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ABSTRACT

This document synthesizes the results of a 3-1/2-year evaluation of four different Head Start bilingual bicultural curriculum models implemented in eight Head Start centers serving Hispanic communities. The report provides the findings of the program's impact as reflected in pre- and posttesting of children, interviews with parents and Head Start teaching staff, and systematic classroom observations obtained over the course of the 1979-1980 Head Start year. In addition, the report provides a summary of the field procedures and analytic methods that were required for this multi-method evaluation, and presents the conclusions and implications drawn from the study's findings. (Author/MP)

# An Evaluation of the Head Start Bilingual Bicultural Curriculum Development Project

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FINAL REPORT

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# ABSTRACT


## BACKGROUND

Between 1976 and 1979, Head Start, as part of its Strategy for Spanish-speaking children, funded four institutions in an experimental effort involving the development of four distinct bilingual bicultural preschool curriculum models for use with Spanish-speaking children. During the first year of development, each curriculum model was designed in consultation with parents and staff of cooperating Head Start centers. In the second year, a pilot implementation of each curriculum model took place at selected Head Start centers. The present evaluation is based on the third year of curriculum development activities in which each of the four models was fully implemented at two Head Start centers. Hispanic and non-Hispanic children participated in the program since it was felt that these curricula could also be used among non-bilingual or non-Hispanic children.

The evaluation was based on a pre-post experimental design in which children were assigned to experimental and comparison groups. It also included an extensive classroom observation component. Child impact criteria included standardized measures of language acquisition, language comprehension, and concept development administered in Spanish and English. Observational data focused on language, cognitive and socio-emotional behaviors encouraged by the models over the Head Start year. In addition, observations were used to estimate the degree to which a curriculum model was implemented in individual classrooms at three points in time during the evaluation year. Interview and questionnaire data were also collected from parents and teachers. Both groups responded to questions related to their attitudes toward bilingual education in general and to their satisfaction with a particular curriculum model.

## RESULTS

A. Child Impact. Analyses of variance (ANOVA) and covariance (ANCOVA) were used to assess differences between experimental Head Start and comparison Head Start children. Relative frequencies were used to examine change over time in the behaviors of individual children in the classroom. All contrasts were made within language preference group (Spanish-preferring or English-preferring).*

### SPANISH-PREFERRING CHILDREN

- On three out of four English language measures, children in the bilingual bicultural curricula, as a group performed significantly better than Head Start children not in the curricula. These three measures assessed: a child's ability to use English; a child's ability to think abstractly; a child's ability to coordinate eye and hand movements.


*The terms "Spanish-preferring" and "English-preferring" were used in place of "Spanish-Dominant" and "English Dominant" because they more accurately reflect language use among young bilingual children. Spanish-preferring children are those who used Spanish in a majority of home and preschool activities at pretest. English-preferring children are those who used English in a majority of home and preschool activities at pretest.

- On the fourth English language measure children in the bilingual bicultural curricula, as a group performed significantly better than Head Start children not in the curricula. The difference, however, was not statistically significant. This measure assessed a child's ability to understand English.

- On two of five Spanish language measures, children in the bilingual bicultural curricula, as a group performed significantly better than Head Start children not in the curricula. These measures assessed a child's ability to use Spanish and to think abstractly in Spanish.

- On the other three Spanish language measures children in the four bilingual bicultural curricula, as a group performed as well as Head Start children not in the curricula.

- Classroom observations supported these findings for Spanish-preferring children. On the whole, children in the bilingual bicultural curricula increased their English language use in the classroom by 21% from Fall to Spring. This increase was accompanied by the use of grammatical forms which they had not used regularly early in the year.

ENGLISH-PREFERRING CHILDREN

- On all English language measures, children in the bilingual bicultural curricula, as a group performed as well as Head Start children not in the curricula. These results were consistent with the classroom observations which showed an improvement in the quality of the children's English.

- On all Spanish language measures, children in the bilingual bicultural curricula performed as well as Head Start children not in the curricula.

B. PARENT OUTCOMES

- Mothers of children in the four bilingual bicultural curricula expressed highly positive attitudes toward bilingual bicultural curriculum models, Head Start and bilingual education.

C. TEACHER OUTCOMES

- Ninety-one percent of the classroom staff had ability in both Spanish and English and eighty percent of these used Spanish regularly in the classroom.

- Classroom staff expressed uniformly positive attitudes toward the bilingual curriculum model with which they worked.

D. EASE OF IMPLEMENTATION

- The use of the dual language strategy suggested by each curriculum model was the aspect of programming most related to positive outcomes.

- The successful implementation of the models at two distinct replication sites indicate that the curriculum models can be employed in different settings.

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# I

# INTRODUCTION

This final report is based on the results of a 3-1/2 year evaluation effort which focused on the implementation of bilingual bicultural preschool curriculum models at Head Start centers serving Hispanic communities. The document synthesizes the results of the evaluation of four different Head Start bilingual bicultural curriculum models implemented in eight sites throughout the United States. The report provides the findings on the programs' impact as reflected in pre- and posttesting of children, interviews with parents and Head Start teaching staffs, and systematic classroom observations, obtained over the course of the 1979-1980 Head Start year. In addition, the report summarizes the field procedures and analytic methods that were required for this multimethod evaluation and presents the conclusions and implications of the study findings.

## A. Background

Through such efforts as Project Head Start, the Administration for Children, Youth, and Families (ACYF) has historically endeavored to enrich the lives of children and families. Fundamentally, the Head Start program is based on the premise that all children have basic needs, which can be met, especially in the case of children from low-income families; through the help of a comprehensive developmental program. According to the Head Start philosophy:

- A child can benefit most from an interdisciplinary program to foster development and remedy problems as expressed in a broad range of services.
- The overall goal of such a program is to bring about a greater degree of social competence in children of low-income families. Social competence consists of the child's everyday effectiveness in dealing with the present environment and later responsibilities in school and life.
- In order to best implement the Head Start program and to maximize the strengths and unique experiences of each child, the family, which is perceived as the principal influence on the child's development, must be a direct participant in the program. Local communities are allowed latitude in developing creative program designs so long as the basic goals, objectives, and standards of a comprehensive program are adhered to.

Thus, the focus of Head Start includes the total family as well as the child. As Zigler (1978) has noted, the long-term effects of Head Start depend on the continuity between the Head Start program and the child's home.

The various goals of Head Start and the specific standards for the operation of Head Start programs by grantees and their delegate agencies are described in the Head Start Program Performance Standards (Federal Register, 1975). The four primary areas in which the Head Start grantees are required to provide services are education, health (mental health, nutrition), social services, and parent involvement. The present evaluation is based on one aspect of the program development effort designed to improve Head Start's capacity to provide educational services to Spanish-speaking preschool populations.

## B. Head Start Strategy for Spanish-Speaking Children

In 1975, ACYF initiated a new effort intended to address the specific needs of Head Start children who were Spanish speaking. This program, known as the Head Start Strategy for Spanish-speaking Children, sought to foster preschool bilingual bicultural education programs through bilingual multicultural curriculum development, competency-based bilingual bicultural training for Head Start classroom staff, the development of a National Bilingual-Multicultural Resource Network for Head Start programs, and research focusing on Spanish-speaking children.

Although these efforts were intended to serve Spanish-speaking Head Start children, it was felt that the products of this new effort could also be adapted to serve children in other preschool programs.

The Head Start bilingual multicultural curriculum development effort is based on the assumptions that one curriculum model would not satisfy the diverse needs of Head Start centers serving Spanish-speaking communities throughout the country and that experiences provided for children whose primary language is other than English must be in the language they know best. Between 1976 and 1979, Head Start funded four institutions in an experimental effort involving the development of four distinct bilingual bicultural preschool curriculum models.

The four models were based on the same fundamental requirements.

- Each curriculum model was to: (a) be based on sound educational theory; (b) embody an approach to early education consistent with child development theory; and (c) be acceptable by the ethnic community and usable by Head Start programs without need for extensive training.

- Each curriculum model was to be based on sound early child development principles and a bilingual bicultural enhancement philosophy. The models were not to be based on a deficit approach.
- Each curriculum model was to provide learning activities for the development of basic skills in the areas of cognitive, socioemotional, psychomotor, and language (English and Spanish) development.
- Each curriculum model was to be consistent with the Head Start Performance Standards and had to provide for the integration of all component areas (i.e., Parent Involvement, Social Services, Health Services, and Education) wherever possible.
- Each curriculum development effort was to include a plan for involving Head Start staff, parents, and administrators in the development, implementation, and validation of the curriculum model.
- Each curriculum model was to be replicable and usable in a variety of preschool settings such as Head Start, Day Care, and Nursery School.
- Each curriculum model was to provide specific information on the procedure to be used in deciding which language would be used when, by whom, and for what purpose. Grouping of children by language dominance was also to be addressed.
- Each curriculum was to have an explicit definition of bicultural education as it would be implemented in the curriculum model. This would include a description of the cultural goals and sample learning activities.

In addition, each curriculum model includes a component on how to train staff and parents to implement the model. At the same time, however, the models were to reflect a range of curriculum development approaches (Arenas, 1978).

C. The Curriculum Models

The four curriculum development institutions include:

- High/Scope Educational Research Foundation in Ypsilanti, Michigan;
- Intercultural Development Research Association of San Antonio, Texas;
- Teachers College, Columbia University in New York, New York; and
- The University of California at Santa Cruz, California

● High/Scope Educational Research Foundation: Un Marco Abierto

Un Marco Abierto is the name of the curriculum model developed by the High/Scope Educational Research Foundation of Ypsilanti, Michigan, an institution with a history of early childhood educational experience. Un Marco Abierto represents an adaptation of their specially developed preschool model to the needs of linguistically and culturally diverse populations. The model is based on Piaget's child development theory, which views the child as an active learner who should be assisted in exploring the environment, addressing his or her own needs, and making choices and decisions. Using a framework of "key experiences" through which teachers facilitate a program of active learning and cognitive development, the model attempts to build on the child's social, cultural, and linguistic background and to support a child's self-esteem by emphasizing a teaching effort involving parents, teachers, and paraprofessionals.

● Intercultural Development Research Association: AMANECER

The second curriculum model, AMANECER, was developed by Intercultural Development Research Association, a San Antonio-based nonprofit research and public education organization specializing in research, curriculum and materials development, training and technical assistance, and information dissemination aimed at eliminating educational inequities in minority communities. Titled with the Spanish word meaning "the dawning of a new day," this model also emphasizes a process approach to learning. New experiences are introduced in accord with what the child has already experienced at home or in the classroom. It especially emphasizes the role of teachers in selecting or designing learning activities that will lead the child from simple to more complex activities. The child's best-known language is stressed, and only after concepts and ideas have beer mastered in that language is the second language introduced.

● Teachers College: ALERTA

A third curriculum model, ALERTA, was developed by Teachers College, the educational theory and practice component of the Columbia University system which has historically been in the forefront of national educational research. Teachers College's ALERTA is based on two main principles. The first reflects the assumption that child growth and development occur in an orderly and sequential way which moves from the simple and concrete to the more complex and abstract. The second principle emphasizes the importance of the child's total environment in his or her growth and development. The model, therefore, provides an opportunity for children to explore and experiment and also builds upon their unique backgrounds and experiences.

● University of California: Nuevas Fronteras de Aprendizaje

Under the direction of senior staff specializing in learning styles, biculturalism/bilingualism, and community psychology, the University of California, Santa Cruz, was able to put into practice particular aspects of these theories through the Nuevas Fronteras de Aprendizaje model. This model is based on the assumption that a child's cultural background directly affects his or her learning style, i.e., how the child perceives the environment, processes information, and relates to others. The curriculum is initially structured to provide each child with classroom experiences that are appropriate and compatible with the learning style and language capacities that the child brings into the classroom. This basis of compatibility between curriculum and child characteristics provides a foundation for developing a child's cognitive capacities for acquiring other learning styles and/or languages.

## D. Curriculum Development, Implementation, and Evaluation

Within the 1976-1979 curriculum development period, each of these institutions, in cooperation with selected Head Start centers, developed and implemented a bilingual bicultural preschool curriculum model. During the first year of development, each curriculum model was designed in consultation with parents and staff of a cooperating Head Start program. In the second year, a pilot implementation of each curriculum model took place within a Head Start center. During the third year, each model was implemented in two additional Head Start centers.

In conjunction with the curriculum development effort, the Research, Demonstration, and Evaluation Division of ACYF funded Juárez and Associates, an independent management consulting firm, to carry out an evaluation of the curricula. As with the curriculum development effort, the evaluation was conducted in a number of phases. During the first year, the evaluators selected instruments in two languages that were appropriate for use with young children, developed interviews and questionnaires, assessed the suitability of recommended sites, and revised the initial design. During the second year, all instruments were piloted, and an extensive naturalistic observation component was developed and piloted. The third year, which corresponded to the third year of the curriculum development project, encompassed pre- and posttesting of children, classroom observations at the demonstration sites, and analysis of the data collected. This report presents the results of the third phase of the evaluation.

## E. Evaluation Goals

The evaluation of the models was undertaken by Juárez and Associates concurrently with the development, piloting, and implementation activities of the model developers. The contract

specified that the purpose of the evaluation would be to assess the effectiveness of the four early childhood bilingual bicultural curriculum models for Spanish-speaking children. More specifically, the contract required that the evaluators collect information on the following:

(1) The extent to which the models, once implemented, were meeting their objectives. The major emphasis of the evaluation was on measuring the change in children as a result of their participation in one of the four curriculum models. This was accomplished through an experimental pre- and posttest design, which included testing the domains of Spanish language comprehension, Spanish language production, English language comprehension, English language production, and concept development. In addition, observations of children were conducted throughout the year with an emphasis on classroom behaviors which would reflect these same developmental constructs.

(2) The feasibility of successfully implementing the models in more than one setting. This goal related to securing information to assist others in learning about the potential of the model for implementation elsewhere. The evaluators collected information regarding both the process necessary to implement each model and the procedures needed to maintain each model in a new environment, including descriptions of any special characteristics of Head Start staff, students, parents, resources, or community needed to assure success in its implementation.

(3) The extent to which the models were greeted favorably by Head Start staff, parents, and lay community members. This required the collection of information both at the start and end of the preschool year. Parents and teachers responded to questionnaires which assessed their attitudes toward bilingual education in general and their satisfaction with a particular curriculum model.

(4) Dissemination of evaluation results. Finally, a set of pamphlets was to be developed to aid in the dissemination of information about the four models to interested Head Start programs. These pamphlets, intended for use by preschool program personnel, included descriptions of the models, implementation information, assessment of the specific strengths of each model, and information regarding the impact of each model on parents, children, and teachers.

## F. Previous Head Start Evaluation Efforts

The contract specifications were largely a result of the critical issues addressed in previous evaluations of Head Start. Although evaluation of Head Start programs began almost with the birth of Head Start itself (see Datta, 1979, for an overview of the development of

Head Start), the first national study of import was that of Westinghouse (1969). The Westinghouse study focused on children who attended eight-week Head Start summer programs during 1965, 1966, 1967, and 1968. The retrospective nature of the Westinghouse study made it impossible to randomize children to the treatment group and difficult to specify treatment variables (Datta, 1978). The Head Start Planned Variation Evaluation (Weisberg, 1974) demonstrated progress by moving toward a specification of treatment factors and examining several program models. The Home Start Evaluation (Deloria et al., 1974; Love et al., 1975) took a further step by including random assignment to program and control groupings. In addition, the study used observational data to examine program implementation at the individual child level. Such information, however, did not form a major part of the analyses. The Project Developmental Continuity continued the trend toward process evaluation although the amount of process data actually collected was limited. Lazar's (1978) "Lasting Effects After Preschool" study utilized an integration of a variety of programs and methods in the research design, thereby providing a sound basis for legislative and policy decisions.

Building on these evaluation experiences, Juárez and Associates, in evaluating four bilingual bicultural curriculum models, developed a strategy that went beyond a reliance on test results as the sole measure of program effectiveness. Instead, the evaluation methodology directly examined classroom activities during the course of the year (not just at the beginning and the end) to attempt to assess children's performance under conditions that resembled those situations in which they were learning the skills the programs taught. Such a triangulation of methodological approaches permitted a matching of outcome and process variables across treatments in a manner which may aid in the determination of policy. The subsequent chapters of the report detail the findings from such a multimethod approach.

## G. Report Organization

The remainder of this report is divided into seven chapters. The first, Study Design, provides an overview and discussion of the procedures used both to collect and analyze data. Included in this chapter are a description of the study design and conceptual framework as well as an explanation of the testing, interview, and observational components of the study. The subsequent five chapters form the bulk of the report. Chapter III entitled "Composite Results" discusses the overall findings of the study as reflected in common trends occurring across all curriculum models. Chapters IV through VII present the findings for each of the curriculum models being evaluated. Each of these is divided into three sections corresponding to the goals of the evaluation: the impact of the model; implementation; and feasibility of transfer. Finally, Chapter VIII presents a summary of the findings and discusses both the programmatic and methodological implications of the study.

# II

## STUDY DESIGN

This chapter provides both an overview of the study design and a discussion of the methodological procedures employed in the study.[1] The opening sections of the report describe the general design employed and discuss issues related to the procedures followed in carrying out Juárez and Associates' evaluation of Head Start bilingual bicultural curriculum models. Subsequent sections deal with the variables and analysis techniques for each component of the evaluation.

### A. Overview of the Evaluation Design

Initially, the design was intended as a pre-post study, with 90 children at each of the eight Head Start replication sites being assigned to treatment (n=45) and comparison (n=45) groups.[2] Children were to be stratified on the basis of language preference (Spanish or English), age, sex, and any prior preschool experience. All children were to be tested on selected competency measures at the beginning of the treatment (Fall 1979) and at its conclusion (Spring 1980). Child competency measures were intended to assess change in (1) English language production, (2) Spanish language production, (3) English language comprehension, (4) Spanish language comprehension, (5) concept development in English and Spanish, (6) socioemotional development, and (7) language preference over the Head Start year.

Similarly, at both the beginning and at the completion of the Head Start year, measures of impact were to be administered to parents and Head Start classroom staff. Parent interviews were intended to assess (1) attitudes and knowledge about education in general and bilingual education in particular, (2) expectations and aspirations regarding their child's educational and vocational achievement, and (3) involvement in the child's learning experiences in both the preschool setting and at home. Data were also obtained on a number of parental background characteristics. Head Start classroom staff completed a questionnaire designed to provide information on (1) their understanding of what is meant by the terms "bilingual" and "bicultural" in the context of an early childhood program, (2) their attitudes toward Spanish dominant and bilingual Head Start children and their parents, (3) their willingness to include parents as well as information collected from them in the instructional program, and (4) their sensitivity to the special ethnic and linguistic characteristics of Spanish dominant and bilingual Head Start children and ability

to incorporate these characteristics in a positive fashion in the teaching/learning process. Detailed discussions of the study samples and instrumentation are provided in subsequent sections of this chapter. Complete descriptions of all testing and interview procedures and examples of the instruments themselves are available in the Pilot Study Results of the Child Assessment Measures (Chesterfield et al., Juárez and Associates, June 1979) and the Report of the Pretest Results and Posttest Analysis Plan (Bolus et al., Juárez and Associates, February 1980), respectively.

In addition to the testing and interview component of the evaluation, an extensive observational component was added to the evaluation design. This component was intended to provide data which would allow both the nature of within-classroom interaction and the process of implementation at the experimental sites to be characterized.[3] Specifically, the information gained through naturalistic observations was intended to (1) complement the results of the standardized impact measures thereby adding to the interpretive power of the original factorial design of the study, (2) provide criteria for assessing the extent to which the treatment was implemented, (3) furnish descriptive data on individuals participating as subjects in the study, (4) enhance the analysis related to the feasibility of implementing the models in other settings.

At one of the two sites implementing each curriculum model a full-time participant researcher (PR) was present for the entire year. These sites are referred to throughout the report as the researcher-intensive sites. In addition to the four participant researchers, four implementation researchers (IRs) were hired and trained to collect information on the degree of implementation in the classrooms of the second site where each model was being used. Each researcher, who was bilingual and had experience in early childhood education, gathered data by means of implementation forms and ethnographic notes. Participant researchers also conducted focused observations of individual children by means of time and event samples.

- Time and event samples. These data-gathering procedures were organized to provide systematic classroom observations of behaviors related to language, concept, and socioemotional development exhibited by a subset of 15 children per curriculum model at three preselected time periods over the course of the evaluation year. Individual children were observed for equal amounts of time in three types of events: (1) structured interactions between the children and the teacher or other adults; (2) those events which emphasized adult-child interactions but were relatively unstructured; and (3) situations organized to emphasize child-child interactions.
- Implementation forms. These instruments consisted of model specific checklists, frequency counts, rating scales, and informal interview schedules. The data

collected focused on the degree to which each curriculum model was implemented in each of the experimental classrooms over the course of the Head Start year. Data were collected for three (3) two-week periods at each of the eight sites and this information was organized into categories related to the classroom setting, schedule and organization, materials, individual behavior, and instructional strategies.

- Ethnographic notes. These data were gathered in the form of narrative accounts, logs, and inventories which were maintained over the course of the Head Start year. These procedures were used to gather information on the aspects of the general context of the study, such as the language use of the community, and specific events external to the classroom (e.g., inclement weather) which might be related to the implementation of the curriculum models, as well as to examine in-classroom behaviors from the perspective of the actors themselves.

The observational procedures are discussed in greater detail in a subsequent section of this chapter. The reader is also referred to Pilot Study Results/Training of Fieldworkers (Chesterfield et al., Juárez and Associates, September 1979); Phase III Field Supervisor Observations and Quality Control of Ethnographic Data (Chesterfield and Gonçalves, Juárez and Associates, December 1979), and Preliminary Report on the Field Supervisor's Spring Parallel Observations and Debriefing of Fieldworkers (Chesterfield, Juárez and Associates, July 1980) for comprehensive discussions of the recruitment and training of personnel and field procedures.

## B. Conceptual Framework

The organization of the evaluation has been influenced by a number of concerns in the literature. A major concern was the need for child outcome measures which would parallel the overall objectives of the Head Start strategy for Spanish-speaking Children and of the curriculum models. In selecting tests, care had to be taken to choose instruments that were sensitive to the specific objectives of four different models and the educational goals of the Head Start Strategy for Spanish-speaking Children.

Selection of model objectives to be assessed began with the identification of the curricular goals of each model. Available materials related to the four curriculum models were reviewed in order to describe their characteristics and objectives. This extensive list of objectives was then organized by domains and relevant behaviors in accordance with those specified in the evaluation contract. The result was the organization of several specific curriculum-related components under each evaluation domain.

The list of components and their related participant behaviors were then reviewed by the curriculum developers, who were intimately familiar with the models, for accuracy and relevance. Their suggestions were incorporated into a revised list. After generating a large pool of tests, screening began according to the needs of the evaluation and the purpose the tests were to serve. The battery of instruments chosen for pilot testing consisted of the Preschool Inventory in Spanish and English (SRI 30-item version), the Bilingual Syntax Measure, and subtests of the Circo/Circus series (see Arias et al., 1978, for a discussion of the overall test selection procedures).

As part of a pilot study (see Chesterfield et al., 1979, for a complete description of the pilot study), the appropriateness of each of the measures was judged by tying test items to the most important cross-model objectives to ensure that the test battery provided a fair sample of curricular content. A factor analysis was performed on each instrument in the test battery to compare empirically generated item clusters to those domains originally ascribed to a measure. In each case the factor structures tended to support the original content analysis and subsequent item grouping. Thus, the tests seemed not only to have adequate psychometric properties but to provide a fair assessment of model objectives.

As with the selection of tests, the observational component of the evaluation was tied to the goals of the curriculum being evaluated. Focused observations were made on a subsample of children participating in each model. Such data provided a series of observations on the behaviors of students, teachers, and parents in specific contexts designed by the curriculum models to encourage certain types of behaviors. These observations were coded in terms of the behaviors listed by the model developers as important cross-model objectives and thus served as a means to assess change over time across those developmental domains sampled by the tests. Given this strategy (also used in the collection of implementation data), Juárez and Associates chose to call the observers participant researchers rather than ethnographers, as they did not take a "holistic" or "grounded theory" approach to data collection but rather focused on contextually relevant data tied to both Head Start and the model objectives.

A second concern was to ensure that the measures were appropriate to the specific characteristics of bilingual or Hispanic children participating in the curriculum models. In this study, child characteristics included the following: children between the ages of three to five years; children generally from families that were economically depressed; and at least 50% of children with Spanish as their first language. Thus, fundamental concerns centered on providing an assessment that was fair to the children and linguistically appropriate.

Juárez and Associates was aware of the sensitive nature of young children and maintained a child-centered approach toward evaluating the four experimental curriculum models. The child-centered approach

considered as critical the developmental characteristics of young children as a group that could impinge on the testing situation. As pointed out by Garcia (1977), the general lack of standardized instruments or procedures to determine bilingualism among young children is complicated by the actors, the situation, and the subtle biophysical changes that characterize development during the early years. In this evaluation the concept of "language dominance" was therefore considered inappropriate in classifying children for testing purposes. Rather, the concept of "language preference" was used throughout the study. Each child's preference at the time of the pretest was determined through the use of two independent ratings, that of the parent and that of the examiner.[4] The El Circo/Circus language check was then used to determine the ability of the children to take the test battery.

The appropriateness of a test in terms of children's age and cultural characteristics was also assessed in the pilot study analysis. Instances where the test format was confusing (e.g., color shades in the symbols were not sufficiently distinct), inappropriate vocabulary was used, or test items, such as those including stories, were too long, were noted and adjusted.

