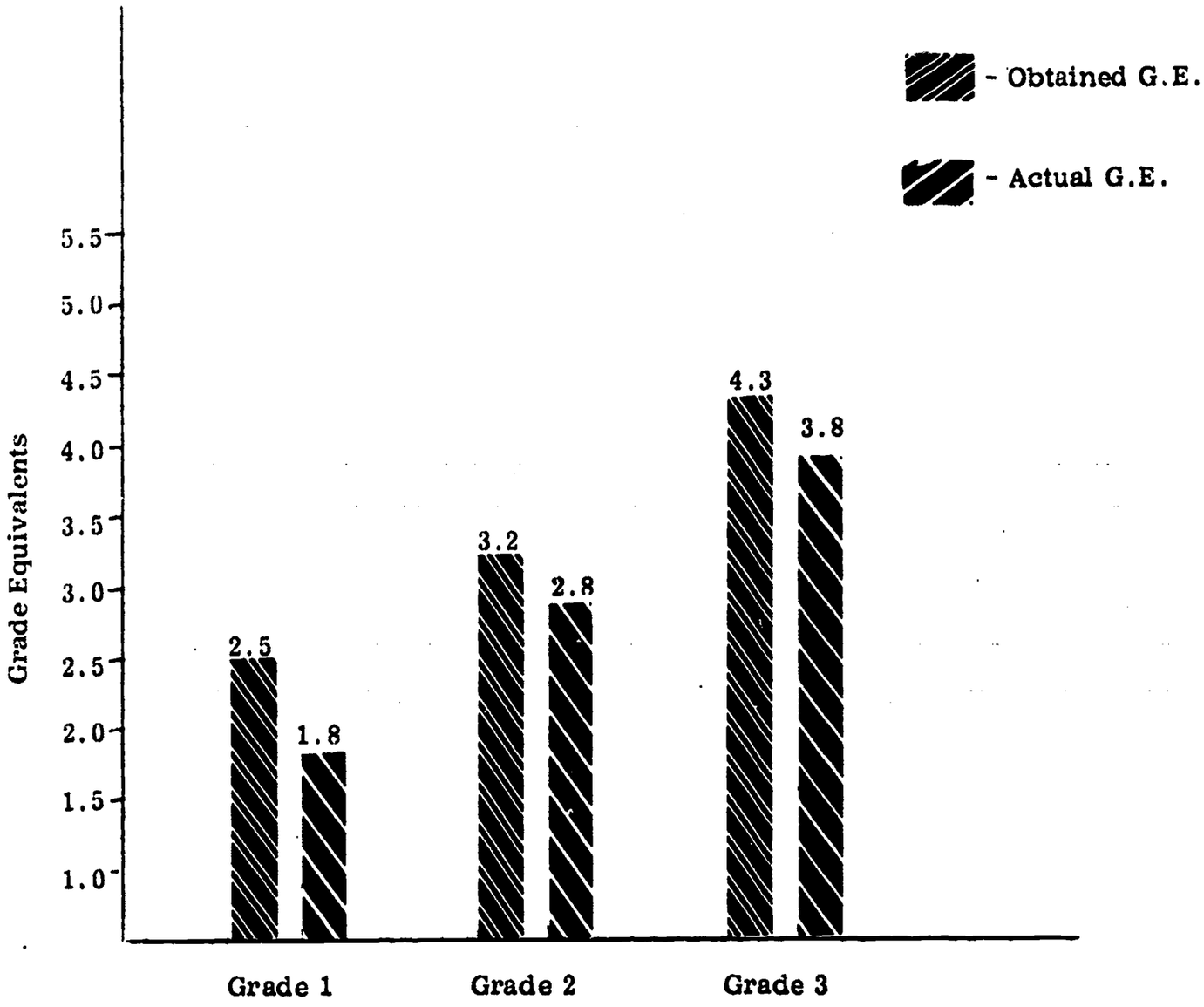

Figure 10: Comparison of Obtained Grade Equivalent Means (Post-test) and Actual Grade Placement at Time of Post-testing on the Word Analysis Subtest for English Dominant Students in Grades 1 - 3

and Primary I provide only a Total Mathematics score which is based on both concepts and computation. At the Primary II level, however, concepts, computation, as well as problem solving are measured by separate subtests, and combining the scores of the three subtests provides the Total Mathematics score. Generally, computation and concepts measure the students' ability to add and subtract one- and two-digit numbers and their understanding of basic mathematical principles; problem solving items measure their ability to apply knowledge in solving numerical problems. Raw scores can be converted to standard scores, percentiles, stanines, and grade equivalents. (The Primer level, however, does not provide grade equivalents.)