A third concern was the degree to which the program was implemented and the factors that were related to the process of implementation. The preschool setting, including schedule, physical space, materials, and centers, may have a significant influence on the learning process. Evaluation sites, even those within a curriculum model, differed in location, demographic make-up, reasons for wanting the curriculum projects, and relationship with the model's staff. Since several classrooms were involved at each site, variability in treatment, both within and across replication sites, was also expected. Cummins (1977) pointed out that evaluations that ignore classroom interactions and instead aggregate data from different types of programs, operating under different sociocultural conditions and serving children with varying levels of first and second language abilities, are likely to be uninterpretable. In light of this warning, there was a need for a careful definition of the treatment and its implementation process at each replication site to aid the interpretation of observed effects.

The context in which learning occurs also plays a significant role in the resulting outcomes. Tests, though indicating change among participants, usually assess children's abilities in restrictive contexts (i.e., the typical test situation). This observation is important, particularly in an evaluation involving very young children of various language abilities, as there is a growing amount of evidence that such behavior should be viewed as an adaptation to particular tasks or situations (e.g., Cole & Scribner, 1974); that is, children possess a variety of modes of functioning that respond to specific environmental demands (Day & Sheehan, 1974; Pluger & Zola, 1969). Therefore, a child's performance may depend on such factors as perceived task expectations, other participants, familiarity with

the access to materials, the learning centers, and so forth (Kritchevsley, Prescott, & Walling, 1969; Doyle, 1977; Doyle & Ponder, 1975). The implication of this position for the evaluation of young children is rather straightforward. If children are removed from the classroom situation in which they learned to use a particular skill (e.g., the test situation), competencies may be erroneously assessed. As Cole, Sharp, and Lave (1976) have suggested, performance is a result of an interaction between familiar content and familiar operations, plus some knowledge of what constitutes adequate performance. Therefore, in addition to pre- and posttesting, it was important to assess children in conditions that matched or paralleled those conditions under which they learned the specific skills the programs were trying to teach. Observing children under such conditions also adds to the understanding of the classroom dynamics that may have caused the observed effects.

In addition, when evaluating educational programs, the assumption is often made that by providing a well-delineated curriculum model and by training teachers in its use, uniform outcomes in teacher, and therefore student, behavior can be expected. Often, however, teachers have little time to thoroughly review curricula and rely heavily on trainers' interpretation of model goals for their understanding of a program's objectives. When such learning is transferred to the classroom, it may be applied in terms of a teacher's own previous experience, the characteristics of the physical setting, and the make-up of the student population. Thus, despite similar training and experience, teachers, especially those in bilingual settings, may develop different approaches in meeting the language-use goals of the model they are implementing. Without an examination of the program as implemented within individual classrooms, there is the danger of evaluating a nonevent if no implementation of a model occurs.

An evaluation must go beyond the characteristics of individual classrooms or programs, as the commitment of staff and administration may also determine a program's effectiveness. This means that the attitudes of teachers and administrators toward the program in general as well as those toward the language preference of the children must be examined.

To investigate these factors as they related to the implementation process and outcomes, Juárez and Associates again employed a multimethod approach. Both quantitative data, in the form of checklist scores and interviews with teachers, and qualitative data, including running logs of classroom interactions and informal discussions with staff and administrators, were collected and used as complementary information in interpreting outcomes. The discussion of the observational procedures begins on page 42.

A final concern was that an evaluation of bilingual programs must take into account the influence of family and community when assessing the effects of a program. For example, language acquisition and attitudes, an important facet of these bilingual preschool

models, may result from a variety of sources and influences. Among the most salient for students are the home and community environments. The formal educational setting assumes that certain learning patterns are developed through early socialization experiences, especially those in the home (Chan & Rueda, 1979). The development of basic cognitive processes, motivational styles, and use of English are examples of prerequisite skills that all students are assumed to have in their individual behavioral repertoires prior to entering school. For language minority students, the behavioral patterns developed in the home and community may be quite different from, and in some instances in conflict with, the behavioral demands of the school (Glidewell, 1966). Teachers and parents may not share similar beliefs and opinions regarding the value of first and second language acquisition or the means of developing it. Differences between home or the community and school may interfere with the basic mutual understanding necessary for appropriate instructional approaches and overall effective teacher-student interaction.

## C. Site Selection

Each of the four curriculum development contractors was required to select two Head Start sites at which to implement their respective curriculum models. In order to aid in the evaluation of effort, model developers were to select the sites on the basis of four criteria. These included:

- The availability, by Fall 1979, of a minimum of 90 four-year-old children with no previous preschool experience whose families fell within Head Start eligibility guidelines and of whom at least half were Spanish dominant or bilingual.
- The presence at each site of one or more Head Start centers which would be willing to participate in activities related to implementing a model and would be able to enroll up to 45 of the above children in the Fall of 1979.
- The commitment on the part of these Head Start centers to recruit at least 90 children during late Summer 1979.
- An indication on the part of the delegate agencies for each site of a willingness to provide 45 children not enrolled in Head Start with the basic health services (e.g., screening, diagnosis, and referral) received by Head Start children. Expenses incurred in providing such services were to be paid through a supplementary grant to each participating center.

In addition to the above criteria, the local delegate agency for each site was required to send a list of the names of the 90 children recruited by the Head Start centers for Fall enrollment of the evaluation year to the evaluation contractor. These lists of children's names were to be sent to Juárez and Associates offices during August 1979. Each list of names was to include the following information on each child: identified level of speaking ability in English and/or Spanish, age, sex, and any prior school experience. In order to recruit the necessary 45 children to serve as the control group, ACYF provided additional funds in the form of a mini-grant to each evaluation site. These mini-grants provided monies for hiring a part-time Health Services Coordinator and monies for medical and dental services to the control group children. The Health Services Coordinator was to be responsible for recruiting the control group children, maintaining contact with parents, and coordinating the delivery of medical and dental services to the control group children.

The locations of the sites for each model are as follows: Un Marco Abierto -- East Los Angeles, California, and Milwaukee, Wisconsin; AMANECER -- Corpus Christi and Laredo, Texas; ALERTA -- South Bronx and Lower East Side, New York City; Nuevas Fronteras -- Rio Grande City, Texas, and Corona, California. The success of the recruitment effort at each site and its relationship to the data analysis are detailed in subsequent sections of this chapter.

## D. Testing and Interview Component

This subsection details the testing and interview component of the evaluation. Owing to differences in the research designs, assessment instruments, and the analysis procedures for this component and those of the observational component, the two methodologies are discussed separately. However, in keeping with Juárez and Associates' multimethod approach, the findings of the various measures are presented jointly in subsequent chapters. A description of the child outcome measures sampled through individually administered tests initiates this section. This is followed by a discussion of the child sample and the data analyses performed on the measures. The interview instrument referred to in previous literature on the evaluation as the Parent Interview is then described. The scaling procedures and the rationale for limiting the survey respondents at pretest and posttest to mothers of children are also explained. A brief discussion of the teacher interview measures concludes this section of the report.

### 1. Child Competency Measures

#### a. Selection and Development

Much of the first two years of the evaluation effort was spent in selecting and refining standardized instrumentation for use with

children in bilingual settings. The selection process began with a comprehensive review of other national evaluations of early childhood programs that focused on bilingual/bicultural populations. In addition, a search was made of the ERIC System, ETS Test Collections, the resources of the Bilingual/Bicultural Dissemination Center, and through commercial publishers of tests for young children.

Test selection was conducted by screening the instruments according to the needs of the evaluation and the purpose the tests were to serve. As mentioned previously, an overriding concern in test review and selection was the extent to which the individual tests sampled behaviors which were consistent with the objectives of the curriculum models. Specific criteria for screening the instruments included (1) measurement validity, (2) reliability, (3) appropriateness for target population, (4) appropriateness of test format, and (5) feasibility of administration. The criteria employed in assessing each of these items are listed in Table 1.

The exhaustive search and development efforts led Juárez and Associates to recommend the following tests:

- Language Preference - El Circo/Circus - Language Check
- Language Production - El Circo/Circus - Dímelo Tu/You Say It Bilingual Syntax Measure (English & Spanish)
- Language Comprehension - El Circo/Circus - Escuchen Este Cuento/Listen to the Story
- Concept Development - Preschool Inventory (Spanish & English)
- Socioemotional Development - A rating form of specified behaviors

Once selected, the battery of standardized instruments was field tested at a local Head Start center. This prepiloting led to (1) a reexamination of the Bilingual Syntax Measure Spanish Scoring System, (2) a review of the Circo Tests (Dímelo Tú and Escuchen Este Cuento) to incorporate regionalisms, (3) a reassessment of time frames for administration of the tests, (4) the systematization of teacher ratings for language preference, (5) the decision to administer the PSI to all children in both English and Spanish, and (6) the decision to include procedures in the training of testers which would ensure rapport with the children in order to create enough interaction for appropriate data collection.

The standardized instrument package was then pilot tested in four of the eight replication sites involved in the evaluation of the bilingual bicultural curriculum models. The use of these sites ensured a representative sample of the type of children who would participate in the bilingual curriculum programs, and a diverse geographical representation for the purposes of pilot testing. The re-

Table 1 . Test analysis criteria.

The following test analysis criteria evolved from the specific needs of the Bilingual/Bicultural Head Start Evaluation and were influenced in format by criteria previously developed through CSE.

I. Measurement Validity

1. Item Selection -- refers to how effectively the test items are described and justified

2. Face Validity -- refers to how well the test measures specific goal behaviors as determined by a panel of experts

3. Construct Validity -- refers to the relationship of test items to an underlying construct. In other words, does the test measure what it purports to measure?

4. Concurrent Validity -- refers to how well a particular test correlates with another well reputed test

5. Predictive Validity -- refers to how predictive a particular test is in reference to another subsequent behavioral criterion

6. Content Validity -- refers to how closely a test correlates to a specific curriculum

II. Reliability

1. Test-retest Reliability -- refers to how well a test relates to individual repeated trials over time

2. Internal Consistency -- refers to how coherently or consistently the test measures a given behavioral dimension

III. Is Test Designed for Target Population?

1. Utilization by Hispanic -- what particular ethnic groups have previously utilized this test?

2. Utilization by Other Programs/Evaluations -- what other programs or evaluation projects have used this test?

3. Geographical Location -- what parts of the country have utilized this test?

4. Age Group Normed On?

5. Translation based on which ethnic group?

6. Pilot Tested -- on what groups has test been piloted?

IV. Test Format

1. Visual/Auditory Attractiveness -- would preschoolers be attracted to this test instrument?

2. Timing/Pacing -- is it appropriate for preschoolers?

3. Level of Comprehension -- how appropriate is the test's content for preschoolers? (This includes concepts, syntax, and vocabulary of instructions.)

Table 1. Test analysis criteria (continued).

V. Feasibility of Administration

1. Size of test group
2. Administration -- refers to the quantity of prerequisite training required in order to administer the test
3. Administration Time
4. Ease of Scoring -- how simple is the scoring procedure?
5. Score Interpretation -- how are scores reported/interpreted (frequencies, norms, percentiles, etc.)?
6. Cost

sults of the pilot testing with a sample of 97 children indicated that all tests were technically adequate but that revisions in particular tests, as well as the administration and scoring procedures, were necessary for the preschool population. Pilot testing led to the following suggestions: (1) total time for the test sessions should range from 75 to 100 minutes, and no child should be tested for more than one session per day; (2) initial sequencing of tests would schedule testing in a child's second language before testing in his or her first language during the second session to reduce the effects of test-wiseness and memory; (3) scoring time should range from 100 to 145 minutes; (4) the language check was found to be easily administered and a reliable index of language preference; (5) Escuchen Este Cuento and Listen to the Story were modified through the elimination of the Functional Language sections in each to improve time of administration and reduce the tests' difficulty; (6) the Bilingual Syntax Measure was recommended for use in assessing first language competency and second language acquisition because of its widespread high evaluation in the selection process, its ease of administration, its informal and natural elicitation of language, its briefness, and its engaging and colorful graphics; however, it was recommended that scoring procedures be adjusted to prevent masking of the language differences among four-year-olds; and (7) the Preschool Inventory Test was found to require no modifications.

b. Constructs and Instrumentation

As Table 2 indicates, seven constructs -- language performance, socioemotional behavior, concept development, perceptual motor development, language acquisition, language comprehension, and language production -- were addressed by the child outcome measures. All constructs with the exception of language production and socioemotional behavior were measured in both the child's preferred and nonpreferred language. Each construct except socioemotional functioning was represented by "content comparable" Spanish and English measures. This means that the two measures were either direct language translations of each other or that they had comparable format and item content, were conceptually similar and had approximately the same level of development-referenced difficulty. These tests, however, do not exhibit the characteristics of parallel measures (Bolus et al., Juárez and Associates, February 1980) and are not considered as such in this report. An operational definition of each construct follows.

(1) Language Preference. A child's language preference was defined as the language the child prefers to speak in most settings. The language for test administration was generally determined by asking parents to identify the language their child used in discourse with them, their teacher, other adults, and other children and by an examiner's rating of the child's language preference. If a child received a passing score (10 to 16 items correct) on the Language Check instrument, the language preference ratings of the parent and test

Table 1. Child competency measures[1]

| CONSTRUCT | MEASURE (Language of Administration) | Abbreviations Used in Tables[2] | Number of Items/Scale | DEVELOPER |
|---|---|---|---|---|
| Language Preference | El Circo Language Check (Spanish) | SLC | 16 | Educational Testing Services |
| | El Circo Language Check (English) | ELC | 16 | Juárez and Associates, English Translation |
| Language Acquisition | Bilingual Syntax Measure (Spanish) | SMLU | 25 | Harcourt, Brace, & Jovanovich |
| | Bilingual Syntax Measure (English) | EMLU | 25 | |
| Language Comprehension | Escuchen Este Cuento (Spanish) | SCOMP | 15 | Educational Testing Service, modified by Juárez and Associates |
| | Listen to the Story (English) | ECOMP | 15 | |
| Language Production | Circo Dimelo Tu (Spanish) | | | Educational Testing Service, modified by Juárez and Associates |
| | Quantity of Spanish words | SQUAN | - | |
| | Object Description Scale | DESC | 7 | |
| | Narration Description Scale | QUAL | 20 | |
| | Circo You Say It (English) | | | |
| | Quantity of English words | EQUAN | - | |
| | Object Description Scale | DESC | 7 | |
| | Narration Description Scale | QUAL | 20 | |
| Concept Development | Preschool Cooperative Inventory, Form B (Spanish) | PSIS | 26 | Stanford Research Institute and High Scope Educational Research Foundation; rescaled by Juárez and Associates |
| | Preschool Cooperative Inventory, Form B (English) | PSIE | 26 | |
| Perceptual Motor Development | Preschool Cooperative Inventory, Form B (Spanish) | SPERC | 4 | Same as Concept Development |
| | Preschool Cooperative Inventory, Form B (English) | EPERC | 4 | |
| Socioemotional Development | Test-Taking Behavior Checklist[3] | SOCIO | 5 | Juárez and Associates |

[1]All psychometric assessment measures were administered twice, at the beginning and the end of the preschool year.

[2]In these abbreviations a leading or trailing S means Spanish version (with the exception of SOCIO) while a leading or trailing E refers to the English version.

[3]Respondent for this measure was testar, not child.

examiner were validated. If a child's score was nine or less, however, the Language Check was administered in the other language. If a child also failed to achieve a score of 10 on this measure he or she was generally considered untestable and dropped from the sample.

(2) Language Acquisition. The language acquisition construct was derived by scoring the protocols of the Bilingual Syntax Measure (BSM) in units of mean length of utterance (MLU) in general accordance with the criteria of Brown (1973).[5] Responses to the 20-item English and 18-item Spanish versions of the measure formed a subject's average MLU (EMLU and SMLU, respectively). Use of mean length of utterance as a measure of syntactic development resulted from repeated problems with the scoring procedures recommended for the BSM by the test developers. Scoring procedures used in both the final test and field test editions of the instrument failed to differentiate among preschool children, masked child avoidance strategies, and showed low interrater agreement in scoring owing to the manual's ambiguous definitions of scorable/unscorable and grammatical/ungrammatical responses. A complete discussion of the rationale for using MLU is presented in the pretest report (Bolus et al., Juárez and Associates, February 1980).

(3) Language Comprehension. The companion measures Escuchen Este Cuento and Listen to the Story were designed to assess a child's ability to listen to, comprehend, and respond to one- or two-sentence descriptions of events that formed a story about a circus. The results of the pilot data for the evaluation indicated that both measures would be better suited to the abilities of preschool children if eight items that required the child to make interpretations were eliminated (Chesterfield et al., 1979). The revised 15-item measure defined the construct of language comprehension for the evaluation.

(4) Language Production. Dímelo Tú and You Say It are similar measures designed to assess a child's productive language ability in his or her first language in both structured[6] and unstructured tasks. The Spanish and English versions follow a comparable format, although stimulus materials differ. Two of the three subtests of the Circo Dímelo Tú/You Say It, considered as three subscales for analysis purposes, were selected for definition of a child's descriptive and narrative language use. The object description scale (DESC), consisting of seven items in Spanish and six in English, assesses a child's ability to answer a series of questions eliciting properties of a common object (a button on the Spanish scale and a pencil in English) which he or she has described. Scores on the other subscales are derived from a child's story about a picture of a yard scene (Spanish test) or a classroom scene (English test). The subscale (QUAL), consisting of 20 items, includes scoring of the child's spontaneous narration and his or her answers to six follow-up questions for quality (parts of speech, syntactic complexity, and content). The remaining subscale is a count of the number of words used in the story. SQUAN/EQUAN refers to the quantity of the words in the child's narration in his or her first language.

(5) Concept Development. Both concept development and perceptual motor development were measured by dividing the items from the Preschool Inventory into two scales. This division was determined by factor analysis, performed first on pilot data for the study, and replicated on pretest data, which led to the identification of two factors accounting for 75% of total item variance (Bolus et al., Juárez and Associates, February 1980). The 26 items comprising the concept development scale (PSIS/PSIE) focused on the assessment of language development and general cognitive skills, including the ability to speak and comprehend language, follow directions, label objects, name parts of the body, and provide knowledge of number concepts and ordination.

(6) Perceptual Motor Development. The four items forming the perceptual motor scale (SPERC/EPERC) tested a child's ability to recognize and copy designs. Owing to the fact that this measure was a subscale of the concept development test and the items were positioned toward the end of the instrument, it was often inadvertently not administered when the criterion for discontinuing testing for the PSI was reached. Thus, the number of children reported as responding to the measure is generally low. In addition, the majority of children who were administered the measure reached the ceiling criteria of four correct responses at both pre- and posttest (see Appendix C).

(7) Sociemotional Behavior. Socioemotional behavior of the child was a composite score defined by ratings made of five dimensions of behavior exhibited during testing: task persistence, cooperation, patience, enthusiasm, and the need for verbal reinforcement to maintain interest on task. Each behavior was rated by the test examiners on a five-point Likert-type scale. In order to allow children to become accustomed to the test situation, ratings were made at the conclusion of the third and fourth or last two testing sessions.

### c. Reliability of Child Competency Measures

The technical adequacy of the child assessment instruments in terms of item discrimination and internal consistency was determined both during the pilot study and at the time of the pretest. Changes in the sample as a result of attrition and more rigorous scoring procedures led to reexamination of the reliability of the instruments using both pretest and posttest data. Relabilities computed for both pre- and posttest measures were generally considered acceptable. Coefficients were, however, found to be consistently higher on measures administered in the nonpreferred language.[7]

### d. Administration of Child Instruments

The same procedures for recruitment, hiring, and training test supervisors and local testers were followed prior to the pre- and

posttest administration of the test battery. As all of the test supervisors were either members of the in-house staff of Juárez and Associates or individuals who had worked extensively with the test battery, the training sessions were conducted as group problem-solving endeavors aimed at ensuring the maximum staff and logistical efficiency in the field. Training took place over a two-day period. Major topics included recruitment and employment of testers, scheduling and procedures, general responsibilities of test supervisors, training of testers, and the administration of the teacher questionnaire.

In order to recruit local testers at each site, announcements were sent to university placement offices, employment agencies, and other likely local sources for qualified personnel. Candidates were screened for language ability in Spanish and English, prior experience with children and with the administration of tests, level of formal education, and availability to participate during the testing period. Typically, this process led to the hiring of three and sometimes four testers at each of the participating sites. At each of the sites, 24 hours of training for local testers were provided. This training was spread over three to four days and was administered by a test supervisor at each site, who used the tester training manual prepared for this purpose. The training included an explanation of the evaluation, the delineation of the role of the tester, and background information on each site, as well as an explanation of the administration and scoring of each test in the test battery, the preparation of test forms, the coding of test results where applicable, and supervised practice in the administration of each test.

For the purpose of this evaluation, 150 days of instruction was used as a criterion to initiate the collection of posttest data. Thus, for those sites which began the preschool year in early September, recruitment, hiring, training of testers, and posttesting of both experimental and control children were carried out during the month of April and the first half of May. At sites with later start-up dates, recruitment procedures began during the first two weeks of May, and testing began as the 150-days-of-instruction criterion was met. Testing was completed in early and mid-June at these sites.

Test supervisors generally remained on site during the testing to ensure consistency in test administration procedures and uniform quality and completeness of the data collected. Completed test packages were returned to Juárez and Associates for data preparation and analysis.

Since all of the coders, as members of Juárez and Associates' in-house staff, were familiar with the evaluation project and had extensive previous experience in the scoring and coding requirements for each test, a three-hour training session was judged to be sufficient to review procedures to ensure consistency and efficiency in the data preparation.

Table 3. Child sample by language preference and treatment classification

| TREATMENT | LANGUAGE PREFERENCE | UN MARCO ABIERTO | | AMANACER | | ALERTA | | NUEVAS FRONTERAS | | Treatment TOTALS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | I | II | I | II | I | II | |
| EXPERIMENTAL HEAD START | Spanish | 20 | 16 | 10 | 40 | 7 | 4 | 30 | 10 | 137 |
| | English | 14 | 19 | 20 | 2 | 17 | 11 | 2 | 21 | 106 |
| COMPARISON HEAD START | Spanish | 23 | 8 | | 27 | | | 34 | 15 | 107 |
| | English | 10 | 2 | * | 1 | * | * | 1 | 20 | 34 |
| STAY AT HOME COMPARISON | Spanish | * | 10 | 5 | 9 | 4 | 2 | * | * | 30 |
| | English | | 1 | 23 | 0 | 4 | 0 | | | 28 |
| SITE TOTALS | | 67 | 56 | 58 | 79 | 32 | 17 | 67 | 66 | 442 |

* not applicable

e. Sample

Table 3 depicts the distribution of children included in the evaluation sample according to site, type of treatment, and language preference. As can be seen, the total sample of 442 children is made up of 243 experimental children and 199 comparison children. There is a slight predominance of Spanish-preferring children in the experimental Head Start sample and a great predominance of these children in the Head Start comparison groups. The distribution of these children is not consistent across all sites. Over 70 percent of the total comparison sample received some type of Head Start experience.

As is often the case in the evaluation of social programs, practical, ethical, and logistical considerations made the recruitment and random assignment of children to experimental treatment and no-treatment control groups impossible. As can be seen from Table 3, samples varied both across sites within a model and across models. Following is a description of the samples of each site.

- Un Marco Abierto

Site I, East Los Angeles, California. A total of sixty-seven (67) children comprised the sample at this site. Thirty-four (34) children were randomly assigned to three classrooms at the experimental Head Start center. Owing to parents' tendency to search out a preschool when their children was assigned to the stay-at-home control group, the thirty-three (33) children making up the comparison group at this site were located in three classrooms of a nearby Head Start. One comparison classroom (15 students) was randomly assigned from the original list of children. Two other classrooms were selected intact to serve as the remainder of the comparison group.

Site II, Milwaukee, Wisconsin. Sixty-one (61) children formed the final sample at this site. Thirty-eight (38) experimental children were nonrandomly assigned to five classrooms of the Head Start program. The comparison group consisting of thirty-three (33) children was comprised of twelve (12) children involved in a Home-Based Head Start program and eleven (11) who received no preschool exposure. Though the original sample was randomly assigned to either the experimental or control group, the long delay in opening the center led to a high attrition rate among both groups and necessitated the recruitment of additional children on a nonrandom basis.

- AMANECER

Site I, Corpus Christi, Texas. Fifty-eight (58) children constituted the sample at this site. Thirty (30) were randomly assigned to three Head Start classrooms. The control

group was comprised of twenty-eight (28) children who were not exposed to preschool. Because of logistical problems resulting in delays in providing health care benefits to the control children, 80% of the original sample was lost, requiring the recruitment of additional children for the final nonrandom control group sample.

Site II, Laredo, Texas. A total of eighty-one (81) nonrandomly selected children comprised the sample at this site. Forty-three (43) children were placed in three experimental classrooms within a Head Start center. The comparison sample consisted of twenty-nine (29) children who were selected from five classrooms in other Head Starts and nine children who received no preschool exposure. Local administrative decisions together with delay in hiring a local health care coordinator forced the evaluators to accept children from intact classrooms and to recruit some stay-at-home children.

- ALERTA

Site I, South Bronx, New York. Thirty-three (33) nonrandomly assigned children formed the sample at this site. Twenty-five (25) in three classrooms constituted the experimental group while eight (8) comprised the control group. The minimal number of control children at this site was a function of the high transiency rate in the area and of the fact that many of the original twenty-four (24) control children were on the waiting list for Head Start and entered the program during the year.

Site II, Lower East Side, New York. Nineteen (19) nonrandomly selected children were in the final sample. Of these, the fifteen (15) experimental children were in the two classrooms at one Head Start center while the four (4) control children received no preschool experience. Delays in recruitment and in the hiring of a health coordinator contributed to the small sample size at this site.

- Nuevas Fronteras de Aprendizaje

Site I, Rio Grande City, Texas. A total of sixty-seven (67) children constituted the randomly assigned sample of the experimental group and the Head Start comparison group at the Rio Grande site. Thirty-two (32) formed the experimental group at three classrooms in one Head Start center while thirty-five (35) comprised the comparison group located in another Head Start program nearby. The use of a comparison sample enrolled in a Head Start was a result of delays in recruitment of children for the control group.

Site II, Corona, California. A final sample of sixty-eight (68) nonrandomly selected children participated in the research at this site. Thirty-two (32) were enrolled in three experimental classrooms at a Head Start center; thirty-six (36) constituted the comparison group located in another Head Start. Delays in opening the experimental center and changes in administrative personnel contributed to the nonrandom nature of the sample at this site.

Therefore, complete random assignment of children to experimental and comparison groups was achieved at only one site, Rio Grande City. At other sites the evaluation can be characterized as quasi-experimental group/comparison group designs (Kerlinger, 1973). All comparison preschools were Head Start centers and, as will be shown in the sections describing each site, all had teachers with at least some ability in English and Spanish who used both languages in the classroom. Thus, the overall objectives of the programs in the areas of language, concept, and socioemotional development were similar for both experimental and comparison group children. In such instances if no pretest differences existed, significant differences between the groups may be unlikely. However, where such results favoring the experimental group are found, they can be viewed as the effects of systematic bilingual instruction provided by a model.

The relative imbalance of Spanish- and English-preferring children was a result of both the criteria of selection and the linguistic characteristics at some sites. As the guidelines to the sites stated only that at least half of the children had to be bilingual or Spanish dominant, but gave no such criteria for the recruitment of English-speaking children, in some cases an overabundance of Spanish-speaking children was recruited. In other cases it was not possible to find a sufficient number of English-speaking children in a given community. Thus many of the contrasts between experimental and comparison children were limited to Spanish-preferring children.

The total sample reflects a reduction of about 17% from the 554 children in the pretest sample. Table 4 presents the number and percentage of children who left the evaluation before posttesting according to site, treatment group, and language preference. It can be seen that the sites ALERTA I and ALERTA II were most severely affected by sample attrition, especially in the control classifications. This is a result both of the strategy at those centers of considering children on the waiting list for inclusion in the comparison groups and of the general transiency in those areas of New York City. With the exception of these two sites, sample attrition appears to have been a random phenomenon for site, treatment group, and language preference classification.

Table 4 . Attrition of pretest children by language preference and treatment classification.

| | | UN MARCO ABIERTO | | AMANACER | | ALERTA | | NUEVAS FRONTERAS | | TOTAL SAMPLE |
|---|---|---|---|---|---|---|---|---|---|---|
| TREATMENT | Language Preference | I | II | I | II | I | II | I | II | |
| EXPERIMENTAL HEAD START | Spanish | 20%(5)* | 11%(2) | 25%(2) | 5%(2) | 25%(3) | 25%(1) | 14%(5) | 23%(3) | 14%(23) |
| | English | 7%(1) | 9%(2) | 20%(6) | 0% | 11%(2) | 20%(3) | 0% | 15%(4) | 14%(18) |
| COMPARISON HEAD START | Spanish | 12%(3) | 33%(5) | ** | 13%(4) | ** | ** | 6%(2) | 11%(2) | 13%(16) |
| | English | 23%(3) | 60%(3) | ** | 0% | ** | ** | 50%(1) | 13%(3) | 22%(10) |
| STAY-AT-HOME COMPARISON | Spanish | ** | 0% | 17%(1) | 0% | 64%(7) | 33%(1) | ** | ** | 23%(9) |
| | English | ** | | 8%(2) | 100%(2) | 69%(9) | 71%(5) | ** | ** | 36%(17) |
| SITE TOTALS | Spanish | 16%(8) | 16% | 21%(3) | 7%(6) | 43%(10) | 29%(2) | 10%(7) | 16%(5) | 15%(48) |
| | English | 14%(4) | | 15%(8) | 33%(2) | 35%(11) | 36%(8) | 25%(1) | 14%(7) | 20%(45) |
| | Both | 15%(12) | | 16%(11) | 9%(8) | 39%(21) | 34%(10) | 11%(6) | 15%(17) | 17%(93) |

* = percentage decrease from pretest to posttest; (N) = number of children dropped from sample
** not applicable; no children in cell

Investigation of the equivalence between the pretest sample and the final analysis sample was made from two perspectives. In one perspective, subjects who left the pretest sample (attrition group) were directly compared to subjects who remained (resultant group). Comparison between these two groups was made separately for subjects of each language preference using univariate analysis of variance on pretest scores of concept development, language comprehension, and language acquisition measures. The statistical models that were analyzed were 2 X 2 designs that included treatment group and treatment group X sample group as factors. If either of these effects proved to be nonsignificant, the model was rerun as an independent t test between sample groups. Using this method, only one of 12 group comparisons between sample groups was found to be significant (t test on the PSIS measure for Spanish-preferring children, $p \leq .03$; Attrition Group: N= 47, X= 11.62; Resultant Group: N = 273, $\bar{X}$ = 13.34).

A second perspective used for examination of the effects of sample attrition involved comparisons between the entire pretest sample and the resultant sample. Sample group comparisons made from this perspective lack the intuitive directness of those made from the first perspective, as 80% of the subjects in the pretest sample group were also subjects in the resultant sample group. The overlapping nature of the contrasted groups is, however, compensated for by greatly increased numbers of subjects within subgroups of the statistical models used, and hence greater statistical power.

From the second perspective of sample attrition evaluation, internal consistency coefficients for 12 child psychometric measures were first compared between the two samples stratified by language preference. Without exception, the pretest and final sample coefficients were in excellent agreement, differing by at most three percentage points. Multivariate analysis of variance (MANOVAs) were also run to compare differences in the number of statistically different findings obtained when the same MANOVA model was run separately in each sample. Two types of MANOVA models were run, one contrasting Head Start and control treatments by site and one contrasting Head Start and control treatments by site within a curriculum model. Each type of model was run with different dependent variables for Spanish- and English-preferring children. MANOVA analysis revealed that five significant differences between Head Start and control groups were present in the final sample that were not present in the initial sample. In addition, two significant differences between groups and one significant difference between sites were found in the initial sample that were absent in the final sample. For the purpose of assessing the effects of attrition, 74 separate MANOVA models were run in all. The eight changes in obtained/not obtained significant findings observed between samples generally occurred at sites where comparison groups in the final sample were reduced in size. It was concluded from these analyses that, for the psycho-

metric variables of relevance in this evaluation, sample attrition was a random phenomenon.

In addition, modification to the pretest sample was made on the basis of scores reported both at pretest and at posttest. Twelve subjects were deleted from the sample because their patterns of scores at pretest and/or at posttest indicated that they had failed to respond to the tests in an interpretable manner. For another 10 subjects, patterns of the children's home language use as described by their parents and their scores on the Spanish and English language measures administered at pretest suggested that they had been misclassified at pretest. Language preference classifications for these subjects were therefore switched, resulting in a loss of test information on the four language production scoring measures which were administered only in the first or preferred language.

Test score information was also lost owing to the use of more rigorous procedures for classifying a child as unable to perform on a test in this phase of the evaluation than were used in the initial analysis in pretest data (Bolus et al., 1980). Many test scores previously reported as zero were considered missing values in analysis reported here, as children did not meet the new criteria for continuing testing. The percentage of test scores, excluding those for perceptual motor tests, excluded from the sample for this reason was about 3.5. An additional 55 individual scores were set to missing because the pattern of pretest and posttest scores differed radically from the normal distribution of scores. In most cases pretest scores that seemed unreasonably high in comparison with posttest scores were deleted, but posttest gains from pretest scores that appeared to be unreasonably high were also eliminated.[8] Score deletion decisions were made for the entire sample, without consideration of treatment group assignment and other subgroup classifications. A consequence of this approach is that the numbers of children used in each analysis may vary for individual scoring measures.

f. Data Analysis

Both conceptual and empirical issues influenced the data analysis procedures and the adjustments made to account for sample limitations. Given the differing approaches of the four curricula (despite their similar overall goals) and the varying characteristics of the samples, it was thought inappropriate to contrast the Head Start bilingual bicultural curricula directly. Rather, the implementation of each curriculum model was viewed as being a separate experiment and was therefore evaluated independently. An exception to this view was made to provide an evaluation of the general effects of the bilingual bicultural Head Start programs in comparison with the other Head Start preschool programs.[9] Thus, excepting these "composite" curricula comparisons, any attempt to include model or site

nested within model as factors within the experimental designs used to evaluate treatment effects was precluded on conceptual grounds. Further, as noted earlier in the section on sampling, limitations in the numbers of subjects obtained in certain cells of the sampling plan precluded the examination of certain treatment group contrasts at all sites. For example, at only two of the eight treatment sites were there sufficient numbers of children in all language and treatment classifications to permit statistical analysis by language preference.[10]

Notwithstanding these considerations, it was possible to investigate various subgroupings of children to provide a number of different perspectives for the interpretation of curriculum model treatment effects. Subgroups were formed according to combinations of treatments administered, within subject classification factors. Within subject classifications, factors employed were child's sex, child's language preference, and, for Spanish-preferring children, pretest level of English ability as measured on each of three English language tests -- PSIE, EMLU, and ECOMP.

Table 5 presents an overview of the subgroup contrasts used to evaluate the effects of the different curriculum models. Each row of the table represents one combination of subgroups contrasted on a number of scoring measures, (e.g., Row 4 shows experimental and comparison Spanish-preferring children at Un Marco Abierto I contrasted on six constructs). Columns in the table indicate the subject classification factors used to form the contrasted subgroups. The first column depicts the models contrasted. The second column, "subject selection," indicates the number of sites used in the analysis. The next three columns show the type of treatments contrasted.

The columns under the heading "subject stratification factors" (language preference, entry level ability) designate factors that were used for subject selection. It was generally not possible to compare subjects classified at various levels of these factors within a statistical model. In the case of language preference, this was a result of the fact that score distributions of children of different language preference differed so markedly that parametric statistical analyses were precluded. In the case of entry-level ability, the small number of subjects made such analyses unfeasible.

The next columns list those factors which were contrasted within treatments. Levels of the factors of site and sex, when studied, were always directly compared within the statistical model used to evaluate treatment effects. It was thus possible to examine the differential effects of these factors upon treatments. The subject grouping variable of entry-level ability was used both as a subject stratification variable and as a factor to be con-

# Table 5. Subgroup comparisons used for evaluations of Head Start bilingual bicultural curriculum models.

| MODEL | SUBJECT SELECTION | COMPARISON GROUP CONTRASTED WITH EXPERIMENTAL HEAD START GROUP | | | SUBJECT STRATIFICATION FACTORS | | FACTORS CONTRASTED WITHIN TREATMENTS | | | STATISTICAL DESIGN [2] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Head Start Comparison Group | Stay at Home Group | Both Contrast Treatments [1] | Language Preference | Entry Level Ability | Site | Sex | Entry Level Ability | |
| **CHILD** | | | | | | | | | | |
| 1. Composite | 5 sites | * | | | Spanish | | * | | | 2 x 5, R |
| 2. Composite | 5 sites | * | | | Spanish | | | | * | 2 x 2 |
| 3. Composite | 2 sites | * | | | English | | * | | | 2 x 2, R |
| 4. Un Marco Abierto | Both sites | * | | | Spanish | | * | | | 2 x 2, R |
| 5. Un Marco Abierto | Site I | * | | | Spanish | | | | * | 2 x 2 |
| 6. Un Marco Abierto | Both sites | * | | | English | | | | | 1 x 3 |
| 9. Amanecer | Site II | * | | | Spanish | | | | * | 2 x 2, R |
| 10. Amanecer | Site II | * | | | Spanish | * | | | | 1 x 2 |
| 11. Amanecer | Site I | | * | | English | | | | * | 2 x 2, R |
| 14. Nuevas Fronteras | Both sites | * | | | Spanish | | * | | | 2 x 2, R |
| 15. Nuevas Fronteras | Site I | * | | | Spanish | * | | | | 1 x 2 |
| 16. Nuevas Fronteras | Site II | * | | | English | | | | | 1 x 2, R |
| **MOTHER** | | | | | | | | | | |
| 19. Composite | 8 sites | | * | | | | | | | 1 x 3 |
| 20. Un Marco Abierto | Site I | | * | | | | | | | 1 x 2 |
| 21. Un Marco Abierto | Site II | | * | | | | | | | 1 x 2 |
| 22. Amanecer | Site I | | * | | | | | | | 1 x 2 |
| 23. Amanecer | Site II | | * | | | | | | | 1 x 2 |
| 24. Nuevas Fronteras | Site I | | * | | | | | | | 1 x 2 |
| 25. Nuevas Fronteras | Site II | | * | | | | | | | 1 x 2 |

[1] Subjects in the comparison Head Start and Stay-at-Home comparison groups were either compared to each other (table entry *), or pooled together into one group (table entry **).

[2] The notations used here specify both the number of design factors contrasted with each other and also the number of levels within each contrasted design factor. For example, 2 x 5 indicates the comparison of two factors, one of two levels (treatment), and one of five levels (site), in a "two way" design of ten cells. The R notation indicates that non-significant effects were deleted from the models in which they were initially examined. Results reported in the analyses are for the reduced models when so indicated.

trasted to treatments. Its use depended upon the number of subjects within each of the two entry-level classifications at each site. If a sufficient number of subjects was not available at both levels of this variable, use of the measure as a blocking factor was precluded.

The "statistical design" column of the table depicts the number of subgroups that was contrasted within the statistical design that is characterized by the aggregate of information in a row. A summary of the types of subgroup comparisons represented is as follows:

- Composite comparison. Treatment and comparison groups across five and two sites for Spanish- and English-preferring children, respectively, were contrasted to investigate the effects of participation in the bilingual bicultural curricula. All sites where subjects were available in sufficient number in both the experimental and comparison groups to allow for statistical comparison were included in the analyses. Three of the curriculum models were used in the contrast of Spanish-preferring children and two in that of the English-preferring group. In addition, mothers from all eight sites were used to examine the composite effects of the curricula on parents.
- Model level comparisons. Experimental Head Start and comparison Head Start subjects at two sites within a single Head Start curriculum model were contrasted. Model level comparisons were possible for Un Marco Abierto and Nuevas Fronteras Spanish-preferring children. All model level comparisons used site as a factor within the statistical model used to evaluate treatment effects. Model level comparisons were viewed as preferable to site level comparisons owing to their greater statistical power for the examination of treatment effects.
- Site level comparisons. These include only subjects from one site in treatment group comparisons. Such comparisons were used to examine treatment effects in cases where there were insufficient numbers of subjects to make model level comparisons. Site level analysis was also used in discussions of the observational findings. Multiple site level comparisons for the same site differ according to the selection of subject stratification factors, factors contrasted with treatments, and nonexperimental Head Start contrast groups employed. Each comparison thus provides somewhat different information about the effects of the experimental Head Start treatment implemented at the site.
- ALERTA model. There was an insufficient number of contrast group subjects at the ALERTA model sites to allow either within-site or within-treatment, experimental Head Start versus comparison treatment group contrasts. Inferential

statistics were therefore not used in the evaluation of ALERTA. Rather, pre- and posttest mean scores were presented in conjunction with the analysis of the qualitative data for this model.

Univariate analysis of variance (ANOVA) and univariate analysis of covariance (ANCOVA) were the statistical techniques used to interpret the significance of differences between posttest means of contrasted subgroups of subjects. To determine which, if either, of these techniques would be used, a series of preanalysis data checks and covariate selection procedures was carried out. Preanalysis study was made independently for each scoring measure and was in essence repeated for each subgroup comparison that was made.

The first step in the preanalysis sequence was the visual inspection of univariate plots. This step had two goals: to determine whether the distributions of scores on the scoring measure being examined were similar in shape for all subgroups being contrasted and to determine if sufficient variance existed in subgroup score distributions to allow parametric statistical analysis. Determination of the parametric adequacy of score distributions was viewed as particularly important for the perception measures, on which many children reached ceiling criterion, and for nonpreferred language measures, on which many children scored at floor level. Interpretation of scoring measures judged to be inadequate for parametric analysis was limited to an examination of posttest mean difference.

The second step in the preanalysis sequence was determination of the existence of covariates for those measures judged to be appropriate for parametric analysis in step one. Because of the quasi-experimental nature of most subgroup contrasts, covariates were sought both to adjust for preexperiment differences between contrast groups[11] and also to improve the precision of estimation of treatment effects.

Seven covariates were available for modification of dependent variable scores. These were chosen either for their relationship to child achievement as shown in other studies or for their hypothesized relationship to the scoring measures used in this evaluation (e.g., home language environment). The covariates are as follows:

1. PRETEST - Pretest scores of the dependent evaluation measure
2. FAC - Child's Spanish/English home language environment[12]
3. AGE - Child's chronological age (months)[13]
4. INC - Family income (units of $1,000)
5. EDASP - Parent's grade level/educational aspirations for the child[14]

6. PTCH - Parent's self-rating of the number of preschool-level skills/information items taught to child

7. PRESENT - Number of days in attendance at preschool treatment program

Covariates were selected for each scoring measure by following a three-step selection process. First, a forward selection, stepwise regression procedure was used to select covariates that correlated significantly with the scoring measure. A hierarchical inclusion strategy was employed, with pretest scores allowed to enter first, and FAC, AGE, INC, ESASP, and PTCH competing among themselves for entry after the pretest measure was examined. The inclusion-level hierarchy presumed that pretest scores would most completely account for preexperiment differences between contrasted subgroups; that no a priori conceptual preference existed among the measures FAC, AGE, INC, ESASP, and PTCH; and that variance on all of these measures should be viewed as being conceptually closer in relation to the pretest scoring measure than variance in the measure PRESENT. Since scores on PRESENT, in contrast to scores on other covariate measures, would be related to differences in the amount of treatment received rather than differences existing at pretest, PRESENT was allowed to enter only after all other covariate measures had been considered. Those covariates accounting for a significant amount of the variance in the pretest scoring measure for each contrast were selected to be used in the analysis.

After covariates were selected, bivariate scatter plots of scores between each selected covariate and the scoring variable were inspected by subgroup to assure that adequate variance existed for regression.[15] If suspect plots were encountered, the covariate was dropped from consideration and the stepwise procedure rerun with deficient covariates ineligible for entry. Covariates judged adequate in the plots were then tested for homogeneity of within-subgroup regression slopes. Covariates failing the test (at $p \leq .05$ level) were dropped from consideration and the stepwise procedure reinitiated with a reduced set of predictor variables.[16]

All covariates selected for a dependent measure were used in ANCOVA comparison of subgroup means. If no covariates had been selected or if none remained eligible for inclusion after failing score distribution or regression slope checks, ANOVA was used for subgroup mean comparison. Alpha was set at $p \leq .05$ for specification of statistically significant findings, and at $.05 < p \leq .10$ for specification of statistically suggestive findings. (See Appendix F for source tables for all comparisons.). Significant effects of more than two levels were examined using pairwise mean comparisons at a normal $p \leq .05$ level of significance.

Ten subjects per subgroup was generally defined as the minimum number of subjects required for analysis to be conducted. However,

because some covariate scores were missing, subgroup numbers in reported analyses were in a few instances as small as six. In all analysis conducted, child (or mother) was used as the unit of analysis for statistical interpretation. This decision resulted from consideration of both the small numbers of classrooms per site, and, at a higher level of aggregation, by having only two sites per curriculum model.

## 2. Parent Interview

The parent instrument was an individually administered interview schedule consisting of 56 items developed in Spanish and English versions by Juárez and Associates as an index of parental attitudes toward education in general and bilingual bicultural education in particular, of parental perception of their own language abilities and teaching skills, and of parental aspirations for children's educational attainment. The parent interview also collected data on the background characteristics of participating families and the activities of their children.[17]

### a. Parent Measures and Instrumentation

As the great majority of the respondents at all sites were mothers, for the sake of consistency only these individuals were used in the analysis. Items from the interview were grouped under four general topics related to the evaluation goals: language spoken by the child at home, mother's language usage, mother's role as teacher, and mother's attitudes toward education. Table 6 lists the 12 mother response measures grouped under these headings and indicates the abbreviations by which they are discussed. A brief discussion of mother measures follows.

(1) Language Spoken by Child at Home. Two measures of a mother's assessment of her child's language were created from items on the Parent Interview. The two measures assessed a mother's perception of her child's language abilities in Spanish (CSPAN) and in English (CENG). The ratings, made on four-point Likert-type scales, reflected the mother's judgment of her offspring's ability to both speak and understand a language.

(2) Mother's Language Usage. The three measures of mother's language usage reflect a mother's rating of her own language abilities as well as her use of Spanish or English in instructing her child. Measures of speaking ability are each formed by one item and are designed MSTALK for Spanish and METALK for English. The measure

Table 6 . Parent interview measures.[1]

| CONSTRUCT | MEASURE | Abbreviation used in Tables[2] | Number of items | Number of scale points |
|---|---|---|---|---|
| Language Spoken by the Child at Home | Child Spanish Language Ability | CSPAN | 2 | 4 |
| | Child English Language Ability | CENG | 2 | 4 |
| Maternal Language Usage | Mother Spanish Speaking Ability | MSTALK | 1 | 4 |
| | Mother English Speaking Ability | METALK | 1 | 4 |
| | Mother Spanish/English Instruction | MSTCH/METCH[3] | 11 | 3 |
| Mother's Role as Teacher | Provides Formal Instruction | MTCH | 11 | 2 |
| | Provides Instructional Playthings | PLAY | 13 | 2 |
| Mother's Attitudes Toward Education | Local School Evaluation | SCHLJOB | 1 | 5 |
| | School Vocational Preparation | CAREER | 1 | 5 |
| | Importance of Bilingual Education | BLING | 3 | 5 |
| | Importance of Child's Self Concept | SLFCON | 3 | 5 |
| | Desired Grade Level Achievement for Child | MEDASP | 1 | 19 |

[1] Parent interviews were conducted twice, at the beginning and the end of the preschool year.

[2] In these abbreviations a leading C (with the exception of CAREER) refers to child, while a leading M means mother. For example, MTCH is read "mother provides formal instruction."

[3] Companion measure that provides identical information.

of language used in instruction is bipolar and is formed from 11 items of three scale points -- Spanish, bilingual, and English. The measure is designed to assess the language in which the mother attempts to teach her child different concepts. The concepts themselves define another measure, to be discussed below. The bipolar nature of the scale was removed by defining two scales for the same items and reversing the direction of the scoring. MSTCH is the resultant scale that assesses Spanish language instruction, and METCH is its companion measure that assesses English language instruction.

(3) Mother's Role as Teacher. Two measures of a mother's self-perceived role as teacher were defined from parent interview questions. One scale, MTCH, relates closely to the mother's language usage measure MSTCH/METCH defined above. Mothers were asked to indicate "which of the following have you tried to teach your child." Examples of the 11 concept domains (items) for which mothers provided a yes or no response are colors, concepts like big-little, up-down, before-after, and so on. The scale PLAY, which has a similar format, summarized a mother's responses to a checklist of 13 educational playthings that her child may or may not have had the opportunity to play with at home.

(4) Mother's Attitudes Toward Education. Four attitudinal measures defined from five-point Likert-type scales of agreement were used to assess mothers' attitudes. Two measures are one-item scales. SCHLJOB elicits mothers' responses to the statement, "The schools in our community are doing as good a job of educating our children as possible." CAREER elicits mothers' responses to the statement, "The schools in our community are not teaching our children the things that will help them get ahead in the world." Two other attitude measures, each comprised of three items, were defined by principal components analysis to summarize mothers' responses to 23 attitude-eliciting statements that included the two just mentioned, SCHLJOB and CAREER. The two measures were interpreted to reflect attitude toward bilingual education (BLNG) and attitude toward the importance of child self-concept (SLFCON). The principal component analysis (with oblique rotation) was conducted with 29 nonmother respondents on whom pre-post parent attitude data were acquired, and did not include responses from 24 mothers whose responses were included on other measures. The latter 24 cases were excluded because they did not readily fit into the factor space defined by other respondents. For purposes of interpretation, an average of observed item scores was used rather than the principal component scores.

A fifth measure related to mother attitudes is MEDASP. This one-item scale reflects the grade level of achievement desired by the mother for her child.

b. Reliability of Parent Instrument

Reliability coefficients are presented in Appendix G for pretest and posttest measures composed of more than one item both for all mothers in the sample and for subclassifications of mothers formed according to treatment classification of child. Internal consistency reliability is acceptable for the measure PLAY and good to excellent for all other measures.

Correlations among mother measures are indicated in Appendix H. Several patterns of the relationship are apparent. High positive correlations occur among child and mother language measures of the same language, while high negative correlations occur among measures of different languages. This pattern of relationship is not too surprising, since it is likely that mother/child dyads have comparable language preference. A second pattern of relationship occurs among attitude measures (i.e., SCHLJOB, CAREER, BLING, and SLFCON). Very low correlations existed among these measures with the exception of the relationship between the measures SCHLJOB and BLING, which were formulated together. This indicates that attitude measures are relatively independent of each other.

c. Parent Interviewing Procedures

Originally, the administration of the parent interview was scheduled to take place simultaneously with the testing of children. Owing to delays in OMB approval of the instrument, pretest data collection was forced to begin when pretesting of experimental and control children was completed. At all the sites, posttest recruitment, training, and collection of parent and child data occurred concurrently. Generally, interviews took place in the homes of respondents.

d. Parent Sample

An examination of the demographic information on the 401 respondents for whom pre- and posttest parental data were available revealed that approximately 6% were not mothers. In order to provide the most internally valid and homogeneous sample possible, it was decided to statistically interpret the responses of mothers only. The final sample used in the evaluation was comprised of 375 mothers.

e. Data Analysis

As with the child measures, univariate analyses of variance (ANOVA) and univariate analyses of covariance were used to interpret differences between contrasted groups of mothers. The details pertaining to use of these analysis techniques is provided in the previous section related to child competency measures. It suffices here to state that in all analyses the mother was the unit of analysis and comparisons were made both across all sites and at the site level, with pretreatment interview results being employed as the covariate. The assumption of homogeneity of within-contrast group regression slopes was again checked for all ANCOVA models and where the assumption was not met, contrasts were not interpreted.