Students were administered the mathematics subtest(s) in October and May providing approximately a seven-month period between testing sessions. Standard score means were computed and converted to percentile and grade equivalent scores. The data were also analyzed for statistical significance using a t-test for correlated data. The results of the analyses are summarized in Tables 29-32 and in Figures 11-12. Tables 29 and 30 present the raw score means and their comparable standard score means, percentile ranks, and grade equivalents. Table 31 reports the t-test results; Table 32 compares the groups' obtained grade levels with their expected grade level at the time of post-testing using national norms.

Examination of Tables 29-31 show that the comparison of the results of the mathematics subtest to the stated criterion concluded in the finding that the cri-

Table 29

Raw Score and Standard Score Means and Percentile Rank for Grade 1 English Dominant Students on the Total Mathematics Subtest from the Metropolitan Achievement Tests (N = 11)

Test Level	Testing Session	Raw Score $\bar{X}$	Standard Score $\bar{X}$	Percentile	Percentile Gain	Percentile Gain for Criterion
Primer	Pre	12.4	22.6	52	10	10
Primary I	Post	41.0	46.8	62		

Table 30

Raw Score Means, Standard Score Means, Grade Equivalents, and Grade Placement for Grade 2 and 3 English Dominant Students on the Total Mathematics Subtest from the Metropolitan Achievement Tests

Grade	Test Level	Testing Session	RS $\bar{X}$	SS $\bar{X}$	Obtained G.E.	G.E. Difference (in Months)	Grade Placement	Grade Placement Difference (in Months)	Average G.E. Gain per Month (in Months)	Average G.E. Gain per Month for Criterion (in Months)
2 (N=15)	Primary I	Pre	44.1	48.2	2.1	8	2.1	7	1.1	1
	Primary II	Post	69.8	59.1	2.9		2.8			
3 (N=16)	Primary II	Pre	56.9	52.8	2.4	10	3.1	7	1.4	1
	Primary II	Post	79.9	66.3	3.4		3.8			

Table 31

Statistical Results Using Standard Scores on the Math Computation, Concepts, Problem Solving, and Total Mathematics Subtests from the Metropolitan Achievement Tests for English Dominant Students in Grades 1 - 3

Grade	Test Level	Testing Session	Computation** $\bar{X}$	S	t	Concepts** $\bar{X}$	S	t	Problem Solving** $\bar{X}$	S	t	Total Math $\bar{X}$	S	t
1 (N=11)	Primer	Pre	-	-		-	-		-	-		22.6	2.9	5.944*
	Primary I	Post	-	-		-	-		-	-		46.8	15.0	
2 (N=15)	Primary I	Pre	-	-		-	-		-	-		48.2	9.7	5.727*
	Primary II	Post	54.1	9.4		60.0	11.1		58.5	10.8		59.1	10.1	
3 (N=16)	Primary II	Pre	47.1	10.7	7.433*	51.7	8.0	6.339*	54.0	7.6	4.880*	52.8	7.9	9.037*
	Primary II	Post	62.9	10.0		63.6	7.8		64.3	10.7		66.3	9.5	

* $p < .001$

** These areas are not presented as separate subtests in the Primer and Primary I levels.

terion was met by all grade levels, and that all gains were statistically significant. The data presented in Table 30 indicate that grade 2 students made an average monthly grade equivalent gain of 1.1 months for every month in the program, i.e., the period between testing sessions; and that the gain for grade 3 students was 1.4 months for every month in the program. The column headed "Total Mathematics" in Table 32, shows that although the gain made by grade 2 students in mathematics was large enough to lift them one month above grade placement at the time of post-testing, the one year's gain in a period of seven months for grade 3 students still left them four months below grade level. The table shows that the grade 1 students are also above grade level in their mathematical ability. These findings are also presented in Figures 11 and 12.

Table 32

Post-test Standard Score Means, Obtained Grade Equivalents, and Actual Grade Placement on the Math Computation, Concepts, Problem Solving, and Total Mathematics Subtests from the Metropolitan Achievement Tests for English Dominant Students in Grades 1-3

	Computation			Concepts			Problem Solving			Total Mathematics		
Grade	Post $\bar{X}$	Post G.E.	Grade Placement	Post $\bar{X}$	Post G.E.	Grade Placement	Post $\bar{X}$	Post G.E.	Grade Equivalent	Post $\bar{X}$	Post G.E.	Grade Placement
1	-	-	-	-	-	-	-	-	-	46.8	2.1	1.8
2	54.1	2.9	2.8	60.0	3.2	2.8	58.5	3.0	2.8	59.1	2.9	2.8
3	62.9	3.6	3.8	63.6	3.5	3.8	64.3	3.3	3.8	66.3	3.4	3.8

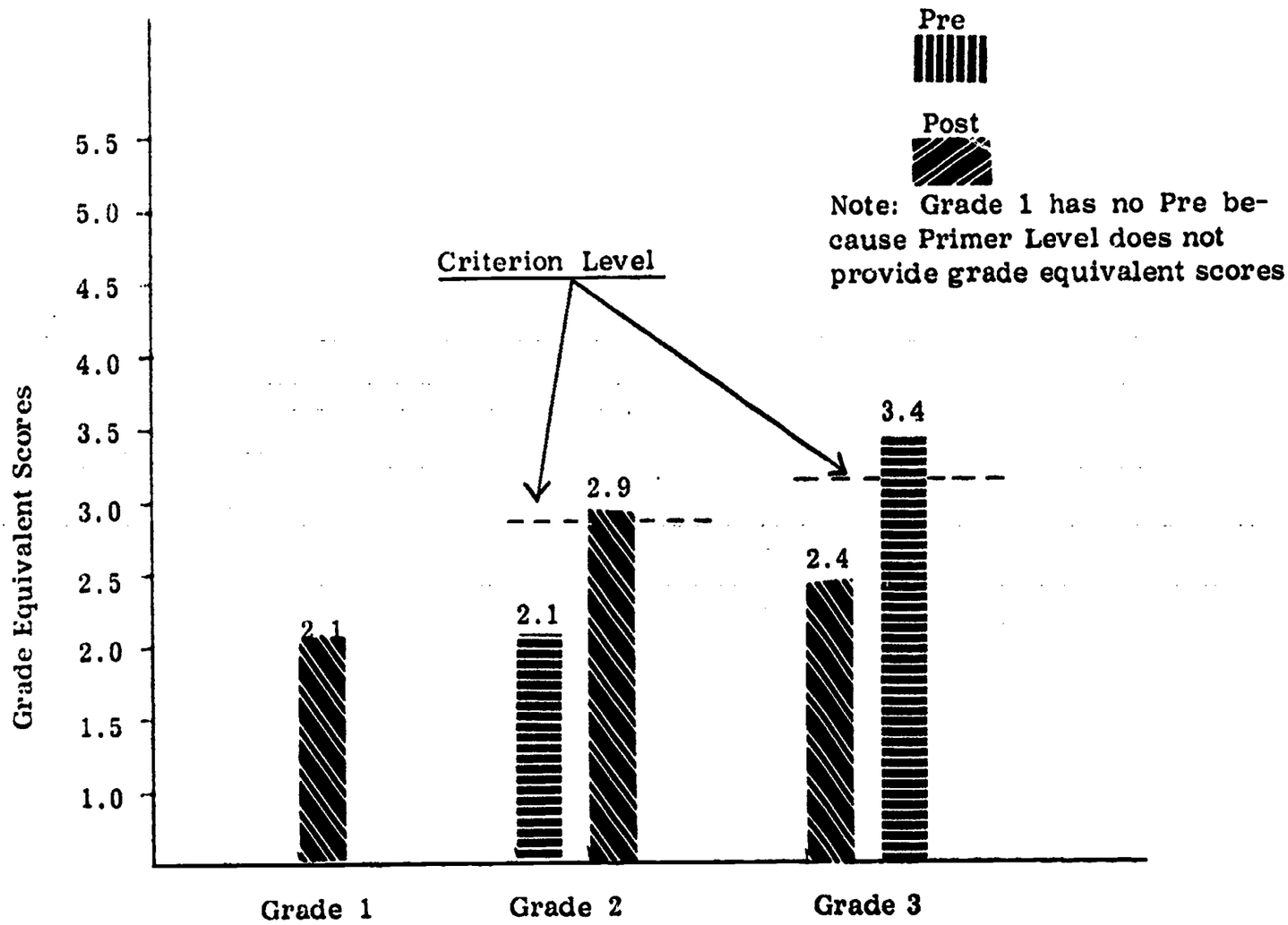

Figure 11: Comparison of Pre- Post-test Grade Equivalent Means (Post only for Grade 1) on the Total Mathematics Subtest for English Dominant Students, Grades 1 - 3