3. Teacher Questionnaire

The teacher questionnaire was specially developed by Juárez and Associates as a pre- and posttest measure. It was designed to gather information on the teachers' understanding of what is meant by the terms "bilingual" and "bicultural" in the context of an early childhood program and to assess their attitudes toward Spanish-preferring and bilingual children and their parents. In addition, the instrument tapped teachers' feelings toward classroom procedures such as their willingness to include parents in the preschool program, their sensitivity to the special ethnic and linguistic characteristics of Spanish-preferring and bilingual children, and their willingness to incorporate these characteristcs in a positive fashion in the teaching-learning process.

a. Measures

Table 7 summarizes the information gathered with the teacher questionnaire. As can be seen, a series of five open-ended items permitted teachers and aides to identify the major advantages of being bilingual and of participating in a bicultural multicultural curriculum for both Spanish and English native speakers. Responses to these items were collapsed into two areas -- integrative and instrumental orientation -- based on the frequently cited distinction established by Gardner and Lambert (1972)[18]. Those responses identifying advantages such as background and cultural awareness, intercultural communication, development of self-concept, socialization, and language acquisition for its own sake fell into the general category of integrative orientation toward bilingualism and bilingual education. Benefits relating to more pragmatic concerns such as better job opportunities or enhanced success in school indicated an instrumental motivation for second language learning and maintenance. A second set of questions consisting of 18 items in a five-point Likert-type format, varying from "strongly agree" to "strongly disagree," served as a measure of teaching-staff attitudes toward Spanish-speaking children and their parents. A similar format was used to investigate willingness of teachers to

Table 7 . Teacher questionnaire measures.

| CONSTRUCT | MEASURE | TARGET OR RESPONDENTS | FREQUENCY |
|---|---|---|---|
| Background Characteristics | Teacher Questionnaire | Head Start (HS) Teaching Personnel | Pre and Post |
| Attitudes Regarding Bilingualism and Bilingual Curriculum | Teacher Questionnaire (5 items) | Head Start Teaching Personnel and Administrative | Pre and Post |
| | Informal Interviews | Head Start Teaching Personnel | Periodic |
| Attitudes Regarding Spanish-Speaking Children and Parents | Teacher Questionnaire (18 items) | Head Start Teaching Personnel | Pre and Post |
| Attitudes Regarding Parental Involvement | Teacher Questionnaire (21 items) | Head Start Teaching Personnel | Pre and Post |
| | Informal Interviews | Head Start Teaching and Administrative Personnel | Periodic |
| Attitudes Regarding Bilingual and Hispanic Materials and Lessons | Teacher Questionnaire (10 items) | Head Start Teaching Personnel | Pre and Post |

include information received from parents, as well as the parents themselves, in an instructional program. Ten questions with a total of 21 items were used, not only to assess the respondents' perceptions of the utility of parent involvement, but also to elicit opinions as to how parents could most effectively be used. A final set of 10 items provided information on the importance the teachers and aides placed on incorporating certain materials or lessons geared to the needs of Hispanic or bilingual children into the teaching-learning process.

b. Sample, Questionnaire Administration, and Data Analysis

Although 42 teachers responded to the questionnaire initially, only 33 of these remained at the time of the posttest. During the same period that the children were being tested, the supervisor of testers administered the teacher questionnaire. The administration generally took place at an agreed-upon time with the entire sample for a site filling out the questionnaire at the same time. This group administration of the questionnaire, with the test supervisor present, took from 30 to 45 minutes in each instance. Each individual chose a Spanish or English version of the questionnaire, depending upon his or her linguistic preference. All completed questionnaires were returned to Juárez and Associates for coding.

In keeping with the general analysis plan, teacher responses were collapsed across all sites and analyzed by site. Given the small sample of teachers, it was inappropriate to use inferential statistics. Thus, frequency distributions were generated for the responses of teachers across the four domains specified by the evaluation contract, and these were used to tentatively explore trends in teacher attitude change over time.

E. Naturalistic Observation Component

The usefulness of qualitative techniques in educational research (Wilson, 1977) and in evaluations (Patten, 1980) has been well documented, as have the problems with overuse of the methodology (Rist, 1980) and difficulties in the reduction and analysis of data produced from such techniques (Miles, 1975). Juárez and Associates attempted to overcome some of the limitations that traditionally occur when observational data are used in evaluations by wedding the observational component of the evaluation to the educational goals of the Head Start Strategy for Spanish-speaking Children and those of the curricula being evaluated. Each curriculum developer helped to identify criteria that would reflect the degree of implementation of their respective curricula and criteria that would directly reflect impact on the participants. Thus, information consistent with those constructs measured by the tests and interviews was gathered. This approach allowed for the organization of quality control measures which assured the comparability

of data across all observers and furnished a methodologically independent cross-validation of the test results (cf., Campbell, 1974).

Two principal types of observational data were collected. Data on children, intended to augment the test data, were gathered within the classroom settings. Written protocols of the child observations made on a select subsample of experimental children at each of the research-intensive sites were coded for behaviors identified as objectives of the curriculum models. These behavioral samples focused on (1) language development, (2) language comprehension and recall, (3) concept development, and (4) socioemotional development.

In the area of language development, behaviors related both to linguistic competence and functional language competence, two areas also tapped by items on the standardized measures of language acquisition and language production, were examined. Observed behaviors related to language comprehension focused on the ability to recall events or tell a story as did certain items of the comprehension test. Similarly, behaviors in the area of concept development were those related to visual discrimination, seriation/sequencing, matching/classification, spatial and time relationships, symbolic representation and utilization of objects, whereas socioemotional development focused on school readiness, self-esteem, and motivation as did the testers' ratings.

Data on the nature and extent of implementation over time were recorded on a series of implementation forms. Data were collected on what teachers did in the classrooms, physical organization of the rooms, organization of individuals within the classroom, materials available, and other topics of interest. Target areas were related to model objectives in order to assess the congruence between the treatment as conceptualized and the treatments as actually implemented within a classroom or site. It is apparent that the manner in which a treatment is implemented in a classroom affects the behavior of participants in the program. Program participants, in turn, respond to classroom practices in ways that will influence the way in which a program is implemented. Accordingly, the behaviors of subsample children as recorded through ethnographic notes and focused observations were used to judge implementation. Further, the observational data on individual children were used to assess change over time across various developmental domains, as they furnished a series of observations on the behaviors of students in specific contexts designed to encourage certain behaviors. Finally, ethnographic notes taken outside the classroom permitted the identification of constraints and obstacles to implementation of a given model at a particular Head Start center or in certain locales.

## 1. Child Observations

### a. Ethnographic Notes

Notes consisting of narrative accounts, time logs, and inventories, related to classroom behaviors and model implementation, were kept by participant researchers and implementation researchers to record observations. Three separate note files -- topics, events, and individuals -- were created and an indexing strategy[19] which combined an etic and emic[20] approach was developed. This indexing system is trifaceted: the first component contains four superordinate category codes (e.g., Head Start community) and a series of subordinate ones (e.g., population characteristics); the second includes etic categories (also superordinate) which result from the cross-model objectives related to child outcome behavior for the four curriculum models (e.g., language use) and also contains a series of subordinate ones dealing with specific observable behaviors (e.g., uses present tense in Spanish); and the third contains emic categories generated by each fieldworker and reflects local concerns.

The indexing system was developed as an analytical tool in which broad-based descriptive goals were abandoned in favor of focused categories related to the goals of the evaluation. Particularly germane areas of interest were the feasibility of implementing the models in various locales and behavioral constructs identified by the curriculum developers as important outcomes for their model. The system was descriptive in that it offered comprehensiveness and analytic in that codes representing particular behaviors were quantified.

### b. Time and Event Samples

Systematic procedures building on the fieldworkers' observational and note-taking skills were also developed for the naturalistic classroom observations. These behavioral samples concentrated on a subset of children at three specified and preselected periods during the school year. Table 8 presents the general constructs that were tapped through these systematic observations.

Several steps were involved in selecting the subsample of children. Based on their observations of children in the different learning environments provided by a model, fieldworkers supplied information on those child characteristics which seemed to be indicative of distinct experiences in different contexts. Although the characteristics varied by site, all were chosen from a master list developed by the coordinator of fieldworkers in conjunction with the project staff. Sex, language preference, verbal ability, and ethnic group were common characteristics across all sites; cognitive style or family composition were

Table 8 : Child observation measures.[1]

| CONSTRUCT | INSTRUMENTS | TARGET OR RESPONDENTS | FREQUENCY |
|---|---|---|---|
| Language Acquisition | Focused observations | Subsample of approximately 15 Head Start (HS) children | 3 times |
| Language Comprehension | Focused observations | Subsample of HS children | 3 times |
| Language Production | Focused observations | Subsample of HS children | 3 times |
| Concept Development | Focused observations | Subsample of HS children | 3 times |
| Socioemotional Development | Focused observations | Subsample of HS children | 3 times |

[1] This table represents focused ethnographic observations only at the primary (PR) replication sites. Focused observations conducted twice during the year at the second (IR) replication sites are not included in this report.

deemed important at particular sites. The information on child characteristics provided by the fieldworkers was used in a stratified random selection of the subset of 15 experimental children at each research-intensive site. Five children were selected from each room. In general, they came from those members of a class who had been pretested. When, however, no tested child was available to fill a cell, untested children were chosen ensuring that the effects of a model on different children could be studied. A total of seven of the 60 original subsample children fell into this category of untested children. The rate of subsample attrition over the evaluation year was approximately three children per site, resulting in a final subsample of 48 children, distributed as follows: Un Marco Abierto I - 11 chidren (6 Spanish preferring and 5 English preferring); AMANECER I -- 11 children (5 Spanish preferring and 6 English preferring); ALERTA I -- 12 children (6 Spanish preferring and 8 English preferring); Nuevas Fronteras I -- 12 children (9 Spanish preferring and 3 English preferring).

During November focused observations were begun by the participant researchers at each of the four intensive observation sites. The second period of observations took place in February and March, and the final series of observations occurred in April and May. The methodology by which data were collected combined the strategies of time and event sampling and built on the previous observational skills of the participant researchers. Three types of events were selected: (1) those involving systematic interaction with the teacher or other adults for language and concept development; (2) those related to language and concept development but which were unstructured in terms of adult-child interactions; and (3) situations organized to emphasize child-child interactions. To prevent observer bias and control for the context of observed behavior, each subset of children from each classroom was randomly assigned to each event or context sampled, and each child was observed individually for an equal amount of time proportional to the length of the event over a period of days.

The unit of analysis for data collection was the individual child and the data collection technique used was again a running log. Fieldworkers noted the time at which an observation began and then proceeded to describe the behaviors of the designated child, his or her verbal interactions with others, and general socioemotional comportment. Note was made of any transitions occurring during the observation period and the time of such transitions. After each day of observations the fieldworkers rewrote their fieldnotes and categorized their observations using the language use, concept development, and socioemotional behavior codes related to cross-model objectives as defined in their field manual.

c. Data Analysis

The guiding principle in the analysis of the observational data was that of triangulation (Denzin, 1978); that is, the data were used to provide methodologically independent measures of teacher and parent attitudes, classroom implementation, and child outcomes which were compared with interview, checklist, and test results. In addition, the observational data permitted an examination of the sociocultural contexts in which the sites were found.

(1) Analysis of Developmental Trends. Tabulations of the subsample observational data were accomplished through use of the indexing and coding system. Owing to the small time sample at the first of the three observation periods, relative frequencies were computed for the linguistic and behavioral responses observed for each child at each of the three time periods. These frequency counts were analyzed separately for Spanish- and English-preferring children to identify trends over time in individual behaviors related to the constructs of language usage, comprehension and recall, concept development, and socioemotional functioning.

Traditionally, quantitative language measures and such linguistic techniques as error analysis have provided valuable insights into language learners' mastery of certain basic morphemes and syntactic forms. Current research in first and second language acquisition, however, has shown that the learning of a language involves much more than achieving grammatical correctness (Hatch, 1978). It requires developing the ability to handle the semantic, communicative, and pragmatic functions of grammatical forms -- all of which combine to form learners' general communicative competence. Such an approach to language learning requires a focus beyond the traditional linguistic unit of the sentence to the discourse level, where the interactional aspects of conversation, including the type and frequency of input provided to the learner, can be investigated (Sinclair & Coulthard, 1975).

This perspective guided sampling of the verbal interactions in the fieldnotes compiled on the subsample children. The entire corpus of data for each subsample child was reviewed. Speech samples that provided the best cross-section of structure and functions typical of the learners' stage of language development, concept formation, or socioemotional functioning were chosen for in-depth analysis. Verbal interactions were investigated for change over time in grammatical or conceptual correctness as well as in the degree to which the child's language use and/or behavior met the functional needs of that social context, including the activity engaged in, other speakers, and the setting.

(2) Individual Profiles. The fieldworkers also wrote individual profiles of the children who were under intensive observation at their sites. The profile consisted in part of a prediction of each child's performance on each measure of the test battery. Fieldworkers first reviewed descriptions of the tests and examined the tests themselves to become familiar with the extent and content of each measure. Estimates were then made of each child's scores on all of the measures and a description of the child's observed behaviors in the classroom was given. The profiles thus were structured according to the same format and addressed content similar to that of the tests and classroom observations. These capsule descriptions were used in conjunction with analyses of the subsample children's discourse within specific classroom contexts over the course of the evaluation year.

(3) Data Integration. In addition, random samples of classroom observations were taken from the fieldnotes for each child made during the third observation period. The total time sample for each child was equal to the average time of administration of the test battery. The notes were scored either in terms of the total frequency of correct responses less the incorrect ones or, in the case of language acquisition, in the same manner as the test data (MLU). Subsample children were rank-ordered by their scores from each data set. The rank order correlations of these scores provided an indication of the relationship between what was practiced in the classroom by individual children and what was tapped by the tests.

As a result of the classroom observations it was possible to identify differences in the progress of children of the same language preference over time. These differences were observed to be related primarily to a child's entry-level abilities in the second language. Thus children were divided within a language group on the basis of their entry skills and both their posttest scores and the input they received over the school year were examined.

## 2. Implementation Observations

### a. Instrumentation

Assessment of the nature and extent of program implementation over time formed a key element in the observational data collection. Model-specific checklists and rating scales, which had been reviewed for accuracy by the curriculum developers, together with informal interviews, were used to collect data in each of the 23 experimental classrooms. Each participant researcher and each implementation researcher gathered implementation data during

three two- to three-week periods over the course of the school year. Implementation data consisted of information on schedule and organization, physical setting, material resources, student and teacher behavior, instructional activities, and staff attitudes (see Table 9 ). The forms contained a listing of the planned and actual classroom schedule of the day, a series of counts of the elements of a model identified in the curriculum as key features, an overall rating of the model with the classroom as the unit of analysis, and guides for structuring conversations with the personnel at a site around model-specific themes.

The strategy for completing various parts of the implementation forms included keeping a running log of notes to complement spot observations. A log was kept of the actual time during which activities occurred in the observation period (engaged time), as well as of the amount of time spent in transition between each activity. Notes were taken on all naturally occurring events within a given time period. To ensure that sufficient data were collected, a list was made of all individuals in the class (identified either by name or through a description of their clothing) before observations began. The behavior of each period for each activity (e.g., children who were engaged in one activity and children who were not) was then described. Such note-taking procedures, focused on particular situations that were specified by a curriculum model as promoting particular behaviors, allowed for an accurate estimate of overall classroom activities as they related to model features. The resulting data permitted estimates of, for example, the time spent in a specific area or the percentage of time that children were speaking English or Spanish. Although the data were summarized for the purpose of establishing an index of the degree of implementation, the raw data remain available and retrievable. A strength of the strategy is that it does not preclude the future examination of the raw data by either the evaluators or the policy planners in the light of different questions concerning how a program functioned beyond those of Juárez and Associates' contractual obligations.

b. Implementation Analysis

(1) Implementation Scores. Two types of data analysis were used to process treatment implementation data. Checklist data were quantified by asking each fieldworker to rate individual items of the implementation checklist for his or her model by using five-point Likert-type scales to estimate an item's importance to a curriculum model. These scores were then averaged across fieldworker raters for each item, and the average rating for each item was summed within each implementation category to provide an estimate of the importance of each category to the

Table 9. Implementation form measures.

| CONSTRUCTS | INSTRUMENTS | TARGET OR RESPONDENTS | FREQUENCY |
|---|---|---|---|
| Schedule and Organization | Implementation Checklists[1] | 3 Head Start Classrooms per site[2] | 3 Times |
| | Ethnographic Notes: Running Log of Sequence and Duration of Daily Activities | Head Start Teaching and Administrative Personnel | Periodic |
| Physical Setting | Implementation Checklists[1] | 3 Head Start Classrooms per site[2] | 3 Times |
| | Ethnographic Notes | Head Start Children and Teachers | Periodic |
| Instructional Materials | Implementation Checklists[1] | 3 Head Start Classrooms per site[2] | 3 Times |
| | Ethnographic Notes | Head Start Classrooms and Site | Periodic |
| Individual Behaviors | Implementation Checklists[1] | Head Start Children and Personnel | 3 Times |
| | Ethnographic Notes | Head Start Children and Personnel | Periodic |
| | Focused Observations | Subsample of Head Start Children | 3 Times |
| Instructional Strategies | Implementation Checklists[1] | Head Start Teaching Personnel | 3 Times |
| | Ethnographic Notes | Head Start Children and Teaching Personnel | Periodic |
| | | Subsample of Head Start Children | 3 Times |
| | Informal Interviews | Head Start Teaching Personnel | Periodic |

[1] Developed by Juarez and Associates.

[2] The only exception was Alerta II, which had only two evaluation classrooms.

model. Ratings were also combined to furnish an overall implementation score for each classroom within a model at each of the three implementation data-collection periods.

As the checklist data were being scored, fieldworkers independently listed all of the factors which they felt were either facilitating or impeding implementation of a model at their particular site. These lists were then taken by the coordinator of fieldworkers who organized them into a set of categories appropriate to all of the models. This summary set of categories was returned to the fieldworkers, who then used it to examine the data for patterns over time. The fieldworkers used the dates of the three implementation data collection periods as a mnemonic to help recall what was occurring with respect to a particular teacher or within a classroom. After having noted their impressions of what had happened relative to each category at each point in time, the fieldworkers returned to their fieldnotes and used the cross-referencing system to find instances that verified or refuted the impressions made using mnemonic-assisted recall. After the entire exercise was completed, each participant reseacher met individually with the coordinator of fieldworkers and patterns in data were discussed. These outlines were then elaborated into descriptions of the implementation process on each classroom at a site.

As part of the analysis of model implementation, frequency counts were made of the classroom staffs' (teacher and aide or assistant teacher) language use at different periods during the year. For the researcher-intensive sites all speech by the staff in each classroom during the three-month period in which the implementation assessment took place was considered in the analysis whereas at the sister site data were limited to the 10 days the implementation researchers were on site during each time period. The relative frequencies of language use over time were examined and related to the category of individual behaviors in the discussion of implementation results.

(2) Data Integration. Integration of the observation data and test and interview data was subsequently accomplished. The implementation forms provided data on five categories of implementation -- schedule/organization, physical setting, instructional materials, individual behaviors, and instructional strategies -- for three points in time. Contextual data from the ethnographic description of the implementation process at each site were then used to explain visible trends or change over time within a site and across sites within a model.

(3) Site Summaries. An additional data analysis strategy was the site summary. Using the first four categories of the indexing system devised by Juárez and Associates, researchers, upon their return from the field, wrote descriptions of the sites at which they had collected data. These were of an interpretive nature, as the descriptions had as an organizing theme the feasibility of implementing a particular model in other locales. Such analysis generated a rich set of working hypotheses about what was happening at a particular site and a retrievable set of observations supporting the hypotheses. Fieldworkers then met and reviewed their findings, identified major themes across models, and proposed general findings for each model. Seven major categories -- sociocultural environment, sample families, administration, school, teaching staff, control groups, and children's activities -- were identified as major areas under which the comparisons of each site implementing a particular model were presented.

## 3. Preparation of Personnel and Data Quality Control

### a. Recruitment and Training

Juárez and Associates developed a recruitment plan aimed at overcoming the inherent difficulties in finding able and experienced bilingual fieldworkers willing to make a commitment for one year of work in the field. The plan involved the use of both formal and informal recruitment techniques focusing on specific organizations and geographical areas. Job descriptions for the position of participant researcher were placed in such national outlets as the Chronicle of Higher Education and Anthropology Newsletter, while descriptions for the positions of coordinator/supervisor of participant researchers, data manager, short-term researcher, and participant researcher were sent to a variety of university placement offices, university departments, and State employment agencies. In addition, friends and colleagues of Juárez and Associates working in the areas of bilingual education, anthropology, education, and linguistics were contacted by phone. Job descriptions together with letters requesting any possible assistance in recruitment were also sent to all of the curriculum model developers and all members of the advisory committee. All recruitment efforts were concentrated in areas sharing cultural and linguistic characteristics with the replication sites.

From the list of 41 candidates for the positions the screening committee selected a short list of candidates on whom references were gathered and each of whom was interviewed in Spanish and English. A final screening took place and the finalists were offered positions. The coordinator/supervisor selected was bilingual, held a Ph.D., and had over 10 years of experience in ethnographic research among Latino communities both in the United

States and abroad. The data manager employed was bilingual and had expertise in both qualitative and quantitative research. All participant researchers and implementation researchers had graduate training, with one holding a Ph.D. in anthropology; all were bilingual with experience in ethnographic fieldwork, early education, or both. In addition to excellent academic and experiential backgrounds all of the individuals were selected as persons who would be sensitive to the local cultural and linguistic circumstances of the communities in which they would be working.

In training the fieldworkers in naturalistic observation techniques, the expertise of the project directors, the coordinator/supervisor of fieldworkers, and other Juárez and Associates staff members was supplemented by consultants from an extensive program for the training of naturalistic field observers developed over the past six years at UCLA. The training focused on a series of simulations of the actual fieldwork required of the participant researchers and implementation researchers during the first three months of data collection.

Training was holistic in the sense that each aspect of successful fieldwork in the preschool settings was continually related to other aspects and learning was highly experiential. In addition, formal learning experiences were structured to emphasize and encourage peer interaction and social synergy. The general content of the training period was as follows: (1) Week one -- introduction to the evaluation, role management, use of rating forms, fieldwork, ethics, introduction to ethnographic note-taking (2) Week two -- fieldwork, fieldnote styles, observational strategies, indexing systems, field interviewing techniques; (3) Week three -- simulation, fieldwork, debriefing, orientation to sites. Training also served to pilot the implementation forms as well as to test a number of different time and event sampling procedures related to interpersonal interactions and language use in context.

Debriefing and retraining sessions for all fieldworkers were undertaken in mid-December 1979 by the project directors, field supervisor, and the qualitative data manager with the assistance of expert consultants. As with the first training session held in August 1979, this review was simulation-based in that most of the session was devoted to providing the fieldworkers with skills related to the write-up of ethnographic data. The meetings were conducted in a seminar format, thereby providing participant researchers and implementation researchers with an opportunity to share ideas and information as well as to call on the expertise of other Juárez and Associates staff members or consultants to address particular questions or problems. The training and debriefing were organized around three major areas in which the data collected by the fieldworkers would be used: assessment of implementation, verification and explanation of the test data, and the preparation of the pamphlets. An

interim report was prepared by each fieldworker providing an overall assessment of his or her site through the first three months of data collection. This training program emphasized most of the major problems field researchers would face and offered specific techniques for implementation of effective observational strategies for solving these problems in the field.

b. Quality Control

Juárez and Associates' approach to fieldwork emphasizes that the most important data collection instrument in naturalistic observational studies is the researcher. It follows that, if comparable data across sites and researchers is a research objective, as it was in this evaluation, the team of investigators must be monitored throughout their period of involvement in the data collection effort and the data collected must be appropriately calibrated to the use of given methodologies in a particular system. Thus, in addition to the multiple research techniques emphasizing participant observation, a series of activities to systematically monitor observational data gathering and to ensure the accuracy and consistency of the information collected was developed. These activities included the following: (1) the previous experience and training of the fieldworkers; (2) the use of an experienced bilingual educational anthropologist to supervise and coordinate field operations and to conduct parallel observations; (3) the establishment of monitoring procedures, including weekly feedback to the fieldworkers and reorientation and retraining meetings; (4) the establishment of a central processing center to facilitate consistency of data reduction, synthesis, and interpretation; (5) the development of standardized formats for accurate data recording; and (6) the development of a field manual to provide common definitions, delineate role relationships, and specify ethical and confidentiality considerations. Additional steps to ensure the quality of the data included submitting fieldnotes in a consistent format and verification by the field supervisor of each coded entry in the notes for appropriateness and accuracy. These verifications, as well as any aspects related to the quality of the notes, such as level of inference, legibility, and amount of information being sent, were discussed with each fieldworker during weekly phone calls. Calls also included discussions of changes in the participant researcher's or implementation researcher's role, scheduling of the various data collection efforts, information about fieldworkers at other sites, and new note categories.

The initial parallel observations made at the beginning of implementation research in the fall were supplemented by a second site visit in the spring. During both site visits the supervisor conducted two days of parallel observations with each PR and one day of observations with each IR. The purpose of the parallel observations was twofold: first, to provide a measure of interrater agreement

a[illegible]consistency over time in the use of the implementation forms and, se[illegible]nd, to determine the accuracy of the coded data collected by the fieldworkers in their subsample observations. In both cases a high agreement was found between the observations of the supervisor and those of the fieldworkers at each site (Chesterfield, July 1980).[21] Complete discussions of all training and quality control procedures are found in Chesterfield et al, September 1979, and Chesterfield and Gonçalves, December 1979.