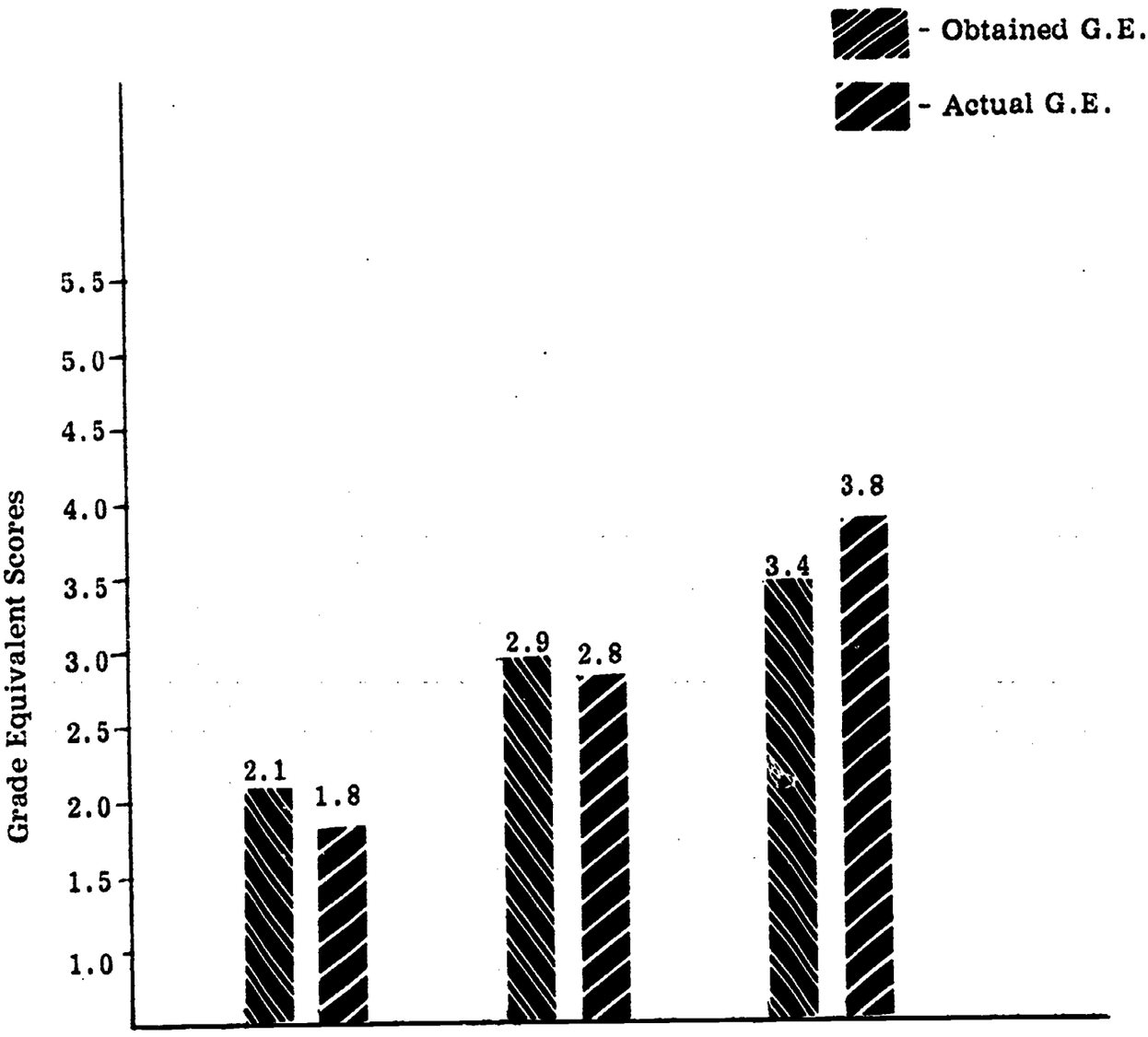

Figure 12: Comparison of Obtained Grade Equivalent Means (Post-test) and Actual Grade Placement at Time of Post-testing on the Total Mathematics Subtest for English Dominant Students, Grades 1 - 3

MANAGEMENT COMPONENT

Introduction

The second year of program operation was the first year that objectives were specified for the management of the program. The objectives relate to the areas of staff development, parent-community involvement, and dissemination of program information. The activities associated with the objectives were under the supervision of the program director.

Evaluation by Objectives

Objective M-1.0

The Project Director will schedule a week long pre-service workshop during August, 1973 for all staff members.

The purpose of the workshop will be for examination and discussion of a new reading program, discussion of the overall project, and for the distribution of program material.

Evaluation

The pre-service all day, week-long workshop was held as scheduled from August 20 through August 24, 1973. In attendance were all of the Title VII teachers and aides. Also attending the workshops as invited guests were the TBE (Transitional Bilingual Education) teachers in the public and private schools in the city. Three days of the workshop were devoted to presentation, discussion, and direct participant involvement in a method of teaching reading in Spanish called Leocolor. The leader for this part of the workshop was a consultant from

Educational Solutions. Another day was spent in reviewing and discussing program materials. Additionally, curriculum units and educational games developed by the teachers were demonstrated and discussed, and a presentation of ESL (English as a Second Language) methods was given by the program's ESL teacher. On the final workshop day, the evaluator discussed evaluation in general and the evaluation of the bilingual program in particular; the rest of the day was spent in distributing materials to the teachers and preparing for the first day of school.

A description of the workshop and a record of staff attendance was in the program's files. This objective was accomplished.

In addition to the workshop discussed above, the program offered another workshop for staff members interested in the Words in Color method of teaching English reading. The Workshop was held from August 27 through August 31 at the Educational Solutions' Cambridge office. Four staff members attended this workshop.

Objective M-2.0

> The Project will schedule at least four staff development in-service programs for all staff members during the school year. All necessary arrangements will be made by the Director. The in-service program may include conferences, workshops, or seminars on bilingual-bicultural education or English as a Second Language sponsored by other agencies considered relevant by the Director.

Evaluation

A check of the project files disclosed a description and date for each in-service as well as the attendance record of each staff member. The records show

that twelve in-service programs were held this year from November, 1973 through May, 1974. The list of programs are presented in Table 33.

In May, the teachers completed a questionnaire designed to elicit their opinions concerning the in-service program. In general the teachers indicated that the overall year-long program was well planned and organized and had increased their growth professionally. (See the Staff and In-service section of Program Operation for a more thorough discussion of the results.) Responses to specific items on the questionnaire indicate that the highest number of in-service sessions attended by any one teacher was nine and the lowest was four. The data was inconclusive concerning which sessions the teachers thought were the most and least worthwhile in terms of content and presentation: sessions thought to be worthwhile and effective by some teachers were not by others, and vice versa.

Objective M-3.0

> The Project Director will schedule an average of one staff meeting per month. These meetings will be held to encourage open discussion of such topics as program problems, curriculum, and materials.

Evaluation

Twelve staff meetings were held from September through June. The meetings were held on the following dates: September 27; October 4, 18, 25; November 29; January 31; February 7; March 7; April 25; May 23; and June 21. The meetings involved the discussion of various areas generally related to curriculum, materials, or program (or individual) problems. Examples of the various areas dis-

Table 33

Schedule of the Project's 1973-74 In-Service Program

Date	Topic	Consultant
Nov. 1, 1973	English as a Second Language	Nyman, ESL Specialist, Chelsea Bilingual Program
Nov. 8, 1973	Words in Color	Dunning, Educational Solutions
Nov. 15, 1973	Audio-Visual Materials for Spanish Language Arts	Perez, Boston Bilingual Supervisor
Nov. 29, 1973	Leocolor	Bennett, Educational Solutions
Dec. 6, 1973	Social Studies: Puerto Rico and Latin America	Martin/Kanovitz, Bilingual Teachers, Boston School System
Dec. 11, 1973	Science Projects	Zubrowski, Children's Museum
Jan. 24, 1974	Behavioral Observation in the Classroom	Ochs, Massachusetts State Dept. of Education
Feb. 14, 1974	Evaluation Design	Classon, Bernard Cohen Associates
Feb. 27, 1974	Leocolor Workshop	Bennett, Educational Solutions
Mar. 21, 1974	Overhead Projector in the Classroom	Goldberg, Boston School for the Deaf
Apr. 10, 1974	New Spanish Materials	Goodman, Spanish Book Corporation of America: Santillana Publishing Company
May 9, 1974	ESL and the Advanced Child	Nyman, ESL Specialist, Chelsea Bilingual Program

cussed were: the previous year's evaluation report, post-testing procedures, team teaching, special learning problems, introduction of more SSL (Spanish as a Second Language) into the curriculum, ways of teaching math bilingually, open versus traditional classroom structure, and desirable characteristics in a teacher aide.

The description, date, and attendance of each staff meeting was in the program files.

Objective M-4.0

> The Project Director will re-establish a Parent Advisory Council by November, 1973. The Council will include parent and community representatives from the Spanish and English sectors of the community. Community representatives will be appointed and parent representatives will be selected from a volunteer list by the Director. The community will be informed of the intent to form the Council by any of the following means: radio and newspaper announcements, letter, and personal contact.