## FOOTNOTES

1. While test selection and data collection procedures are summarized, the reader is referred to other Juárez and Associates' documents for complete discussion of these issues. (See Appendix A for a list of relevant documents.)

2. Control groups were to receive no preschool exposure, and the experimental children at two sites each were to be exposed to one of the four bilingual Head Start curricula.

3. Given that the focus of the evaluation component was on the assessment of the degree to which the individual sites met model outcome and implementation goals and the cost of observational research, the observations were limited to the experimental children.

4. Given this orientation, the terms "Spanish-preferring" and "English preferring" children are used throughout the text. These terms are not intended to suggest a conscious language choice on the part of the children and therefore are used synonymously with the terms first, or primary, and second language.

5. A recognized problem in using MLU in measuring second as opposed to first language acquisition has been the frequently cited tendency of the second language learner to initially acquire language through "routine" or "formulaic" expressions (Hatch, 1978)) (e.g., "Ya know what?" "My name is ..."). These expressions are learned whole and serve a functional rather than expressive purpose. It has been argued that they may artificially inflate MLU in the second language and serve to indicate the learner's "performance" rather than his "competence." There is disagreement, however, as to the value of these expressions. Fillmore's research (1976) suggests that they serve as a vital strategy in the early stages of second language learning by providing access to verbal input from native speakers. Furthermore, Clark (1974) has hypothesized that the initial stages of the acquisition of a first language may be similar to those in second language acquisition. Consequently, MLU was considered here as a valid indicator of developmental first and second language change. Spanish and English MLUs are never directly compared, however, due to the different morphological structures of the two languages. (See Appendix B for the criteria for scoring MLUs.)

6. In accordance with the scoring procedures for the structured tasks recommended by test developers, responses which were semantically correct yet morphologically or lexically incorrect (e.g., "something to write with" rather than "pen") were scored as incorrect. Thus scores may be a conservative measure of productive abil-

7. Alpha coefficients were examined by and across treatment level classifications for pretest and posttest values of Spanish and English measures of three constructs -- concept development, perceptual motor development, and language comprehension. It was found that for 12 of 12 possible comparisons of within-language preference reliability coefficients assessed across treatment classification and for 35 of 36 across language preference comparisons made within treatment classifications, the reliability coefficients were lower for subjects whose language preference matched the language of the test (see Appendix D for all reliability coefficients). The range of difference in magnitude of values is appreciable for most comparisons, differing by an average of 16.2 points.

Lower coefficients on preferred language concept development and language comprehension measures are apparently related to the strategy of testing children in two languages. Appendix C indicates that a very high percentage of zero responses resulted at both pre- and posttest for almost all measures administered in children's non-preferred language. Skewness statistics (not presented) indicate positively skewed score distributions for measures in the second language, a consequence of the high incidence of zeroes. The abundance of zero scores would be expected to inflate the internal consistency estimate of a measure, as item scores would be more homogeneous across individuals tested in the second language, creating the generally higher alpha coefficients reported. Similarly, reliability coefficients computed over treatment classifications vary less than those computed within treatment classifications, as would be expected for larger numbers of subjects that would have fewer zero or near zero scores.

A different explanation seems reasonable for the lower alpha coefficients obtained on preferred language perception measures. There was a strong tendency for subjects to score at test ceiling on the four items comprising the measures. It seems likely that the test ceiling effect resulted in an appreciable reduction in among-persons variance for tests in both language preferences, but that the variance reduction was greater for preferred language perception measures. Variance restriction is most apparent in the .01 alpha coefficient obtained on EPERC of posttest for English-preferring Head Start comparison group children.

Reliability coefficients computed from subject's scores in the nonpreferred language have "face value" utility in that they reflect the measured internal consistency of a scale for groupings of subjects that are used in the analyses to be presented. However, a summary impression of a measure's internal consistency is best made using the value computed on subjects whose language preference matches the language of the test administration. Using this criterion, the reliabilities computed for measures of concept development and narrative description are very good, with mean values across treatment classification and time of test administration of .815 and .778, respectively. Mean alpha values for measures of lan-

guage comprehension (.535), perception (.463) and object description (.450) were appreciably lower.

An additional consequence of the extremely low scores obtained by many children in their second language was that correlations between two constructs were generally higher when the test was taken in the nonpreferred language, whether this language was Spanish or English. The posttest relationships among the Spanish measures of concept development (PSIS) and perceptual motor development (SPERC) typify the general pattern. The correlation between these Spanish measures was .33 for Spanish-preferring children and .88 for the English-preferring children. For the English measure of the construct, the higher correlation was found among Spanish speakers. Thus correlations for measures in the nonpreferred language were somewhat inflated. For the purpose of defining the degree of relationship between different child competency measures, it is therefore appropriate to use the correlation values computed on subjects whose language preference matches the language in which the test was administered. Complete sets of correlations among child measures for Spanish- and English-preferring children appear in Appendix E.

8. Warner (1976) has described three types of experimenters: "brutally honest" experimenters who report and analyze every piece of data regardless of how ridiculous some of them might appear; "think honest" experimenters who set aside unreasonable data points for secondary interpretation; and "dishonest" experimenters who discard bad data points and "never tell anyone about them." We have attempted in this case to move toward the "think honest" approach.

9. Even in these analyses, however, the philosophy of not contrasting the different bilingual, bicultural Head Start treatment models was adhered to. Experimental designs used in the "composite" comparisons included crossed factorial designs for the factors of site and treatment group. Even though full effect models (including interaction terms) were run, significant interaction findings were not interpreted.

10. Even at these sites score distributions on the outcome measures for children of different language preferences were found to differ so markedly that no parametric statistical analysis across language preferences was attempted.

11. The use of ANCOVA to investigate treatment effects between contrast groups that are assumed to be nonequivalent is a somewhat problematic endeavor. As Lord (1963), cited in Elashoff (1969) has cogently noted, random assignment of sampling units to contrast groups

> ... is the logical (not merely the statistical) prerequisite to a controlled experiment. If the individuals are not assigned to the treatments at random, then it is not helpful to demonstrate statistically that the groups after treatment

> show more difference than would be expected by random assignment -- unless, of course, the experimenter has special information showing that the nonrandom assignment was nevertheless random in effect. If, as often happens, randomized assignment is impossible, then there is often no way to determine what is the appropriate adjustment to be made for initial differences, and hence often no way to show convincingly by statistical manipulations that one treatment is better than another.

However, the practical necessity of attempting to obtain some estimate of treatment effects in the nonrandom sampling situation has made the use of ANCOVA commonplace.

In addition to its logical limitations, a technical problem exists in the use of ANCOVA to statistically correct for pretreatment differences between assumed nonequivalent contrast groups. The problem is that ANCOVA used with fallible (errorfully measured) covariates tends to undercorrect for pretreatment differences between contrasted groups. As a consequence, an initially measured low group in a two-group pretest/posttest evaluation would have a built-in disadvantage to overcome if the criterion for evaluation is amount of gain over time as assessed by fallible pretest-adjusted ANCOVA. Campbell and Boruch (1975) have recognized the important implications of this problem, since subjects nonrandomly assigned to compensatory education treatments usually obtain lower scores than subjects enrolled in control treatments. It is important to note that for the majority of subgroups contrasted statistically in this evaluation, preexperiment differences between subgroups were not interpreted.

Kenny (1975) has reviewed the implications of several statistical techniques that attempt to deal with the undercorrection problem, but recognizes that each technique is based upon different assumptions about the nature of error within a concomitant (pretest) measure. It is, unfortunately, often difficult to choose among these assumptions. Perhaps the most reasonable solution to the problem of assessing pretest/posttest change among nonequivalent groups is to use several analytic techniques to investigate group difference and then compare the similarity of results obtained. The analyses to be reported here take only the first step toward the goal of using multiple parallel analyses to interpret treatment group differences among nonequivalent groups.

12. The covariate FAC, child's home language environment, was derived by factor analysis (principal components, varimax rotation) from nine items concerned with the child's language, three items concerned with the language of the parent survey respondent, and one item concerned with the highest school grade level achieved by the parent survey respondent. The nine items addressing child's language at home were incorporated into three scales before they were entered into factor analysis. On one of these scales, missing responses of

31 respondents were replaced with nonmissing scores. Missing values were estimated by multiple regression, using respondents' nonmissing scores from the other 11 items as data. Beta weights in these equations were estimated from the responses of all 416 parent survey respondents. Five additional missing values, spread over three other items, were also estimated in the same way. The strategy of estimating missing scores was adopted in order to utilize all available test scores in the factor score computations that then comprised the covariate FAC.

13. Only two covariates, AGE and PRESENT, have no relation to items (or scales created from items) on the parent interview survey, reported on in detail beginning on page 34

14. Two of the five covariates derived from the parent interview survey, EDASP and PTCH, were used as dependent scoring measures as well as independent measures. When considered as dependent variables, parent survey respondents were limited to mothers, and the measures were called MEDASP and MTCH, respectively.

15. Inspection of plots after implementation of the stepwise procedure eliminated the need to print and inspect 91 plots (7 covariates x 13 scoring measures) per subgroup. Univariate score distributions for each covariate were, however, inspected by subgroup for shape of distribution and presence of variance before the stepwise procedure was initiated.

16. The logic of dropping covariates whose regression slopes differed across subgroups is somewhat problematic in that variance of conceptual interest was not interpreted but treated instead as if it was unrelated to the scoring measure. An alternative procedure would be to use the Johnson-Neyman technique to examine the effects of such measures within the range of the scoring measure in which covariate slopes are homogeneous.

17. In order to fulfill contract specifications a number of the scales used as covariates in the analysis of child outcomes were also used as dependent measures when examining parents' experience with the curriculum models.

18. The attitudinal constructs of integrative and instrumental motivation have been investigated extensively in the area of second language acquisition research (Gardner and Smythe, 1974; Shuy and Fasold, 1973). Gardner and Lambert (1972), originators of these concepts, distinguish between the two types of motivation. While some language learners view language primarily as a tool for some pragmatic purpose, others appear to be motivated by the intrinsic value they place on both linguistic and nonlinguistic characteristics of the target language community. The latter group -- characterized by what Gardner and Lambert term "integrative motivation" -- cite such reasons as improved cultural

awareness and intercultural communication as impetus for second language learning and generally exhibit a desire to integrate with the target language community. Those stimulated by "instrumental motivation," on the other hand, tend to learn another language so as to advance their careers or education only, without exhibiting any desire to "become like" or imitate the target language speakers in terms of values or behaviors. Various studies have shown that integrative motivation generally leads to the most effective language learning. In those cases, however, where the populations of developing countries or emerging ethnic minority communities need proficiency in a second language for reasons of economic development or survival, instrumental motivation can provide an equally strong drive for language mastery.

19. An indexing system is a mechanism for defining categories of relevant information, organizing them in a uniform manner, and pairing these categories (or their code numbers) with actual written data. It provides a descriptive catalogue in which as many categories of information as possible are separately identified for later retrieval.

20. An etic indexing system is one in which categories of information are determined a priori and imposed on the actual observational data. An emic system uses categories generated by both the subjects of the study, being therefore reflective of the way such individuals perceive and understand the world, and by the researcher as he or she begins to make on-site decisions as to important categories of information.

21. The percentage of interrater agreement between the field supervisor and each PR or IR calculated for the approximately 120 items of the implementation forms on two different days was consistently high for both the Fall and Spring parallel observations. Overall agreement ranged from 81% to 92% at the Fall observation and 82% to 88% in the Spring. Agreement with the PRs was slightly higher overall. This would seem to be a result of the continued contact that the participant researchers and the supervisor (through their notes) had with a site. Owing to the importance of the subsample observations as a data source, parallel observations through time and event samples across a number of children were also performed during the field supervisor's Spring visits to the researcher-intensive sites. A total of 90 minutes of observation with at least three different children was conducted. The percentage of agreement in coding was calculated for all common observations and found to be high (83% to 96%) across all sites. Examples of the running log for such observations is provided in Appendix I.

# III

## COMPOSITE PROGRAM IMPACT

This chapter presents the composite findings of the evaluation of the four bilingual bicultural preschool curriculum models developed as part of the Head Start Strategy for Spanish-speaking Children. Findings are presented in terms of the impact of the curriculum models on the three groups of evaluation subjects: children, parents, and Head Start classroom staff. In addition, general findings related to implementing the models are discussed. Subsequent chapters provide the results of the evaluation on a site-by-site basis and include discussions of the impact of each model, the degree to which the treatment was implemented at each site, and the feasibility of implementing the curriculum models in alternative settings.

### A. Child Outcomes

#### 1. Test Results

Children receiving bilingual bicultural Head Start treatments were compared with children in other Head Start programs. Composite comparisons included all sites where there were a sufficient number of subjects to make within-site comparisons (five sites in the case of the Spanish-preferring children and two sites for English-preferring ones). The effects for site shown in Tables 10 and 13 point out the importance of examining each site individually, as will be done in subsequent sections of this report. The presentation of composite treatment effects controlling for the effects of site, however, illustrate a number of the trends found at the individual evaluation sites.

##### a. Spanish-preferring Children

Spanish-preferring children who were exposed to the Head Start bilingual bicultural curricula exhibited consistent gains over comparison children on English language and cognitive measures (see Table 10). Statistically significant ($p \leq .05$) differences favoring these experimental children were observed on three of the four measures administered in English. These include (1) English Acquisition, (2) Concept Development, and (3) Perceptual Motor Development. The lack of significant treatment x site interactions on these measures suggest that the results at an individual site are not confounding the composite treatment effects. The

Table 10. Composite ANCOVA and ANOVA results for Spanish-preferring children. Experimental and comparison Head Start children at five sites were compared on six constructs controlling for the effect of site..

| CHILD MEASURES | SIGNIFICANCE[2] Treatment | Site | Interaction | COVARIATES[3] | POSTTEST MEANS[4] N = NUMBER OF SUBJECTS: EXPERIMENTAL HEAD START | COMPARISON HEAD START | AMANECER M | N. FRONTERAS II | N. FRONTERAS I | UN MARCO ABIERTO II | UN MARCO ABIERTO I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE | | | | | | | | | | | |
| Spanish Mean Length of Utterance | Δ | ns | ns | PRETEST | 4.20 N = 116 | 4.14 N = 105 | 4.20 N = 66 | 3.98 N = 24 | 4.02 N = 64 | 4.52 N = 24 | 4.12 N = 43 |
| English Mean Length of Utterance | ● | ● | ns | INC | 1.79 N = 114 | 1.08 N = 106 | 0.90 N = 66 | 1.86 N = 24 | 0.87 N = 63 | 1.77 N = 24 | 1.80 N = 43 |
| 2. LANGUAGE COMPREHENSION-ESCUCHEN ESTE CUENTO -LISTEN TO THE STORY | | | | | | | | | | | |
| Spanish | ns | ns | ns | PRETEST | 9.02 N = 116 | 8.93 N = 106 | 8.87 N = 66 | 9.16 N = 25 | 8.68 N = 64 | 9.02 N = 24 | 9.14 N = 43 |
| English | Δ | ● | ● | AGE, FAC, INC | 8.29 N = 101 | 7.29 N = 97 | 8.05 N = 66 | 8.98 N = 22 | 7.45 N = 46 | 6.30 N = 22 | 8.18 N = 39 |
| 3. LANGUAGE PRODUCTION-DIMELO TU | | | | | | | | | | | |
| Quantity of Spanish Words | ● | ns | ns | | 51.88 N = 113 | 44.36 N = 104 | 45.09 N = 65 | 46.64 N = 25 | 48.88 N = 64 | 48.33 N = 24 | 53.61 N = 39 |
| Object Description Scale | ns | ● | ns | PRETEST | 4.45 N = 116 | 4.22 N = 107 | 4.62 N = 67 | 4.14 N = 25 | 4.64 N = 64 | 3.36 N = 24 | 4.92 N = 43 |
| Narration Description Scale | ● | ns | ns | PRETEST, | 13.56 N = 116 | 12.22 N = 106 | 13.09 N = 66 | 13.05 N = 25 | 12.69 N = 64 | 12.16 N = 24 | 13.45 N = 43 |
| 4. CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY | | | | | | | | | | | |
| Spanish Scale | ● | ● | ns | PSIS, PTEACH INC | 18.99 N = 100 | 17.27 N = 97 | 18.25 N = 66 | 18.56 N = 22 | 18.41 N = 45 | 15.23 N = 22 | 20.19 N = 42 |
| English Scale | ● | ● | ns | PRETEST, INC, EDASP | 12.34 N = 99 | 9.41 N = 96 | 8.89 N = 65 | 13.13 N = 22 | 9.83 N = 46 | 7.52 N = 20 | 16.07 N = 42 |
| 5. PERCEPTUAL MOTOR DEVELOPMENT | | | | | | | | | | | |
| Spanish Scale | □ | | | | | | | | | | |
| English Scale | ● | ● | ns | INC, FAC | 2.62 N = 101 | 2.10 N = 97 | 1.40 N = 66 | 2.80 N = 22 | 2.08 N = 46 | 2.04 N = 22 | 3.48 N = 42 |
| 6. SOCIOEMOTIONAL BEHAVIOR-TESTER CHECKLIST | | | | | | | | | | | |
| Socioemotional Functioning[5] | ns | ● | ns | PRETEST, AGE | 18.35 N = 164 | 18.39 N = 137 | 18.97 N = 67 | 19.25 N = 64 | 18.76 N = 67 | 16.57 N = 37 | 19.32 N = 66 |

[1] Statistical comparisons were either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; no entry in this column indicates that the statistical test employed was ANOVA. Test measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a □ mark in the "significance" columns.

[2] The following symbols are used to depict significance

● $p \leq .0500$
Δ $.0500 < p \leq .1000$
ns $.1000 < p$
□ significance not computed

[3] Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income), 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

[4] Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

[5] Both Spanish and English preferring children at five sites were included as subjects in the analysis for this measure.

experimental children also showed greater gains than comparison children on the measure of English Comprehension. However, this effect is confounded by a treatment x site interaction.

The consistency of these results suggests that undifferentiated preschool experience may provide children with some isolated practice in the second language. Consistent improvement across a number of dimensions related to second language acquisition, however, comes about through exposure to curriculum models structured to provide systematic practice in the second language.

On Spanish language measures, the Spanish-preferring experimental children achieved significant gains ($p \leq .05$) over comparison children on two of the language production scales. These were the Quantity of Spanish Words and the Narration Description Scale. They also outperformed their Head Start comparison group on the Spanish measure of Concept Development.

No significant differences were found favoring the comparison children on any of the measures in either language.

Behavioral observations indicated that the Spanish-preferring children had different experiences in the classroom depending on their entry-level abilities in English. Consequently, subsequent analyses were performed by dividing Spanish-preferring children with limited/or no English abilities ($SP_1$) from those Spanish-preferring children who entered the programs with English language skills ($SP_2$). This division was made on the basis of the children's pretest scores on English measures of language acquisition, concept development, and comprehension.[1] All Spanish-preferring children receiving bilingual bicultural Head Start treatments were put into one of these two groups and then compared with similar groups of children in other Head Start programs.

Spanish-preferring experimental children with limited/or no English language skills demonstrated more consistent gains in English over their comparison group than did Spanish-preferring experimental children who entered preschool with English language skills (see Table 11). The children from this group showed significant gains over the Head Start comparison group on English measures of Cognitive Development and Language Acquisition.[2] The experimental Spanish-preferring children with some knowledge of English at pretest showed significant gains over their comparison group on the measure of English Comprehension. This suggests that the benefits derived from systematic exposure to bilingual curriculum models may vary depending on a child's level of second language development upon entering Head Start.

It appears that the curriculum models were providing the $SP_1$ children with an elementary knowledge of those grammatical forms and vocabulary necessary to gain access to situations within which to practice their nonpreferred language in the classroom context.

Table 11. Comparison of Spanish-preferring children grouped by English entry level ability. Experimental and comparison Head Start children at five sites were compared on selected English measures.[1]

Spanish-Preferring Group I[2]

| Measure | Experimental Head Start Posttest Means | N | Comparison Head Start Group Posttest Means | N | F[3] |
|---|---|---|---|---|---|
| Language Acquisition (EMLU) | 1.16 | 81 | .54 | 88 | 10.29* |
| Language Comprehension (ECOMP) | 7.50 | 22 | 6.82 | 28 | 0.73 |
| Concept Development (PSIE) | 10.02 | 81 | 6.84 | 88 | 10.21* |

Spanish-Preferring Group II[4]

| Measure | Experimental Head Start Posttest Means | N | Comparison Head Start Group Posttest Means | N | F[3] |
|---|---|---|---|---|---|
| Language Acquisition (EMLU) | 3.07 | 54 | 2.03 | 18 | 3.34 |
| Language Comprehension (ECOMP) | 8.37 | 114 | 7.35 | 78 | 5.57* |
| Concept Development (PSIE) | 16.30 | 55 | 16.05 | 19 | 0.05 |

1. All statistical comparisons were ANOVA.

2. Spanish-preferring Group I includes all children who showed little or no ability on the English pretest measures (EMLU=0, PSIE≤3, ECOMP≤3).

3. * $p \leq .0500$

4. Spanish-preferring Group II includes all children who demonstrated ability in English on the pretest measures (EMLU > 0, PSIE > 3, ECOMP > 3).

Observational data show that their more advanced experimental companions who entered Head Start with some basic knowledge of English were even at the beginning of the year successfully interacting with both teachers and peers in their second language. Thus they already possessed the bare essentials of survival skills necessary to communicate effectively in the regular preschool environment.[3]

$SP_1$ experimental children performed significantly better than their comparison group on the English measure of Concept Development. This probably reflects the fact that systematic practice of concepts in English was successfully implemented across all the models. Furthermore, observational data revealed that the increased use of English language concepts was due almost entirely to the practice received by $SP_1$ children over the Head Start year.

A majority of all Spanish-preferring children began the preschool year with receptive abilities in English. These $SP_2$ children demonstrated significant gains over their comparison group counterparts on the measure of English Language Comprehension. An interpretation of these findings is that the bilingual curricula were providing $SP_2$ children with an opportunity to relate meanings in both languages. While the children with no English receptive ability may have been ignoring the English input, those children with demonstrated English comprehension may have been attending primarily to English and using Spanish as a check on English comprehension when not understanding in English. This is in contrast to programs with no systematic Spanish language component in which Spanish-preferring children must either "sink or swim," i.e., have no check for misinterpreted English. These findings are consistent with the observational data which showed that English language comprehension and recall activities in the classroom were primarily directed toward those children entering preschool with some receptive abilities in English.

Finally, Spanish-preferring experimental children's progress in English had no adverse effects on their progress in Spanish. As is shown in Table 12, children of both groups performed similarly to their comparison group counterparts on all measures and the $SP_1$ experimental children significantly outperformed the comparison group on the measure of Spanish concept development. This is probably a result of the continued practice with concepts that this group of children was observed to receive in Spanish. (See Appendix J for the mean scores of Spanish-preferring children grouped by English entry-level ability at each site.)

b. English-preferring Children

Experimental English-preferring children performed similarly to children with the same language preference who attended Head Start without a bilingual curriculum model. The similar performance of the two groups on both first and second language measures,

Table 12. Comparison of Spanish-preferring children grouped by English entry level ability. Experimental and comparison Head Start children at five sites were compared on selected Spanish measures.[1]

Spanish-Preferring Group I[2]

| Measure | Experimental Head Start Posttest Means | N | Comparison Head Start Group Posttest Means | N | F[3] |
|---|---|---|---|---|---|
| Language Acquisition (SMLU) | 4.14 | 82 | 4.05 | 86 | 0.44 |
| Language Comprehension (SCOMP) | 8.81 | 82 | 8.94 | 87 | 0.13 |
| Concept Development (PSIS) | 18.5 | 82 | 17.2 | 87 | 4.33* |

Spanish-Preferring Group II[4]

| Measure | Experimental Head Start Posttest Means | N | Comparison Head Start Posttest Means | N | F[3] |
|---|---|---|---|---|---|
| Language Acquisition (SMLU) | 4.24 | 54 | 3.98 | 19 | 1.56 |
| Language Comprehension (SCOMP) | 9.19 | 114 | 8.88 | 77 | 0.83 |
| Concept Development (PSIS) | 17.94 | 55 | 19.10 | 19 | 0.68 |

1. All statistical comparisons were ANOVA.
2. Spanish-preferring Group I includes all children who showed little or no ability on the English pretest measures (EMLU=0, PSIE≤3, ECOMP≤3).
3. * $p \leq .0500$
4. Spanish-preferring Group II includes all children who demonstrated ability in English on the pretest measures (EMLU > 0, PSIE > 3, ECOMP > 3).