Evaluation

The program director included all parents as automatic members of the Parent Advisory Council (PAC). PAC membership, using this approach, numbered approximately 100 families (some parents had more than one child in the program). The community-at-large, as well as the parents, were informed of the intent to hold the first PAC meeting on October 4, 1973 by newspaper (October 1 edition of the Chelsea Record) and by personal contact. One person from the community and one from the private educational sector volunteered as a result of these methods. They were subsequently appointed as members by the director.

In addition, parents received two letters in their native language (from the director) informing them of the proposed October 4 meeting. One letter was sent through the mail one week in advance of the meeting and the other was carried home by the students a few days before the meeting. The meeting was held as scheduled and dealt with organization and planning. At this meeting it was decided to form a 14 member executive board including a chairman and a secretary. The board would be elected at the next meeting on November 15, 1973. The November meeting was held and the executive board elected as scheduled. The board was comprised of five Spanish speaking parents and nine English speaking parents. The chairman and secretary were both English speaking.

Objective M-5.0:

> The Parent Advisory Council will meet monthly. The Director will be responsible for notifying each member of each monthly meeting one week ahead of time by letter. Parents will be invited to each meeting by letters sent home by the students. The letters will be in the dominant language of the parent.

Evaluation

During the eight month period between October, 1973 and May, 1974 the PAC met ten times. The dates of the meetings were as follows: October 4, November 15, December 5, January 9 and 17, February 16 and 27, April 25, and May 3 and 7. Discussions at these meetings were varied and included such topics as increasing PAC attendance, the previous year's program, classroom visitation, sign-off of next year's proposal (1974-75), the program's curriculum, and promoting better communication between school and home.

PAC members were notified of each meeting by an announcement published in the local newspaper one day prior to the meeting. Furthermore, parents were notified by letter written in their dominant language one week ahead of each meeting and by notices, also in their dominant language, sent home by their children 2-3 days prior to each meeting.

Additional data concerning the PAC was obtained by a questionnaire given to PAC members attending the April 25 meeting. There were 18 members present, which was the average attendance for meetings, but only nine completed the questionnaire. The following discussion of the results is in terms of the sample of members who completed the instrument and are not meant to be generalized to the entire PAC.

The majority of respondents felt that the PAC meetings were well organized, worthwhile, and conveniently scheduled, but that meetings should be held more often. All but one of them thought that the Council had been successful in involving more parents in the program and that they would like to continue as members next year. They were equally divided, however, on whether or not the attendance was good at the meetings they attended. As for the impact of the Council on local school administrators, the majority of the respondents were uncertain of its influence.

Concerning the bilingual program, all respondents indicated that the program was more valuable than most people realized, that they understood the objectives of the program, and that they could visit the bilingual classrooms if they desired.

They also offered the following comments or suggestions for improving the PAC: "like to see more teachers attending," "schedule a time limit for discussion on each item, so that too much time isn't given to one item--and to keep meeting moving," "agenda be sent out with notice of meeting so that ideas, thoughts, and suggestions could be formulated before meeting."

Objective M-6.0

Parents will actively participate in the program. This will be demonstrated by

1. 10% attending PTA or PAC meetings;
2. 10% visiting classrooms;
3. 15% go along on the field trips.

Parental participation will be solicited by letter and personal contact by staff members and the Director.

Evaluation

All parents, i.e., families, were members of the PAC and as such were notified of PAC meetings by the methods previously described. Parents were also notified of all field trips by notices sent home by the students, and were requested to contact the teacher or call the Title VII office if they wished to serve as field trip monitors.

Using the figure of 100 families as comprising the PAC membership, approximately 17 is the average number of parents represented in each of six bilingual classrooms. This was the basis for determining the percentages specified in the objective to demonstrate parental participation.

For any one of the ten PAC meetings, the lowest and highest numbers of members (parents) in attendance were 13 and 27 respectively; the average number in attendance for the ten meetings was 17. An addition, the school system conducted an Open House (October 22-23), and four PTA meetings (October 29, December 17, March 25, and May 10) which included the bilingual classrooms. No attendance record was kept of the bilingual parents' participation in these meetings. Nevertheless, the first of the three criteria was met.

The files indicate that only three parents visited the classrooms during the year. Teachers did maintain home contact by sending occasional letters to parents on student progress. Also, many parents accompanied their children to and from school and, in the process, visited the teacher to inquire about their child. The information in the files, however, indicates that the second criterion was not achieved.

The program conducted seven field trips to the following sites: October 30, Salem Witch House, second grades only; November 6, Boston International Institute, all grades; December 13, Children's Museum, all grades; February 5, Tour of Chelsea Police Station, all grades; February 6, New England Aquarium, first grades only; May 1, Boston City Hall and State House, second grades only. The record of the field trips indicates that an average of five parents per class went on each trip, e.g., second grades means two classes, therefore, ten parents and all grades means six classes and 30 parents. The data indicated that the third criterion was met. Therefore, since two of the three criteria were met, the objective was partially accomplished.

Objective M-7.0

The Project Director will periodically disseminate program information. This will be demonstrated by at least three articles in the Chelsea Record newspaper or radio station broadcasts.

Evaluation

The project director disseminated program information to the community-at-large by having eight articles published in the Chelsea Record, the local newspaper. The publication dates were as follows: September 11; February 12, 13, 15 and 19; March 20; May 30; and June 2. Some of the topics covered were: the pre-service program, Bilingual Education Week in Chelsea, the teacher-aide training program conducted by the materials specialist, the program's bilingual exhibit at the Chelsea library, and the Boston City Hall and State House field trip experience.

Copies of these articles are in the program files.

Objective M-8.0

The Project Director and/or Material Specialist will visit at least two operational bilingual-bicultural programs. These visits will be selected from on-going programs in the following cities: Boston, Fall River, Holyoke, New Bedford, Springfield, and Lawrence.

Evaluation

This objective was accomplished. The director or the materials specialist made visits to the Lawrence and Boston Title VII bilingual programs--two of the cities stated in the objective. Moreover, the materials specialist and the ESL

specialist visited the TBE (Transitional Bilingual Education) program in Worcester. The dates and sites are listed below.

April 9, 1974: director and materials specialist visited the Lawrence Title VII program--observed the bilingual classrooms--discussed curriculum materials, in-service, and the sharing of materials with Lawrence's director and curriculum specialist;

April 23, 1974: director and materials specialist visited the Boston Title VII program--discussed all aspects of the program with Boston's director;

May 9, 1974: materials and ESL specialists visited the TBE program at the Adams School in Worcester--observed the TBE classrooms--discussed with the director the JILAP individualized ESL method that is used by the program.

Objective M-9.0

The Project Director and/or Material Specialist will attend at least three conferences or institutes on bilingual-bicultural education. These conferences or institutes may be local, regional, or national.

Evaluation

The program director or materials specialist, accompanied on two occasions by other program personnel, attended six conferences--two were national in scope and four were regional. Thus, this objective was achieved. The dates, conferences, and attending program personnel are named below.

November 8, 1973: Conference on Testing and Evaluation in Bilingual Programs--sponsored by the Bilingual Bureau, Massachusetts Department of Education--attended by the director;

January, 1974: Hispanic Day Institute held at the Boston State House--sponsored by the Massachusetts Concilio Hispano--attended by the director and community liaison specialist;

March 4-11, 1974: National TESOL Conference in Denver, Colorado--sponsored by TESOL--attended by the director;

April 17, 1974: Conference on Ethnicity in New England at the Boston Architectural Center--sponsored by many different organizations--attended by the director and materials specialist;

May 12-18, 1974: International Conference on Bilingual-Bicultural Education at New York City--sponsored jointly by the Office of Bilingual Education, New York city; Bilingual Education Unit, N.Y. State Department of Education; Division of Bilingual Education, U.S.O.E.--attended by the materials specialist.

Objective M-10.0

The Project Director and staff members will recruit more English dominant students into the program using one or more of the following approaches:

1. speaking to prespective students individually and in groups;
2. informing the community through the audio-visual media;
3. addressing parents in PTA meetings;
4. speaking at student assemblies.

Evaluation

Program administrators used four methods in an attempt to attract more English dominant students to the program--one of which was specifically mentioned in the objective. Their methods slightly raised the percentage of Anglo participants over last year's Anglo participants by 2%--from 39% in 1972-73 to 41% in 1973-74. This indicates the continuing need for selling the program to the English speaking parents residing in the target area, i.e., the school districts served by the Williams and Shurtleff schools.

The following methods used to recruit English speaking students were gleaned from the program files and explained through a discussion with the director. Names of prospective candidates were requested and obtained from the Assistant Masters of each school. Letters explaining the program were sent to the parents of the candidates with follow-up telephone calls. Secondly, the program administrator selected prospective candidates from the roster of in-coming students at both schools. This was followed by letters, fully describing the program, sent to the parents. Thirdly, the PAC members disseminated program information to their friends and acquaintances. Lastly, the newspaper articles were used as a means of attracting prospective students, particularly the articles appearing in the September 11, 1973 and February 15, 1974 editions of the Chelsea Record. These two articles contained specific information about the program and requested those interested to write or call the Title VII office.