Table 13. Composite ANCOVA and ANOVA results for English-preferring children. Experimental and comparison Head Start children at two sites were compared on six constructs controlling for the effects of site.

| CHILD MEASURES | SIGNIFICANCE[2] Treatment | Site | Interaction | COVARIATES[3] | POSTTEST MEANS[4] N = NUMBER OF SUBJECTS EXPERIMENTAL HEAD START | COMPARISON HEAD START | NUEVAS FRONTERAS II | UN MARCO ABIERTO I |
|---|---|---|---|---|---|---|---|---|
| 1. LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE | | | | | | | | |
| Spanish Mean Length of Utterance | □ | | | | | | | |
| English Mean Length of Utterance | ns | ● | ns | PRETEST | 4.07 N=35 | 3.96 N=30 | 3.78 N=41 | 4.25 N=24 |
| 2. LANGUAGE COMPREHENSION-ESCUCHEN ESTE CUENTO -LISTEN TO THE STORY | | | | | | | | |
| Spanish | ns | ns | ns | PRETEST, INC | 5.27 N=33 | 5.35 N=28 | 5.23 N=37 | 5.39 N=22 |
| English | ns | ns | ● | AGE PRETEST | 8.87 N=35 | 8.80 N=30 | 8.52 N=41 | 9.15 N=24 |
| 3. LANGUAGE PRODUCTION-YOU SAY-IT | | | | | | | | |
| Quantity of English Words | ns | ● | ns | PRETEST | 46.71 N=36 | 47.43 N=30 | 40.07 N=41 | 53.07 N=24 |
| Object Description Scale | ns | ns | ns | PRETEST | 4.12 N=35 | 4.01 N=28 | 3.97 N=41 | 4.16 N=22 |
| Narration Description Scale | ns | ns | ns | PRETEST | 12.70 N=36 | 11.75 N=30 | 12.12 N=41 | 12.33 N=24 |
| 4. CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY | | | | | | | | |
| Spanish Scale | □ | | | | | | | |
| English Scale | ns | ns | ns | AGE,FAC | 20.93 N=35 | 19.85 N=28 | 20.76 N=41 | 20.03 N=22 |
| 5. PERCEPTUAL MOTOR DEVELOPMENT | | | | | | | | |
| Spanish Scale | □ | | | | | | | |
| English Scale | □ | | | | | | | |
| 6. SOCIOEMOTIONAL BEHAVIOR-TESTER CHECKLIST | | | | | | | | |
| Socioemotional Functioning[5] | ns | ● | ns | PRETEST, AGE | 18.35 N=164 | 18.89 N=137 | 19.25 N=64 | 18.32 N=66 |

[1]Statistical comparisons were either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; no entry in this column indicates that the statistical test employed was ANOVA. Test measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a □ mark in the "significance" columns.

[2]The following symbols are used to depict significance.

● $p \leq .0500$
▲ $.0500 < p \leq .1000$
ns $.1000 < p$
□ significance not computed

[3]Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income), 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

[4]Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

[5]Both Spanish and English preferring children at five sites were included as subjects in the analysis for this measure.

as shown in Table 13, suggests that there is no price to be paid in terms of first language development for English-speaking children who participate in a bilingual program. The children's scores on most Spanish measures tended to be zero, thus precluding parametric tests on these measures. These results are consistent with the classroom observations that most English-preferring children tended to use primarily English in the classroom.

2. Classroom Observations

Observational data were obtained on a subsample of 48 children at four sites. Twenty-six of these children were Spanish preferring. The analysis of the observational data supports the trends found in the analyses of the test data and provides specific information as to the practice received by children in the classrooms.[4]

a. Spanish-preferring Children

Analysis of the classroom observations revealed that the treatment the 26 Spanish-preferring children received varied depending largely on the level of linguistic development at which the children entered school.[5] Across all sites the children could generally be divided into two main groups: those children beginning the year with observed productive ability in their nonpreferred language and those with little or no observable productive ability in English.

Ten of the children were identified as having productive abilities in English at the beginning of the year.[6] As can be seen from Table 14, these children as a group were using English in more than a third of their classroom interactions even early in the year. Most had sufficient knowledge of English vocabulary and grammatical structures to understand and answer questions addressed to them although they usually initiated spontaneous conversation in their first language. Even at the beginning of the year they were receiving direct input in their nonpreferred language from both teachers and peers. By the end of the year, an average of 73% of their classroom interactions were in English. They often used English in spontaneous conversation with peers and exhibited the ability to use their new second language for a variety of functional purposes. English, too, was the language in which the majority of individual input was directed to them. In four cases the children even went from using primarily Spanish in the classroom to using English almost exclusively, thus changing their classroom language preference.

Table 14. Relative frequency of observed linguistic, conceptual, and socioemotional classroom behavior over time for Spanish-preferring subsample children grouped by English entry level ability.

| ENTRY LEVEL | OVERALL SPANISH PREFERRING GROUP[1] | | | SPANISH PREFERRING GROUP I[2] | | | SPANISH PREFERRING GROUP II[3] | | |
|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION PERIOD | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| | % | % | % | % | % | % | % | % | % |
| LANGUAGE DEVELOPMENT | | | | | | | | | |
| SPANISH | 79 | 67 | 58 | 100 | 88 | 78 | 50 | 38 | 27 |
| ENGLISH | 21 | 33 | 42 | 0 | 12 | 22 | 50 | 62 | 73 |
| CONCEPT DEVELOPMENT | | | | | | | | | |
| SPANISH | 47 | 27 | 21 | 58 | 32 | 24 | 28 | 11 | 13 |
| ENGLISH | 14 | 17 | 31 | 0 | 14 | 30 | 39 | 27 | 32 |
| NON-LANGUAGE SPECIFIC | 39 | 56 | 48 | 42 | 54 | 46 | 33 | 62 | 55 |
| SOCIOEMOTIONAL DEVELOPMENT | | | | | | | | | |
| APPROPRIATE | 72 | 68 | 75 | NA | | | NA | | |
| INAPPROPRIATE | 28 | 32 | 25 | NA | | | NA | | |

[1]Overall Spanish-Preferring Group refers to Spanish-preferring subsample children across all four sites; N=26.

[2]Spanish-Preferring Group I includes those children who demonstrated no ability in English on the construct at pretest. For language development N=16; for the area of concept development, N=19.

[3]Spanish-Preferring Group II includes those children with some demonstrated ability in English on the construct at pretest. For language development, N=10; for the area of concept development, N=7.

The 16 Spanish-preferring children who began the year with little or no productive ability in their nonpreferred language underwent a distinct pattern of second language usage and development.[7] At the beginning of the year they rarely, if ever, interacted in English. Use of English was limited almost totally to repetition of isolated lexical items modeled by the teacher in either structured or unstructured second language sessions. Their limited direct English input was supplied entirely by the teacher at this time and amounted to a very small proportion of their total language input. For the most part, both teachers and peers tended to address them almost entirely in Spanish. Over the course of the preschool year they gradually increased their second language usage in the classroom to form an average of 22% of their total classroom discourse by the end of the year. Teachers and to a lesser extent peers began to interact more frequently with them in English. They had acquired a sufficient lexical and morphological repertoire to respond with single words and short sentences to both teachers and peers in their nonpreferred language. Most of their spontaneous conversation with both peers and teachers was still in their preferred language, however.

Certain trends were evident for both groups of Spanish-preferring children in terms of the quality of their language practice,[8] depicted in Appendix K. The most notable trend over the course of the year was that the overwhelming majority of the children (92%) diversified their practice with their second language to include grammatical forms which they had not been regularly using at the beginning of the year. The single category of linguistic competence in which most children (69%) increased was that of "incomplete sentences."[9] In most cases this served as an indication of the children's expanding lexical repertoire and was composed primarily of appropriate short answers to teachers' questions. Over half of the children also increased their use of complete sentences in English, thus indicating an expanding practice with sentence formation. Other areas in which close to a majority of the children expanded their practice were with plural nouns, the interrogative form, and the present tense. Children's talk during school activities appeared to revolve primarily around events of the present as an increase in the use of the past and future tenses was exhibited by only about one third of the subsample children. A majority of the children also increased their instances of incorrect grammatical usage. This can be related to the developing linguistic system of the 16 children who did not use English at the first observation period.

Generally it was those Spanish-preferring children who began the year with some productive ability who achieved functional competence in the classroom by year's end. Although observed behaviors in the area of functional competence were limited, the data showed a consistent trend among such subsample children to diversify the uses to which they put their second language. By the year's end they were observed expanding the functional repertoire to include descriptions of themselves and their environment.

The English functional competence of those children with no demonstrated productive ability at the beginning of the year was limited almost totally to the giving of verbal instructions, the nature of which did not usually require the use of complex grammatical structures.

Despite the increasing use of English by most of the Spanish-preferring students at all sites, children were observed practicing a variety of forms indicative of maintained linguistic competence in their preferred language. As evident from Table 14, 81% of the Spanish-preferring group expanded the variety of Spanish grammatical forms which they practiced. Such expanded practice was primarily with plural nouns, the negative and interrogative forms, and the present and past tenses. Probably due to the fact that a greater proportion of Spanish rather than English was directed to peers in spontaneous conversation, increases in the frequency of the use of complete sentences was quite common. As with the use of English, children's talk about the future in the preschool situation appeared limited, as only about one third of the children expanded their practice with the future tense. Increasing practice in using first language for the variety of purposes defined by the model developers was limited to about one third of the Spanish-preferring children. This was probably due to the fact that even upon entrance to school most children exhibited functional competence in their preferred language.

In the area of concept development,[10] Spanish-preferring children received the majority of their practice primarily in behaviors which were nonlanguage specific such as painting and drawing. As was the case with language development, however, there was an overall trend toward increasing use of English in the manipulation of concepts. The experience of the children, however, varied somewhat depending on the level of conceptual development at which the child entered school (see Appendix K). The 19 children entering school with little or no knowledge of English concepts account for most of the increase as they did not use English in these endeavors at the start of the year but increased their practice to reach an average level of 30% of their total practice by the end of the school year. The relatively few (7) children who entered with some knowledge of English concepts had even at the start of school a fairly high proportion (39%) of their practice in this area in their second language, a level which they maintained throughout the year.[11]

The trends in language use were reflected in diversification patterns also. Practice within the construct of concept development for all Spanish-preferring children occurred principally in the areas of visual discrimination and symbolic representation across all models. There was, however, a general trend toward diversification as 81% of the subsample children expanded the number of conceptual areas experienced. Diversification was due primarily to increased practice in English where many of the Spanish-preferring children progressed from

no practice to include behaviors in the area of visual discrimination involving identification of objects and their characteristics. The variety of Spanish concepts practiced often decreased as a result of the increasing emphasis on English. More frequent behavior indicating development in the area of seriation/sequencing was especially evident across all sites.

In the area of socioemotional behavior, 12 observed instances of appropriate behavior consistently outnumbered the converse of such behaviors throughout the year. The increase in the average proportion of appropriate socioemotional behavior of the Spanish-preferring children was due primarily to the gains of 58% of the subsample children in the area of motivation. Over the course of the preschool year children became increasingly willing to complete activities independently.

Throughout the year the majority of observed behaviors in the area of self-esteem was positive. The only notable increase in inappropriate behavior, recorded in the area of school readiness by a fairly large percentage of Spanish-preferring children, was due primarily to the waning interest in preschool as summer vacation approached, leading to less participation in group activities.

The example on the following page, abstracted from a participant researcher's fieldnotes for the evaluation year, illustrates the developmental pattern of Spanish-preferring children with some entry-level abilities in English.

Luis,[13] an alert child with big brown eyes, was a Spanish-preferring boy who began the year with some productive, receptive, and conceptual ability in his second language as measured by pretests. With peers he tended to restrict his interactions to Spanish when he first arrived at school. Typical of the Texas community in which he lived, his speech was interspersed with English lexical items. One morning early in the preschool year as he ate his breakfast fare of milk and toast, for example, he talked about breakfast time at home with those seated around the tiny table with him: "Nosotros hacemos esto (toast) y le ponemos peanut butter." Although his classroom speech was predominantly Spanish at this time, he exhibited some receptive ability in his second language and periodically employed short English phrases with adults such as the time when he flattered his favorite teacher with "Miss Maciel, you bootiful."

By the end of the school year over 60% of his total verbal interactions in the classroom were in English. With his Spanish-preferring peers he continued to use mainly Spanish, which had developed considerably to include complex tenses such as in his statement when directing a classmate in the block area, "Aqui pa' que no se salgan." With the teacher and English-preferring classmates, however, he talked totally in English. During independent play, for example, he proudly displayed his tunnel of blocks which he skillfully erected in the block area with a classmate to an adult observer stating, "Look what we're doing, Mr. Cardenas. It's not gonna fell down." Although his English was not always grammatically correct, he had become communicatively competent in his second language in the classroom situation over the course of the preschool year while maintaining development in his preferred language as shown by both his classroom and test performance.

The case of Eva exemplifies the experience of those Spanish-preferring children who began their participation in a bilingual bicultural curriculum model with no demonstrated ability in English.

Eva, a young girl with dark eyes and very curly dark hair, was a Spanish-preferring child who began the preschool year with little speaking ability in her second language. At the pretest the only English measure in which she achieved any score was in English comprehension. Eva interacted in the classroom almost totally in her first language at the beginning of the year. In October she was observed playing teacher by herself. Pointing to some of her classmates' art work on the wall, she repeatedly asked herself, "¿De qué color es?" and then supplied the answer, "purple." When a Spanish-preferring peer approached her, she pointed to a lens in his glasses, saying, "Estas son de aquel huequito." The sole English word in her speech was a color concept previously introduced in the classroom on which she appeared to be drilling herself.

By spring, Eva continued to use Spanish most of the time with her teachers and peers. Her English vocabulary, however, had expanded considerably and she was able to respond in short but complete sentences to the teacher's questions in English. During an English as a second language session, for example, when asked by the teacher to think of a word in English, Eva volunteered, "television." When the teacher asked the function of the subject, "What can you do with it?" Eva successfully replied, "Turn it on." Fifteen minutes later, in a transition period as she and the teacher patiently waited for the other children to finish their activities, Eva was observed sitting on the floor in the rug area moving her fingers as she counted "one, two, three, four." Catching the teacher's attention she switched to her preferred language to explain what seemed to be some fantasy play, "Allí tiene una casita y se esconde allí." Eva's spontaneous speech was largely in her preferred language, which she used for complex speech functions. However, her English had developed to the point where she could meet the demands of ESL sessions and certain basic communicative needs with English monolingual peers. Her posttest scores reflected these trends as by the end of the year, her scores on all but one measure had risen considerably in both English and Spanish.

b. English-preferring Children

Like the Spanish-preferring group, the English-preferring children exhibited variability in the second language proficiency with which they entered school. Fifteen began the year with no demonstrated productive ability in Spanish while seven, three of whom were at the predominantly Spanish-preferring site of Rio Grande City, used some Spanish even during the first observation period.[14] Unlike their Spanish-preferring counterparts, however, the English-preferring children engaged only minimally in verbal interaction in their second language over the course of the preschool year. As evident from Table 15, only 13% of these children's verbal interactions at the start and [redacted] of their total classroom discourse at the end of the year was in Spanish. The overwhelming majority of this Spanish interaction was accounted for by those seven children who entered the classroom with some bilingual ability. Even their proportion of Spanish usage, however, decreased from the first to the third observation periods.

Appendix K shows that for the most part the progress of English-preferring children in Spanish was limited to the use of incomplete utterances which reflected the production of isolated lexical items in response to teachers' questions, usually during Spanish as a Second Language time. This is reflected in the fact that 41% of the English-preferring subsample children increased in this category. That the same relatively high proportion of children diversified their practice with their second language is a result of the fact that only about one fourth of the English-preferring subsample children used Spanish with any regularity during the first observation period. Those children accounting for increases in such categories as the negative and interrogative forms and use of the present tense were mostly at the site where Spanish was the predominant classroom and community language. These same children accounted for the very few increases registered in the area of functional competence in Spanish by English-preferring children as a group.

Because of the predominant English classroom environment in three of the four sites, the children had considerable practice in their preferred language. Patterns of English language development were similar to those of Spanish-preferring children in Spanish. Eighty-six percent of this group diversified their practice with grammatical forms in English. By the end of the year the areas in which the majority of children increased were the use of the negative form, past tense, present tense, and future tense.

Functionally, a greater proportion of English-preferring children were increasing their practice with their first language through diversification and greater use than were their Spanish-preferring counterparts. Almost two thirds of the children diversified their practice in various uses of language. Over the course of the Head Start year the English-preferring children

Table 15. Relative frequency of observed linguistic, conceptual, and socioemotional classroom behavior over time for English-preferring subsample children grouped by Spanish entry level ability.

| | ENTRY LEVEL | OVERALL ENGLISH PREFERRING GROUP[1] | | | ENGLISH PREFERRING I[2] GROUP | | | ENGLISH PREFERRING II[3] GROUP | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | OBSERVATION PERIOD | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| | | % | % | % | % | % | % | % | % | % |
| LANGUAGE DEVELOPMENT | | | | | | | | | | |
| SPANISH | | 13 | 12 | 10 | 0 | 2 | 2 | 39 | 33 | 25 |
| ENGLISH | | 87 | 88 | 90 | 100 | 98 | 98 | 61 | 67 | 75 |
| CONCEPT DEVELOPMENT | | | | | | | | | | |
| SPANISH | | 5 | 6 | 3 | 0 | 7 | 3 | 31 | 5 | 1 |
| ENGLISH | | 54 | 58 | 46 | 59 | 64 | 44 | 30 | 26 | 58 |
| NON-LANGUAGE SPECIFIC | | 41 | 36 | 51 | 41 | 29 | 53 | 39 | 69 | 41 |
| SOCIOEMOTIONAL DEVELOPMENT | | | | | | | | | | |
| APPROPRIATE | | 81 | 67 | 74 | | NA | | | NA | |
| INAPPROPRIATE | | 19 | 33 | 26 | | NA | | | NA | |

[1]Overall English-Preferring Group refers to English-preferring subsample children across all four sites; N=22.

[2]English-Preferring Group I includes those children who demonstrated no ability in Spanish on the construct at pretest. For language development N=15, for the area of concept development, N=19.

[3]English-Preferring Group II includes those children with some demonstrated ability in Spanish on the construct at pretest. For language development, N=7; for the area of concept development, N=3.

provided relatively more descriptions of themselves and a greater amount of verbal instruction in English.

English-preferring children recieved practice in the area of recall and comprehension primarily in English. During the year, nearly two thirds of the English-preferring children engaged in recall and comprehension activities in English. Close to one half of the remaining children were from one site where the English-preferring children were essentially receptive bilinguals upon entering school. In their first language English-preferring children displayed a trend toward greater diversification of recall tasks. At the first observation period behavior of this type tended to be in those areas directly related to the child or the child's immediate environment. Toward the end of the year, however, the children had developed the ability to comprehend and recall unreal or abstract events.

In the area of concept development, English-preferring children, unlike the Spanish-preferring group, received most of their practice in their first language and in the nonlanguage specific area (see Table 15). Practice in concepts in their second language was largely limited to the three English-preferring children who entered the program with some cognitive abilities in Spanish, and such practice was confined to the first observation period.

As with the Spanish-preferring children, the areas of concept development where practice was emphasized for all English-preferring children were visual discrimination and symbolic representation. By the end of the year approximately one half of the English-preferring group had increased the frequency of practice with matching and classification of objects and seriation and sequencing, especially in the nonlanguage specific area.

The socioemotional behavior of the English-preferring children was highly appropriate throughout the school year. This was especially true in the areas of self-esteem and motivation where observed behaviors were consistent with cross-model objectives for over 90% of all observations. The area in which the majority of children showed the greatest change was that of school readiness. As was the case with the Spanish-preferring group, this can be attributed to waning interest in the preschool activities as summer vacation neared.

The following case study summarizing the experience of one English-preferring child as recorded in the focused observations over the course of the year serves as an illustration of the general development pattern for most children of this language preference.

Pearl, a trim young girl with a rich complexion, was an English monolingual. She expressed no interest in learning Spanish at first, responding negatively to the teacher's question at the beginning of the year of whether the children wanted to learn Spanish. Pearl was very verbal in her Black English dialect, characterized by the dropping of the -s in the third person singular present tense form, as exhibited by her enthusiastic participation in a discussion of Christmas: "Christmas tree -- I got one. Know what? We spoke to Santa Claus' friend on the phone. My daddy say we don't have to talk. He carry all her toys."

By spring of the preschool year Pearl was paying close attention during the Spanish language activities and eagerly singing Spanish language songs such as "Mi Escuelita." She frequently joined the teacher in reminding her classmates of clean-up time, spontaneously chanting, "Es hora de limpiar el salón." Still, however, she spoke to both teachers and peers almost totally in English. In the meantime, she continued to develop rapidly in her native language, learning new concepts of size and numbers as shown in the example which follows. It was the end of the year and Pearl was responding to the teacher's queries about a recent visit to the Bronx Zoo:

Teacher: How many gorillas did you see?
Pearl : Two.
(And then pointing to the picture of gorillas held by the teacher:)
That's a fat, fat gorilla.
Two daddies and two mommies . . . I saw two daddies.

Both classroom observations such as this and test data show that Pearl, like many of the English-preferring children, benefited from the learning activities at school to maintain and expand her vocabulary, functional repertoire, and conceptual knowledge in her first language. Development in her new second language, however, was limited to learning of isolated lexical items and rhymes.

## B. Parent Outcomes

### 1. Background Characteristics

The mothers comprising the parent sample had similar backgrounds despite the geographical diversity of the sites. At all sites the majority of the experimental mothers were Hispanics, with the total representation of individuals of this ethnicity ranging from above 90% (at five sites) to approximately 70% at the remaining three sites. Comparison mothers exhibited patterns of ethnicity similar to those of experimental mothers at all but one site where the control group was limited to four Anglo and two Black individuals (See Appendix L).

Occupations for those respondents who were employed were in the areas of clerical or sales, service, and semiskilled labor for both experimental and control groups. Family income was also similar for both groups of mothers within a site. However, average income at different sites ranged from $6,250 to $9,800 per year as a result of regional variations in wage structure. In general, the respondents had completed elementary school and in most cases had had some high school education.

Mean family size ranged across sites from 3.7 to 6.2 individuals, an average of three of whom were children. The children of these families were young; their ages at different sites ranged from 5.4 to 6.5 years.

### 2. Parent Attitudes

As shown in Table 16, experimental mothers felt that greater gains had been made in the English ability of their children than did mothers of children receiving only those educational experiences provided by the home environment. Similar ratings of their own language ability were exhibited by experimental mothers and both groups of comparison mothers. Although all groups rated their own language ability as superior in Spanish, they were more likely to instruct their children in English. While change in the amount of formal instruction provided by all mothers was similar, mothers of children attending Head Start centers with a bilingual curriculum and those of control children enrolled in preschool both reported providing significantly more instructional playthings than did mothers of children not attending preschools.

All sample parents were highly positive toward the educational system and bilingual education throughout the year. Also, the mothers had similar educational aspirations for their children; most hoped for a college education for their children. However, preschool comparison mothers related their children's education more directly to career preparation than did the other two groups.

Table 16. Comparison of the attitudes and perceptions of mothers of all sample children. [1,2]

| MOTHER ASSESSMENT MEASURES | Overall | Experimental Preschool | Experimental Stay at Home | Preschool vs. Stay at Home | Experimental Group Adjusted Means | (N) | Preschool Group Adjusted Means | (N) | Stay at Home Group Adjusted Means | (N) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Language Spoken by Child at Home** | | | | | | | | | | |
| Spanish Ability (CSPAN) | ns | ns | ns | ns | 1.97 | 206 | 2.06 | 119 | 2.08 | 50 |
| English Ability (CENG) | * | ns | * | ns | 1.91 | 206 | 1.84 | 119 | 1.71 | 50 |
| **Mother's Language Ability** | | | | | | | | | | |
| Mother's Spanish Ability (MSTALK) | ns | ns | ns | ns | 2.30 | 205 | 2.34 | 117 | 2.28 | 50 |
| Mother Instructs in Spanish (MSTCH) | ns | ns | ns | Δ | 0.33 | 77 | 0.40 | 28 | 0.27 | 17 |
| Mother's English Ability (METALK) | ns | Δ | ns | ns | 1.91 | 206 | 1.81 | 119 | 1.80 | 50 |
| **Mother's Role as Teacher** | | | | | | | | | | |
| Provides Formal Instruction (MTCH) | ns | ns | ns | ns | 0.80 | 204 | 0.77 | 119 | 0.81 | 48 |
| Provides Instructional Playthings (PLAY) | * | ns | * | * | 0.64 | 203 | 0.65 | 119 | 0.58 | 48 |
| **Mother's Attitudes Toward Education** | | | | | | | | | | |
| Overall School Effectiveness (SEFFECT) | ns | ns | ns | ns | 3.79 | 205 | 3.78 | 118 | 3.90 | 50 |
| Career Preparation (CAREER) | * | * | ns | ns | 2.36 | 161 | 2.66 | 100 | 2.45 | 40 |
| Importance of Bilingual Education (BILED) | ns[3] | ns | ns | ns | 4.14 | 179 | 4.07 | 103 | 4.19 | 44 |
| Importance of Self-Concept (SELFCON) | * | ns | Δ | * | 4.20 | 179 | 4.14 | 103 | 4.33 | 44 |
| Mother's Educational Aspiration for Child. (EDASP) | ns | ns | ns | ns | 16.40 | 199 | 15.88 | 112 | 16.22 | 50 |

[1] ANCOVAs for averaged treatment groups

[2] The following symbols are used to depict significance

- * $p \leq .0500$
- Δ $.0500 < p \leq .1000$
- ns $.1000 < p$
- — significance not computed

[3] test of homogeneity of within cell regression slopes: $p \leq .0500$

The predominant feelings about the curriculum models were positive. The informal interviews conducted by the fieldworkers brought to light certain thoughts which provide a strong endorsement for the bilingual bicultural curriculum models..

From Spanish-preferring parents:

> It's good for my son to be in class because children his age learn more quickly than adults. It's like my husband said: "El Papa habla español, el presidente ya habla español y nosotros nada de inglés." (The Pope speaks Spanish, the President even speaks Spanish, and we don't know any English.)
>
> I want my daughter to speak both Spanish and English. This class (with a bilingual curriculum) is good because I know myself that I had problems going to college without a good knowledge of English and now my Spanish is not so good when I go back to Puerto Rico.

From English-preferring parents:

> I want E to learn Spanish and I would like to learn it myself because so many people in the community are Spanish-speaking. I really enjoy it when E comes home and tells me the Spanish words he's learned in class.

## C. Teacher Outcomes

### 1. Background Characteristics

Common background characteristics shared by the majority of the teacher sample were female sex (32 of 33) and Hispanic background (29 of 33). For the most part, the ethnic make-up of the teaching staff reflected that of the Head Start students, with Puerto Rican Hispanics predominating at ALERTA I and Marco Abierto II, and Mexican Americans at all other sites. Non-Hispanic teachers were limited to one Black at ALERTA II and three Anglos at Nuevas Fronteras II. Teachers were divided in language preference. Almost one half of the teachers reported speaking English most of the time in a range of home, school, and community situations. Only four teachers, three of whom were at the predominantly Spanish-speaking community of Nuevas Fronteras I, expressed a Spanish language preference. Most of the remainder reported that they spoke English and Spanish in equal proportions, and only two considered themselves to have little or no ability in Spanish. (see Appendix M)

Average age at a site ranged from 27 years at both AMANECER sites to 49.4 years at Nuevas Fronteras I. These same age differences were also reflected in the total years of residence in the United States. Although nearly all teachers had spent most of their lives in the United States, averages per site varied considerably. Whereas all the teachers at both Nuevas Fronteras sites were native born, those at Un Marco Abierto II had lived an average of 12 years outside of the continental U.S. Length of residence within close proximity of the Head Start center also varied. At three sites (Nuevas Fronteras II, Un Marco Abierto II, and Alerta II), the average number of years in the neighborhood of the Head Start center was over 10, whereas at four other sites only one of all staff members at each center lived in close proximity.

Although the average (overall) level of education for the teaching staffs was about one and one-half years of college, the average years of schooling at individual sites ranged from a minimum of 11 years at Un Marco Abierto II, where some staff members had not completed high school, to 16 at ALERTA II. The majority of teachers had acquired a CDA credential[15] or child center permit, and one teacher held an M.A. degree. Only 27% of the teachers reported little or no previous teaching or aiding experience (two years or less). More than five years of teaching experience was the norm for over half of the sample.

### 2. Teacher Attitudes

When interviewed informally teachers and aides were generally quite positive toward the particular bilingual bicultural preschool curriculum model which they were using. They liked the structure and

organization which the model-specified schedules and classroom management techniques brought to the preschool day and felt that the children adapted well to and benefited from the recommended learning activities. At times, however, especially in the case of those models closely tied to detailed theoretical bases, they expressed uncertainty as to some of the goals of those models or the most appropriate means of implementing them. Some members of the classroom staff viewed the model's emphasis on individualization of the programs to the developmental needs of each student as the cause of paperwork and planning which required extra hours of work for which they were usually not reimbursed. Although the problem of unpaid work hours remained an unresolved administrative problem, teachers' feelings of doubts regarding their understanding of the models seemed to be successfully overcome through the in-service training sessions provided by the model developers as these feelings were no longer voiced late in the year. Instructional staff especially noted the value of those workshops which had a practical component allowing them to apply specific skills in the classroom under the supervision of the trainer.

Teachers' and aides' general attitudes toward bilingualism and bilingual education as assessed by a questionnaire remained fairly constant across all models, as evident from Table 17. The majority of teachers continued to view the advantages for English-preferring Hispanics and non-Hispanics as well as Spanish-preferring children as being primarily in the area of integrative motivation; that is, such benefits as cultural awareness, intercultural communication, and self-enrichment were most frequently cited. This integrative orientation appeared to be heightened by the teachers' experience with the bilingual preschool model, as is evident from the consistent drop in identification of pragmatic benefits or instrumental orientation at the end of the preschool year. Teachers consistently differentiated between bilingualism and bilingual education, tending to attribute less value to bilingual education for totally practical purposes. Where teachers and aides did attribute the greatest amount of pragmatic benefits in both bilingualism and bilingual education -- especially in the area of employment opportunities -- was to native Spanish-preferring children, although there were no major differences in the perceived benefits by language preference of the children. When interviewed informally during the year, teachers summed up their feelings as follows:

For English-preferring Hispanic children:

> Being aware of their Hispanic heritage and language will enable children to develop in both English and Hispanic cultures.

Table 17. Orientation toward bilingualism and bilingual education of teachers who participated in the experimental Head Start bilingual bicultural curriculum models.[1]

| Total N = 33 | INSTRUMENTAL | | INTEGRATIVE | |
|---|---|---|---|---|
| | Pre | Post | Pre | Post |
| | % | % | % | % |
| Advantages of bilingualism for:[2] | | | | |
| English-preferring Hispanic[3] | 21 | 12 | 73 | 82 |
| English-preferring non-Hispanic | 27 | 18 | 73 | 82 |
| Spanish-preferring[4] | 24 | 21 | 73 | 79 |
| Advantages of bilingual education:[2] | | | | |
| English-preferring students | 12 | 9 | 88 | 91 |
| Spanish-preferring students | 18 | 12 | 82 | 88 |

[1] For the purposes of presentation, attitudinal data related to bilingualism and bilingual education have been collapsed to two constructs based on the frequently cited distinction between "instrumental" and "integrative" motivation established by Gardner and Lambert, 1972. "Instrumental" motivation refers to attitudes reflecting a view of language as a tool for some pragmatic purpose (i.e., for educational or career advancement). "Integrative" motivation relates to all non-pragmatic reasons for learning a language, based on the intrinsic value placed on both linguistic and non-linguistic characteristics of the target language community and the learner's drive to integrate with that community (i.e., cultural awareness, heightened self-concept, intercultural communication, etc.).

[2] In the questionnaire, a distinction was made between "being bilingual" and the "importance of bilingual multicultural curriculum".

[3] Percentage totals do not equal 100 due to two responses indicating "no advantage" and one lack of response.

For non-Hispanic children:

Children can understand their Hispanic peers and there is a greater degree of interaction. The cultural differences would be understood without prejudice.

For Spanish-preferring Hispanic children:

It is important for native Spanish children to speak English in this country because more often than not, they will be confronted with only English-speaking persons in higher positions.

Children get a better self-concept because they recognize that speaking Spanish is just as good as speaking English. This helps them learn not to be ashamed of their language.

Table 18 summarizes changes in teachers' attitudes toward various language models over the course of the preschool year. At pretest, teachers were generally more favorable toward the use of home and community language rather than textbooks as models for either first or second language development. By the end of the year, however, teachers' attitudes toward the use of textbooks had become more favorable. This may have resulted from their increased familiarity with a variety of texts in English and Spanish as a result of their experience with the curriculum models. Although only one model provided specific language lessons as part of the curriculum package, all encouraged establishment of bilingual book corners for the children. When interviewed at the end of the year teachers also, with the exception of second language development of English-preferring children, expressed increasingly positive attitudes toward the use of language as spoken in the community. Although the attitudes toward use of the home language as a language model remained predominantly positive, there was a decrease in favorable responses in this area. Perceptions of less than perfect home language may have resulted from increased contact with parents or increased teacher awareness of children's language usage in the classroom based on the assessment methods prescribed by the curriculum models.

For the most part, the language preference of the child (English vs. Spanish preferring) did not affect teachers' attitudes toward different language varieties. Teachers did, however, both at the beginning and end of the year, appear to place greater value on English textbooks.

After experience with the preschool curriculum models, all of the teacher sample continued to view parental involvement in education as important. Comments such as the following illustrate this feeling:

Table 18. Attitudes toward different language models of teachers who participated in the experimental Head Start bilingual bicultural curriculum models. [1]

| | Spanish Speaking Children | | | | | | English Speaking Children | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Important [2] | | Neutral | | Unimportant | | Important | | Neutral | | Unimportant | |
| | PRE | POST | PRE | POST | PRE | POST | PRE | POST | PRE | POST | PRE | POST |
| | % | % | % | % | % | % | % | % | % | % | % | % |
| **Models for First Language Usage** | | | | | | | | | | | | |
| Home | 54 | 57 | 39 | 27 | 6 | 15 | 60 | 54 | 33 | 30 | 6 | 15 |
| Community | 45 | 53 | 45 | 27 | 9 | 9 | 45 | 60 | 42 | 30 | 12 | 9 |
| Textbooks | 30 | 39 | 33 | 36 | 36 | 24 | 48 | 51 | 24 | 30 | 27 | 18 |
| **Models for Second Language Usage** | | | | | | | | | | | | |
| Community | 42 | 69 | 42 | 21 | 15 | 9 | 42 | 32 | 45 | 42 | 12 | 15 |
| Textbooks | 45 | 54 | 27 | 24 | 27 | 21 | 36 | 48 | 30 | 24 | 33 | 27 |

[1] N = 33

[2] Categories collapsed from a 5 point scale

> Parents can help with the daily duties like tying shoes, getting the food, and doing things at home. I think it would have been nice to have my mom involved (in the classroom).
>
> I like working with parents but some consider us babysitters. It's good that they come and see all that goes on in the classroom.
>
> It's good to have parents working in the classrooms. I wish more of them would come.

As shown in Table 19, nearly three fourths of teachers' responses to various aspects of parent involvement were positive or very positive. The area in which the most notable favorable change in teachers' attitudes occurred was in their more positive view of the accuracy of the information provided by parents. This probably resulted from the emphasis of all the models on teachers' gathering of relevant data from parents regarding the children's home life and language usage. The least favorable responses in this area were consistently those related to the teachers' personal success in involving parents in their children's education. Although there were clear indications after the course of the preschool year that teachers had not had success in involving parents, the majority of these responses were from teachers where physical isolation of the site presented serious obstacles to parent involvement. Teachers also showed decreased enthusiasm toward the idea that teachers could do a better job with more parent participation.

## D. Degree of Implementation

Each experimental classroom was assessed on the degree to which the suggested procedures of a curriculum model were successfully implemented. The principal features of each model, as identified in its curriculum guide, were assessed through the use of observational checklists. In addition, ethnographic notes were used to identify factors outside of the classroom which influenced the implementation process at each site. Five areas: schedule and organization, physical setting; instructional materials; individual behavior; and instructional strategies, were assessed. All of the sites were somewhat successful in implementing a model and the overall degree of implementation was generally similar for the two replication sites for each model. Maximum scores for all classrooms, however, were slightly more than one half of the total points possible if absolute implementation, as defined by the observational instruments, were to be achieved. This finding, together with those of the more ethnographic data, suggests that an ideal level of implementation may be difficult to achieve. Given the impact of the various models, however, it would appear that the curriculum models need not be perfectly implemented to be effective.

Table 19. Attitudes toward parent involvement of teachers who participated in the experimental Head Start bilingual bicultural curriculum models.

N = 33

| | VERY POSITIVE | | POSITIVE | | NEUTRAL | | NEGATIVE | |
|---|---|---|---|---|---|---|---|---|
| | Pre | Post | Pre | Post | Pre | Post | Pre | Post |
| | % | % | % | % | % | % | % | % |
| Parents should be involved in the classroom | 48 | 54 | 39 | 36 | 12 | 9 | 0 | 0 |
| If parents cannot be in the classroom, teacher should have frequent contact with them | 42 | 33 | 45 | 48 | 15 | 6 | 0 | 3 |
| Teacher should attempt to involve seemingly uninterested parents | 66 | 45 | 9 | 18 | 24 | 36 | 0 | 0 |
| Teacher personal success in involving parents | 15 | 15 | 48 | 48 | 30 | 24 | 6 | 12 |
| Teacher could do a better job with more parent participation * | 52 | 43 | 13 | 17 | 22 | 35 | 13 | 4 |
| Parents provide accurate information to teachers * | 22 | 35 | 52 | 43 | 22 | 22 | 4 | 0 |

* N for these items is 23 due to missing data from two sites

The overall patterns of implementation and the results related to the five general categories of implementation differed across sites as the emphasis given each category and the items which made up a category were different for each model. These differences are discussed in subsequent chapters of the report. A number of factors, however, were found to consistently influence the implementation process primarily in terms of their effect on specific areas or categories of implementation. These are depicted in Figure 1.

1. Schedule and Organization. That aspect of programming most consistently implemented across all models was adherence to a planned schedule. Teachers generally carried out activities in the time planned for them. At some sites, however, there was a tendency to rely on one or two activities (e.g., play or large group) at the end of the year when the children were anticipating summer vacation. Variations in the amount of time devoted to specific activities on a given day's schedule were a result of such factors as late arrival of buses at the more isolated Head Start centers, child or teacher absences, and behavior problems. Changes in the schedule itself were related to factors beyond the control of the teacher such as equipment breakdown, special events, and adverse weather conditions.

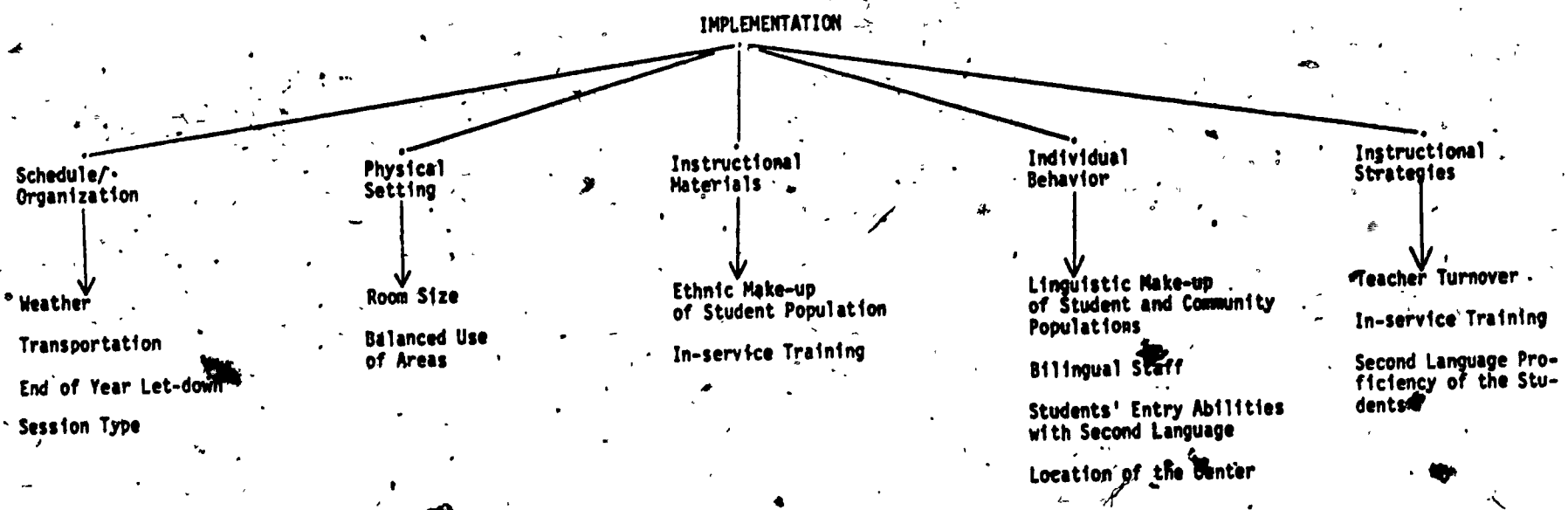
The type of daily session (i.e., full day, half-day or double session) in which the teachers worked affected their success in implementing the curriculum models. For the cases studied, a single half-day session was the most effective type of teaching situation. Teachers who had a half-day teaching load could use the remainder of their work day for planning, completing observational forms or profiles on the children, or making home visits, depending on the emphasis of a particular model. All of the classroom activities called for by a model were also carried out in full-day programs and by those teachers teaching two sessions each day. Ancillary activities and paperwork associated with the curricula were, however, seen by teachers working with such schedules to suffer owing to time constraints.

2. Physical Setting. With one exception, all of the sites had sufficient space for implementing the curriculum models. A moderate-to-large-size room with a rectangular shape was generally the setting for classroom activities. This type of environment allowed for separation of the classroom into model-specific learning centers or areas and permitted the children freedom of movement in utilizing the space. Lack of space at one site forced the teachers to stress structured activities and emphasize standard behaviors in carrying out transition activities, at the expense of free play or child-initiated activities.

A balanced use of the learning areas or centers was often difficult to achieve, especially during less structured activities. Most children had a favorite area to which they gravitated and children of different sexes generally preferred different areas. In some cases,

FIGURE 1

FACTORS AFFECTING SPECIFIC ASPECTS OF IMPLEMENTATION ACROSS ALL EVALUATION SITES



all of the areas called for by a model were not present owing to funding difficulties.

3. Instructional Materials. Instructional materials provided by the model developers or those suggested by the curricula were consistently used by the teachers at all sites. Items from Hispanic culture were lacking at some sites. At those sites where such items were present they were used regularly only in those classrooms with homogeneous Hispanic populations. Parent participation in the classroom was adversely affected at some sites by the distance of the Head Start centers from their homes and a lack of transportation to the sites. This reduced the role of parents as a resource in implementing bicultural aspects of the curricula. Both the use and variety of instructional materials increased after in-service training sessions dealing with the production of such materials.

4. Individual Behavior. Approaching a balanced use of two languages in the classroom proved the most difficult implementation goal to reach. Bilingual teachers tended to rely on one language, that which corresponded to the language preference of the majority of the student population, regardless of their own linguistic preference. Even at those sites where many of the children had some bilingual abilities, the language used in the community in which the preschools were found predominated for classroom use. Although some models did not require that all classroom staff be bilingual, monolingual teachers could not always respond to children in spontaneous interactions. The linguistic input provided to individual children varied with the entry-level abilities of the children. Spanish-preferring children with some initial ability in English received increasing practice in English throughout the year and, in those classrooms where English predominated, actually demonstrated a decided preference for using English in the classroom context at the end of the year. Spanish-preferring children who demonstrated no ability in English at pretest received increasing input in that language but in general maintained their preference for Spanish in most classroom interactions. With the exception of the few English-preferring children at sites where Spanish was the predominant classroom language, English-preferring children received direct input only in English.

5. Instructional Strategies. Carrying out the model's directives with regard to language instruction or practice seemed to be that aspect of programming most related to positive child outcomes. It was at those sites where the teachers most consistently followed the model's strategy for language practice that significant differences between experimental and comparison Head Start children were generally found. It appears, however, at most sites that English- and Spanish-preferring children received different treatments within the context of a bilingual curriculum model. English-preferring children received only "instruction in their second language" during second

language sessions or those situations structured for language practice. Spanish-preferring children received both "instruction in their second language" and "second language medium instruction"; that is, the the second language, English, was the vehicle used for conveying most subject matter. In addition, teachers using models recommending language separation encountered difficulties in maintaining the use of a single language during language sessions. At sites where proficiency with the second language was very low, children often did not understand a lesson conducted entirely in their second langauge and became bored. At other sites where second language proficiency of the children was high, they often persisted in speaking the second language even when the teacher was conducting the session in their first or preferred language.

Staff turnover affected the instructional strategies employed by the teachers. It was generally impossible to carry out small group or language sessions effectively with a single teacher, and new personnel needed time to adapt to a curriculum before they were able to effectively carry out the lessons as the models directed. Training sessions proved especially valuable in providing all teachers with an opportunity to practice skills targeted by the models as important for carrying out their instructional strategies and in ensuring that the teaching personnel had understanding of and confidence in the model.

The following example, taken from an observer's fieldnotes, serves to illustrate a number of the common elements in the teachers' efforts to implement the various curriculum models.

> Five Spanish-preferring children are sitting with the teachers in a circle in an area often used for language activities. The teacher, Miss Huerta, asks Donna in Spanish to tell her the color of an orange bead she is holding in her hand. The child responds correctly, "Anaranjado." The teacher then holds up a purple bead and Donna says, "Purple." Miss Huerta says, "Purple- muy bien Donna. ¿Y en español?" Donna responds, "Green," whereupon the teacher asks another child, "Y en español, Ray?" Ray answers, "Triangle." The teacher begins to distribute beads to each child. Ruth on receiving hers begins tossing it in the air. It slips through her small fingers and rolls on the floor where it is retrieved by Donna. Ruth commands, "Gimme it," and after first refusing, Donna accedes to her demand. Juan, sitting next to Donna, taps his bead on the floor and says, "It's hard." As Miss Huerta passes out more beads Juan states, "No, I don't want no colors." When the teacher asks Juan the color of his bead he correctly asserts, "Verde," but continues with his protest: "I don't want no colors inside there." Miss Huerta, slightly exasperated, states, "¡Nomás Donna va a jugar en las areas!"

Here a first language lesson for Spanish-preferring children took place as scheduled in an area normally used for such a lesson. The children interacted with materials but these were not especially representative of Hispanic culture. As was the case for all models, the adult-directed activity provided a context to review concepts, specifically those related to color. The teacher used a concrete object -- colored beads -- to stimulate the discussion of an abstract concept. The teacher conducted almost the entire lesson in Spanish. As happened frequently, at many sites, however, even the Spanish-preferring children tended to answer spontaneously and even converse among themselves in English, thus preventing a balanced use of the two languages.

## FOOTNOTES

[1]These three tests were chosen as they appear to be the most consistent measures and because on all of them children were tested in both English and Spanish.

[2]It may be argued that collasping across all children may result in one or two sites accounting for the significant differences. However, the qualitative results were similar at all sites and across the three sites where cell size was sufficient to run quantitative analyses controlling for site generally similar results were found.

[3]Despite the preference for English exhibited by a number of the Spanish-preferring children, as a group they reached the level of their English-preferring classmates only in English comprehension. Significant differences favoring English-preferring experimental children over Spanish-preferring experimental children with some pretest knowledge of English and favoring English-preferring comparison children over their Spanish-preferring counterparts were found on both EMLU and PSIE.

[4]The characteristics of each site at which observations of subsample children were made are discussed in the sections on the individual models.

[5]The exceptions to these patterns were what might be termed the "non-talkers" and the "good language learners" (Rubin, 1975). The "non-talkers" were those children who, despite teachers' efforts to draw them out, rarely spoke in the classroom. The "good language learners" were those children, who despite entering the Head Start program with little or no demonstrated productive ability in their second language, sought out situations to practice their second language. It was these few children who by the second observation period were usually observed limiting their interactions with peers to English. Together, those two types of children accounted for approximately 15% of the Spanish-preferring subsample.

[6]Of the 19 Spanish-preferring subsample children for whom test scores are available, five demonstrated some productive ability in their second language at the beginning of the year (i.e., EMLU>0.0). Only one of this group did not interact in English during the first observation period.

[7]Fourteen of the 19 Spanish-preferring subsample children for whom test scores are available began the year with a 0.0. EMLU. Only one of these children was observed interacting in English at the first observation period.

[8]Behaviors related to language development are divided into two general areas: linguistic competence and functional competence. LINGUISTIC COMPETENCE refers to those categories identified as cross-model objectives that reflect mastery of the basic structural patterns of the language (e.g. complete/incomplete sentences; plural nouns; negative and interrogative forms; present, past, and future tenses; and grammatically incorrect usage). FUNCTIONAL COMPETENCE relates to those categories identified as cross-model objectives that reflect the purposes for which language is used within various sociolinguistic contexts (e.g. description of self, others, and feelings; telling of a story/event; verbal instruction).

[9]Half of the children increasing their use of incomplete sentences were from one site where all but one subsample child entered school with little or no productive ability in English.

[10]Behaviors related to the areas of concept development are as follows: VISUAL DISCRIMINATION - identification of objects, of attributes or properties of an object, and of likeness and difference among objects; SERIATION/SEQUENCING - arrangement of objects, letters or numbers in a sequence, description of the relationship of sequenced items, and identification of the correct sequence of numbers; MATCHING/CLASSIFICATION/GROUPING - sorting and matching of objects, description of relative quantity; SPATIAL AND TIME RELATIONS - demonstration or description of the relative position of things and the use of clocks to mark the passage of time; SYMBOLIC REPRESENTATION - use of materials symbolically, creation of drawings or paintings, imitation of actions and sounds, and identification of abstract symbols; UTILIZATION OF OBJECTS - identification of purpose or correct utilization of objects.

[11]Of the 19 Spanish-preferring subsample children for whom test scores are available, six began the year with some knowledge of English concepts (Pretest PSIE scores $\geq 4$). All of the six were observed receiving practice in English concepts at the first observation period.

[12]Behaviors comprising the areas related to socioemotional behavior are as follows: SCHOOL READINESS - participation and non-participation in group activity, cooperation and lack of cooperation with others, compliance and non-compliance with directions, sharing or taking turns and refusal to share or take turns, and distracting other children; SELF ESTEEM - demonstration of pride in accomplishments, communication of capability to master new situations, crying and throwing tantrums; MOTIVIATION - independent completion of activity, reception of praise to maintain interest on task, reception of discipline to maintain interest on task.

[13]Throughout the text, names for all individuals are pseudonyms.

[14]Of the 16 English-preferring children for whom test scores are available 14 began the year with a 0.0 SMLU. Three of these were observed using Spanish at the first observation period. Of the two that did have a SMLU, one did not interact in Spanish during the first observation period.

[15]CDA training is intended to prepare child care personnel to assume direct responsibility for daily activities in child care programs such as Head Start, day care, nursery schools, and other pre-school programs.

# IV

## HIGH/SCOPE: UN MARCO ABIERTO

The High/Scope model is a cognitively oriented curriculum that emphasizes children's active learning through developmentally grounded key experiences. A "plan-do-review" process encourages children to exercise control over decision making by developing problem-solving strategies and goal-oriented behavior. An abundance of materials encourages exploration, while open-ended questions stimulate creative thought. Un Marco Abierto, the bilingual bicultural adaptation of the High/Scope model, also includes the goals of second language learning and multicultural familiarity. The model's approach to language learning is "natural" in the sense that language is integrated with ongoing activities rather than developed through scheduling of first or second language sessions. The balanced use of two languages, including concurrent translation, further encourages the model's aims for cognitive development, language development, and learning through key experiences.

This chapter describes the results of the Juárez and Associates evaluation of the implementation of High/Scope's Un Marco Abierto at two Head Start centers, Site I in East Los Angeles, California, and Site II in Milwaukee, Wisconsin. Discussion of the data is presented in three sections which correspond to the overall evaluation goals. The first, impact of the model, concerns the effects of the Un Marco Abierto curriculum on the three study sample groups -- Head Start children, parents, and teachers. The second section of the chapter discusses the degree to which the two replication sites and their respective classes were observed to fulfill the aims of the High/Scope Un Marco Abierto model. A summary and consideration of the feasibility of transfer of the Un Marco Abierto model is found in the third section of this chapter.