SUMMARY AND RECOMMENDATIONS

The Chelsea Title VII Project operated very smoothly during its second operational year especially considering that the year began with a new director and that a new materials specialist was hired in the middle of the year. A review of Table 34, which summarizes the accomplishment of the product objectives, indicates that a substantial percentage (84%) of the 37 objectives were accomplished as stated, and that one objective (3%) was partially accomplished. Only 13% of the objectives were judged to be not accomplished. The following narrative presents a summary of the program's accomplishments by component.

Instructional

Instructional objectives were defined for selected content areas: reading, English and Spanish as a Second Language (ESL and SSL), language arts, and mathematics. Spanish dominant students at all grade levels demonstrated significant gains in their ability to read in Spanish, and first grade students in their skill acquisition of English as a Second Language. The Prueba de Lectura and the English Oral Productive Test were used to measure these areas. Results of the Prueba de Matematica indicate that first and second Spanish dominant students exhibited significant gains in mathematics. Spanish dominant students demonstrated increased proficiency in Spanish Language Arts, and both English and Spanish dominant students improved their performance on Integrated Language Arts objectives during the school year; both these skill areas were assessed by the teachers' rating of students' performance of behavioral objectives on Objectives Checklist Rating Scales.

Table 34

Summary of Degree of Accomplishment of Program Objectives

Language Dominance	Content Area	Accomplished	Objectives Partially Accomplished	Not Accomplished
Spanish	Reading	1-S-1.0 2-S-1.0 3-S-1.0		
	ESL	1-S-2.0		2-S-2.0 3-S-2.0
	Language Arts	1-S-3.0 2-S-3.0 3-S-3.0		
	Mathematics	1-S-4.0 2-S-4.0		3-S-4.0
Spanish & English	Integrated Language Arts	1-S,E-1.0 2-S,E-2.0 3-S,E-3.0		
English	Reading	1-E-1.0 2-E-1.0 3-E-1.0		
	SSL	1-E-2.0		2-E-2.0 3-E-2.0
	Language Arts	1-E-3.0 2-E-3.0 3-E-3.0		
	Mathematics	1-E-4.0 2-E-4.0 3-E-4.0		

Table 34 (cont.)

Language Dominance	Content Area	Objectives Accomplished	Objectives Partially Accomplished	Objectives Not Accomplished
	Management Objectives	M-1.0		
		M-2.0		
		M-3.0		
		M-4.0		
		M-5.0		
			M-6.0	
		M-7.0		
		M-8.0		
		M-9.0		
		M-10.0		

The English dominant students at all grade levels made significant gains in reading, mathematics, and in language arts. Appropriate subtests from the Metropolitan Achievement Tests were administered to assess those areas. The Comprension del Lenguaje Oral was administered to assess the English dominant students' second language ability (Spanish). First grade students successfully achieved the objective; students in the other two grade levels, however, did not.

Management

Nine of the ten management objectives were accomplished; one objective, which related to parental involvement, was partially accomplished. The objectives that were accomplished pertained to pre- and in-service programs, staff meetings, recruitment of English dominant students, and the establishment and involvement

of the Advisory Council. Other objectives that were accomplished were concerned with program dissemination, visiting other bilingual programs, and attending conferences related to bilingual education.

Recommendations

The evaluators offer the following recommendations for improving program operation during 1974-75:

1. In hiring new teachers, more attention should be given to their second language ability.

2. Hire more native speaking Spanish teachers.

3. Bi-weekly staff meetings should be considered.

4. The quality of the in-service program should be maintained; however, the teachers should be directly involved in planning and organizational activities. Some topics that should be considered are:

   a. training teachers on the use of aides in the classroom,
   b. training specifically for aides,
   c. training on small group and individualized instruction,
   d. training concerning traditional and progressive educational practices.

5. The schedules of the ESL specialist should be rotated quarterly, i.e., first quarter-school A in the A.M.; second quarter-school A in the P.M., and so forth.

6. Additional emphasis should be directed toward the SSL curriculum for English dominant students.

7. Methods of increasing parental involvement should be pursued.

8. Methods of attracting English dominant students into the program should be continued.

9. Dissemination of program information to non-program teachers and administrators should be considered.

10. A filing system should be implemented and maintained by the community liaison specialist.

11. The search for and review of Spanish curriculum materials should be continued.

12. The publication of a program newsletter should be considered.