### A. Impact of the Model

What follows is a detailed discussion of children's test performance and their observed verbal interactions and behaviors in the classroom. Changes in attitudes of parents and teachers as reflected through interviews and questionnaires are also discussed.

## 1. Child Outcomes

### a. Sample of Children

One-hundred-twenty-eight children were administered the battery of standardized tests. Thirty-four of these children were enrolled in the East Los Angeles Head Start using the Un Marco Abierto model; 33 comparison group children attended a nearby Head Start. The Milwaukee site had 38 children in the Un Marco Abierto program, a comparison group of 12 children in a Home-Based Head Start program, and another 11 who did not attend a preschool. A complete discussion of the comparison groups is presented in a subsequent section of this chapter.

The sample children at the two sites differed in certain characteristics (see Appendix N ). There were relatively equal numbers of boys and girls in the East Los Angeles experimental and comparison groups, but boys outnumbered girls in the Milwaukee comparison group. Roughly 60% of the Los Angeles experimental group was Spanish preferring, compared to 70% of the comparison group, although all but two children (both in the experimental site) were Hispanic. In Milwaukee, about 45% of the experimental children were Spanish preferring, compared to 87% of the comparison children. This difference was due to the six Anglo children in the experimental sample, whereas all comparison children were Hispanic.

### b. Test Results

(1) Spanish-preferring Children. At both sites the standardized tests were administered to children participating in the Un Marco Abierto model as well as to groups of comparison children. Cell size was sufficient to allow a comparison of Spanish-preferring children across the two sites. A number of differences were found on the measures between the Spanish-preferring samples at the two sites. When the effects for site were controlled for in the statistical analysis, significant differences favoring the children participating in the Un Marco Abierto model were found. (Table 20 ).

The analyses reveal that all significant differences favored the experimental group over their comparison group counterparts. The effect of the model was most evident for Spanish-preferring children on English language measures. Despite the fact that the comparison group was also receiving a Head Start treatment from bilingual teachers, the Un Marco Abierto children showed greater gains on three of the four measures given in English. These measures were English Language Acquisition, English Comprehension, and Concept Development. In addition, the Spanish-preferring experimental children demonstrated significant gains over the Spanish-preferring comparison children on the Narration Description Scale in Spanish.[1]

Table 20. Un Marco Abierto Model level ANCOVA and ANOVA results for Spanish-preferring children. Experimental and comparison Head Start children at both sites were compared on six constructs controlling for the effect of site.

| CHILD MEASURES | SIGNIFICANCE[2] Treatment | Site | Interaction | COVARIATES[3] | POSTTEST MEANS[4] (STD. ERROR OF MEAN) N = NUMBER OF SUBJECTS: EXPERIMENTAL HEAD START SITES I & II | COMPARISON HEAD START SITES I & II | EXPERIMENTAL & COMPARISON HEAD START SITE II | EXPERIMENTAL & COMPARISON HEAD START SITE I |
|---|---|---|---|---|---|---|---|---|
| 1. LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE | | | | | | | | |
| Spanish Mean Length of Utterance | ns | ns | ns | | 4.27(.13) N = 36 | 4.06(.17) N = 31 | | |
| English Mean Length of Utterance | ● | ns | ns | FAC | 2.48(.25) N = 36 | 3.53(.27) N = 31 | | |
| 2. LANGUAGE COMPREHENSION-ESCUCHEN ESTE CUENTO -LISTEN TO THE STORY | | | | | | | | |
| Spanish | ns | ns | ns | INC | 9.16(.36) N = 34 | 8.76(.38) N = 30 | | |
| English | ● | ● | △ | INC | 8.10(.51) N = 34 | 8.67(.60) N = 30 | 5.74(.64) N = 22 | 8.03(.46) N = 42 |
| 3. LANGUAGE PRODUCTION-DIMELO TU | | | | | | | | |
| Quantity of Spanish Words | ● | ns | ● | | 56.35(3.92) N = 34 | 46.03(4.42) N = 29 | 48.33(4.73) N = 24 | 63.62(3.06) N = 39 |
| Object Description Scale | ns | ● | ns | PRETEST, EDASP | 4.49(.25) N = 35 | 3.71(.28) N = 30 | 3.42(.31) N = 23 | 4.76(.23) N = 42 |
| Narration Description Scale | ● | ● | ns | PRETEST | 13.96(.44) N = 36 | 11.70(.54) N = 31 | 12.21(.57) N = 24 | 13.45(.40) N = 43 |
| 4. CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY | | | | | | | | |
| Spanish Scale | △ | ● | ns | PRETEST, EDASP | 18.17(.67) N = 35 | 16.18(.75) N = 30 | 14.84(.84) N = 23 | 19.61(.62) N = 42 |
| English Scale | ● | ● | ns | PRETEST, INC | 14.23(.88) N = 33 | 9.13(1.02) N = 30 | 7.87(1.09) N = 21 | 15.50(.76) N = 42 |
| 5. PERCEPTUAL MOTOR DEVELOPMENT | | | | | | | | |
| Spanish Scale | □ | | | | 3.86(.07) N = 35 | 3.87(.08) N = 31 | | |
| English Scale | □ | | | | 3.00(.26) N = 36 | 2.45(.29) N = 31 | | |
| 6. SOCIOEMOTIONAL BEHAVIOR-TESTER CHECKLIST | | | | | | | | |
| Socioemotional Functioning | ns | ● | ns | PRETEST | 17.53(.34) N = 31 | 17.03(.37) N = 31 | 16.64(.44) N = 19 | 17.93(.28) N = 43 |

[1] Statistical comparisons were either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; no entry in this column indicates that the statistical test employed was ANOVA. Test measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a □ mark in the "significance" columns.

[2] The following symbols are used to depict significance

● $p \leq .0500$
△ $.0500 < p \leq .1000$
ns $.1000 < p$
□ significance not computed

[3] Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income), 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

[4] Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

It was also possible to contrast the Spanish-preferring children at the Un Marco Abierto site in East Los Angeles[2] with their comparison group in terms of entry-level abilities in English on selected test measures. As can be seen from Table 21, results are consistent with those found for all Spanish-preferring children experiencing the Un Marco Abierto curriculum model. Significant differences favoring the experimental children were found on two of the three English measures -- English Comprehension and Concept Development.[3] On the third English measure -- English Acquisition -- significant differences between the Spanish-preferring groups with different entry abilities in English were found. These results suggest, as do those presented earlier, that experience in a bilingual bicultural program allowed children who entered school with little or no English ability to make up initial differences on these constructs to such an extent that they significantly outperformed similar comparison children. On the measure which required greater verbal command of the second language, however, they continued to lag behind those children who entered the classroom with some command of English. The Un Marco Abierto children also outperformed the Head Start comparison children on the measure of Spanish Acquisition suggesting, as do the results at the model level which favor the Spanish-preferring children in Spanish, that this bilingual bicultural curriculum is also contributing to development in the first language.

(2). English-preferring Children. Owing to a lack of English-preferring comparison children at the Milwaukee site, no model level analysis could be carried out for the English-preferring children. As can be seen from Table 22, no significant differences were found favoring either the English-preferring children at Site I or the English-preferring Head Start children to whom they were compared. This suggests that there was no price to be paid in terms of first language development by English-preferring children who participated in the Un Marco Abierto bilingual bicultural model. Similarly, no significant differences favoring either group were found on the measures administered in Spanish. Consistent with the classroom observations which suggested that the English-preferring children in the Un Marco Abierto classrooms had very little practice with the second language, posttest scores on a number of Spanish measures remained at zero.

As an insufficient number of English-preferring comparison children was found at Milwaukee, the 19 English-preferring experimental children at this site were also compared to the English-preferring Head Start comparison group at East Los Angeles. As can be seen from Table 23, results were generally similar to those found at Site I. No significant differences between the two groups were found on any of the language or concept measures in either language. The comparison children did, however, perform significantly better than the experimental group on the measure of Socioemotional Behavior. In addition, with a third group in the statistical model the experimental children at East Los Angeles performed significantly better than their comparison group on the measure of English Concept Development.

Table 21. Un Marco Abierto Site I comparison of Spanish-preferring children grouped by English entry level ability. Experimental and comparison Head Start children were compared on selected constructs.[1]

| CHILD MEASURES | SIGNIFICANCE[2] Treatment | English Entry Level | Interaction | COVARIATES[3] | POSTTEST MEANS[4] (STD. ERROR OF MEAN) N = NUMBER OF SUBJECTS EXPERIMENTAL HEAD START | COMPARISON HEAD START | SPANISH-PREF. GROUP$_1$ | SPANISH-PREF. GROUP$_2$ |
|---|---|---|---|---|---|---|---|---|
| LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE | | | | | | | | |
| Spanish Mean Length of Utterance[5] | * | ns | ns | | 4.32(0.16) N = 20 | 3.87(0.15) N = 23 | 3.97(0.61) N = 19 | 4.16(0.15) N = 24 |
| English Mean Length of Utterance | ns | * | ns | FAC | 2.24(0.33) N = 20 | 1.56(0.31) N = 23 | 1.32(0.34) N = 19 | 2.48(0.30) N = 24 |
| LANGUAGE COMPREHENSION-ESCUCHEN ESTE CUENTO -LISTEN TO THE STORY | | | | | | | | |
| Spanish | ns | ns | ns | | 9.15(0.45) N = 20 | 8.91(0.47) N = 23 | 8.53(0.44) N = 19 | 9.42(0.47) N = 24 |
| English | * | ns | ns | FAC | 8.64(0.52) N = 20 | 7.17(0.50) N = 23 | 7.36(0.54) N = 19 | 8.46(0.48) N = 24 |
| CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY | | | | | | | | |
| Spanish Scale | Δ | Δ | ns | PRETEST | 20.25(0.71) N = 20 | 18.57(0.60) N = 23 | 18.51(0.73) N = 19 | 20.32(0.66) N = 24 |
| English Scale | * | ns | ns | PRETEST | 16.73(1.22) N = 20 | 13.31(1.17) N = 23 | 14.43(1.33) N = 19 | 15.61(18) N = 24 |

[1]Statistical comparisons were either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; no entry in this column indicates that the statistical test employed was ANOVA. Test measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a mark in the "significance" columns. Children were grouped by English entry level ability as follows: Spanish-preferring Group$_1$ includes all children who showed little or no ability on the English pretest measures (EMLU = 0, PSIE ≤ 3, ECOMP ≤ 3). Spanish-preferring Group$_2$ includes all children who demonstrated some ability in English on the pretest measures (EMLU > 0, PSIE > 3, ECOMP > 3).

[2]The following symbols are used to depict significance

* $p \leq .0500$
Δ $.0500 < p \leq .1000$
ns $.1000 < p$
□ significance not computed

[3]Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income); 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

[4]Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

[5]Covariates initially selected to adjust posttest scores on this dependent variable were dropped because their regression slopes were heterogeneous within cells of the model. Where possible other covariates were selected.

Table 22. Un Marco Abierto Site I ANCOVA and ANOVA results for English-preferring children. Experimental and comparison Head Start children were compared on six constructs. [1]

| CHILD MEASURES | SIGNIFICANCE[2] Treatment | COVARIATES[3] | POSTTEST MEANS[4] (STD. ERROR OF MEAN) N = NUMBER OF SUBJECTS EXPERIMENTAL HEAD START | COMPARISON HEAD START |
|---|---|---|---|---|
| 1. LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE | | | | |
| Spanish Mean Length of Utterance | □ | | 0.08 (0.06) N = 14 | 0.32 (0.32) N = 10 |
| English Mean Length of Utterance | ns | FAC | 4.32 (0.17) N = 14 | 4.21 (0.22) N = 8 |
| 2. LANGUAGE COMPREHENSION-ESCUCHEN ESTE CUENTO LISTEN TO THE STORY | | | | |
| Spanish | ns | | 4.64 (0.99) N = 14 | 6.50 (1.16) N = 10 |
| English | ns | AGE PRESENT | 8.39 (1.08) N = 14 | 9.39 (1.99) N = 9 |
| 3. LANGUAGE PRODUCTION-YOU SAY IT | | | | |
| Quantity of English Words | ns | PRETEST FAC EDASP | 54.46 (3.81) N = 14 | 53.44 (4.66) N = 9 |
| Object Description Scale | ns | | 4.32 (.30) N = 14 | 4.32 (0.42) N = 8 |
| Narration Description Scale | ns | INC | 12.73 (0.95) N = 14 | 12.97 (0.79) N = 8 |
| 4. CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY | | | | |
| Spanish Scale | ns | FAC | 2.98 (1.23) N = 14 | 6.28 (1.62) N = 8 |
| English Scale | ns | | 21.91 (1.63) N = 14 | 17.31 (2.40) N = 9 |
| 5. PERCEPTUAL MOTOR DEVELOPMENT | | | | |
| Spanish Scale | □ | | 0.64 (0.34) N = 14 | 1.40 (0.60) N = 10 |
| English Scale | □ | | 3.93 (0.07) N = 14 | 3.50 (0.22) N = 10 |
| 6. SOCIOEMOTIONAL BEHAVIOR-TESTER CHECKLIST | | | | |
| Socioemotional Functioning | ns | EDASP PRETEST | 18.93 (0.31) N = 14 | 19.00 (0.46) N = 7 |

[1] Statistical comparisons were either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; no entry in this column indicates that the statistical test employed was ANOVA. Test measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a □ mark in the "significance" columns.

[2] The following symbols are used to depict significance

● $p \leq .0500$
▲ $.0500 < p \leq .1000$
ns $.1000 < p$
□ significance not computed



[3] Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income), 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

[4] Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

Table 23. Un Março Abierto Site I and Site II ANCOVA and ANOVA results for English-preferring children. Experimental children at both sites were compared to comparison Head Start children at Site I on six constructs.[1]

| CHILD MEASURES | SIGNIFICANCE[2] Overall | Exper. Site II vs. Comp. Site I | Exper. Site I vs. Comp. Site I | COVARIATES[3] | POSTTEST MEANS[4] (STD. ERROR OF MEAN) N = NUMBER OF SUBJECTS: EXPERIMENTAL HEAD START SITE II | EXPERIMENTAL HEAD START SITE I | COMPARISON HEAD START SITE I |
|---|---|---|---|---|---|---|---|
| 1. LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE | | | | | | | |
| Spanish Mean Length of Utterance | □ | | | | 0.60 (0.33) N=19 | 0.08 (0.06) N=14 | 0.32 (0.32) N=10 |
| English Mean Length of Utterance | ns | ns | ns | PRETEST | 4.16 (0.16) N=19 | 4.42 (0.19) N=14 | 4.08 (0.23) N=10 |
| 2. LANGUAGE COMPREHENSION-ESCUCHEN ESTE CUENTO -LISTEN TO THE STORY | | | | | | | |
| Spanish | ns | ns | ns | PRETEST, FAC | 5.84 (0.87) N=16 | 5.70 (0.93) N=14 | 6.48 (1.16) N=8 |
| English | ns | ns | ns | | 9.21 (0.65) N=19 | 8.14 (0.67) N=14 | 9.50 (0.78) N=10 |
| 3. LANGUAGE PRODUCTION-YOU SAY IT | | | | | | | |
| Quantity of Spanish Words | □ | | | | 0.06 (0.06) N=18 | 0.00 (0.00) N=14 | 0.00 (0.00) N=10 |
| Quantity of English Words | ns | ns | ns | PRETEST | 53.97 (4.41) N=19 | 51.31 (3.18) N=14 | 51.12 (5.95) N=10 |
| Object Description Scale | ns | ns | ns | EDASP | 4.13 (0.37) N=16 | 4.07 (0.38) N=14 | 3.88 (0.40) N=8 |
| Narration Description Scale | ns | ns | ns | AGE | 13.40 (0.53) N=19 | 12.87 (0.62) N=14 | 12.63 (0.73) N=10 |
| 4. CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY | | | | | | | |
| Spanish Scale | ns | ns | ns | FAC | 4.18 (1.14) N=16 | 3.93 (1.20) N=14 | 7.13 (1.58) N=8 |
| English Scale | ● | ns | ● | PRETEST, AGE | 18.22 (0.66) N=19 | 21.97 (0.81) N=14 | 18.62 (0.90) N=10 |
| 5. PERCEPTUAL MOTOR DEVELOPMENT | | | | | | | |
| Spanish Scale | □ | | | | 1.11 (0.37) N=19 | 0.64 (0.34) N=14 | 1.40 (0.50) N=10 |
| English Scale | □ | | | | 3.84 (0.12) N=19 | 3.93 (0.07) N=14 | 3.50 (0.22) N=10 |
| 6. SOCIOEMOTIONAL BEHAVIOR-TESTER CHECKLIST | | | | | | | |
| Socioemotional Functioning | ● | ● | ns | PRETEST | 16.42 (0.63) N=17 | 18.61 (0.69) N=14 | 19.15 (0.89) N=9 |

[1] Statistical comparisons were either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; no entry in this column indicates that the statistical test employed was ANOVA. Test measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a □ mark in the "significance" columns.

[2] The following symbols are used to depict significance:

● $p \leq .0500$
▲ $.0500 < p \leq .1000$
ns $.1000 < p$
□ significance not computed

[3] Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income), 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

[4] Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

c. Classroom Observations

Focused observations of a subset of 11 children were conducted at three points in time over the school year at Un Marco Abierto I. The observations of the preschoolers, six of whom were Spanish-preferring and five of whom were English-preferring, were then coded for behaviors that had earlier been identified as cross-model objectives in the areas of language, concept development, and socioemotional development. Frequency counts of these observational protocols and samples of classroom interactions provide dimensions of process and quality against which to view the test results.

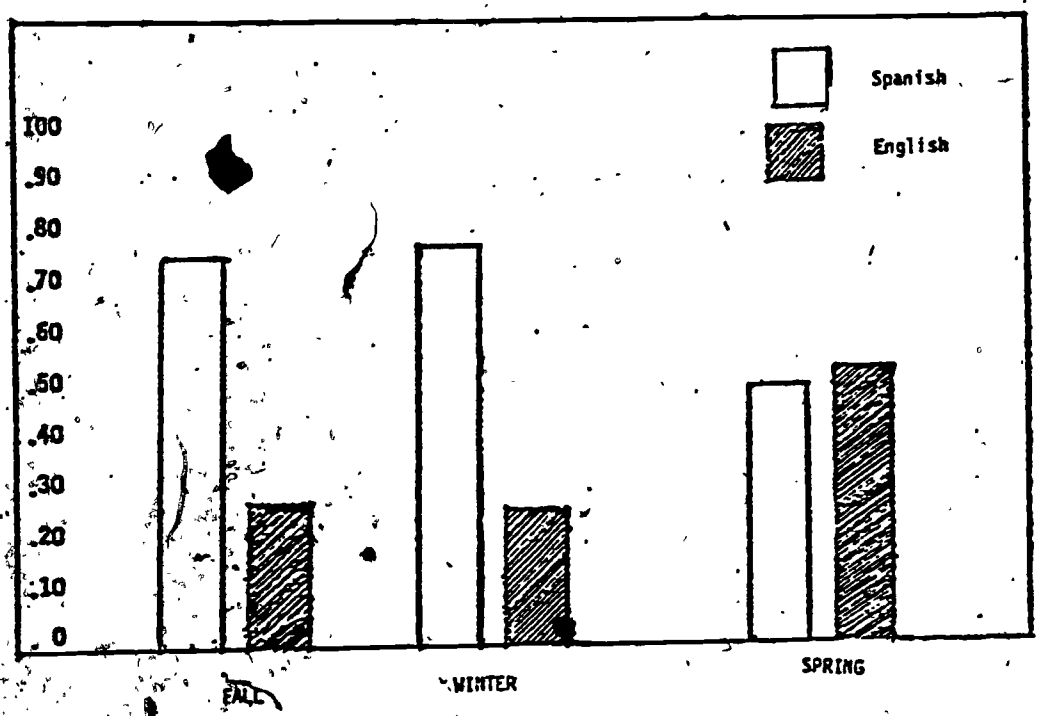
(1) Language usage. Figure 2 shows the overall language usage for subsample children during each of the three observation periods. Although Spanish-preferring children received extensive practice in the use of Spanish throughout the year, there was a general trend toward more English use over time (30% to 48%). English-preferring children, on the other hand, received almost no practice in Spanish as more than 99% of their verbal interactions occurred in English at each observation period.

An examination of the experiences of individual Spanish-preferring children suggests that practice in the second language early in the year was limited to those children who entered the Head Start center with some verbal ability in English as measured by their average MLU on the Bilingual Syntax Measure. As can be seen from Table 24, José, Carolina, and Lea used some degree of English in the classroom at the first observation period; the latter showed a slight preference for English even at this early date. By the end of the year all three children could be classified as English-preferring in the largely English language environments of the Un Marco Abierto classrooms. They did, however, continue to perform better on most Spanish measures at the posttest.

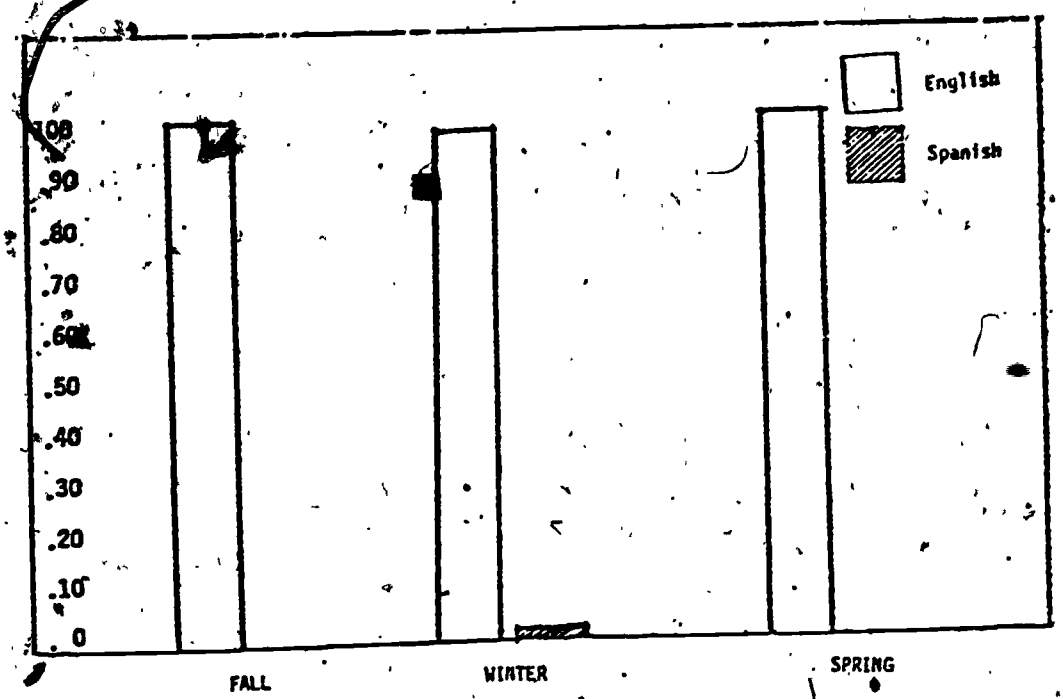
The interactions of the three children and the direct verbal input they received reflected their increasing use of English. Early in the year most of the input supplied by peers to all three children and by teachers to two of the three children in their individual interactions was Spanish. By midyear almost all of the input received by Lea and slightly over half of that received by the other two children was in English. This trend continued to the end of the year when at least 70% of the input given directly by teachers and 50% of that supplied by peers to any of the children was in English (see Table 25).

Crispine, an additional Spanish-preferring subsample child, although entering the program with little demonstrated ability in the second language (as shown by the test results) showed incremental change similar to that of his more bilingual classmates. He also tended to interact with English-speaking children as the year progressed. At midyear he was observed responding to queries in his second language

Figure 2. Classroom observations of child language use were obtained for a subsample of Spanish-preferring and English-preferring children during Fall, Winter, and Spring. The figure below shows the proportion of Spanish and English use in Un Marco Abierto subsample children's language over time.




Spanish-preferring children




English-preferring children

Table 24. Relative frequency of observed usage of Spanish and English by individual subsample children over three points in time: Un Marco Abierto.[1]

| | SPANISH | | | ENGLISH | | | LANGUAGE MIXING[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | I | II | III | I | II | III | I | II | III |
| **SPANISH PREFERRING** | % | % | % | % | % | % | % | % | % |
| Irma | 100 | 93 | 100 | 0 | 3 | 0 | 0 | 4 | 0 |
| Victoria | 100 | 96 | 87 | 0 | 2 | 12 | 0 | 2 | 1 |
| Crispine | 90 | 85 | 56 | 0 | 7 | 42 | 10 | 8 | 2 |
| Lea | 44 | 3 | 22 | 53 | 97 | 77 | 3 | 0 | 1 |
| Carolina | 76 | 67 | 42 | 14 | 28 | 57 | 10 | 5 | 1 |
| Jose | 65 | 60 | 2 | 27 | 27 | 92 | 8 | 13 | 6 |
| **ENGLISH-PREFERRING** | % | % | % | % | % | % | % | % | % |
| Ernesto | 0 | 5 | 0 | 100 | 95 | 100 | 0 | 0 | 0 |
| Lucia | 0 | 0 | 0 | 100 | 100 | 100 | 0 | 0 | 0 |
| Candido | 0 | 0 | 0 | 100 | 100 | 100 | 0 | 0 | 0 |
| Barbara | 0 | 0 | 0 | 100 | 100 | 100 | 0 | 0 | 0 |
| Danny | 0 | 0 | 0 | 100 | 100 | 100 | 0 | 0 | 0 |



[1]Percentage totals may not equal 100% due to rounding.

[2]Indicates switching of languages within a single sentence or phrase (e.g., Me das un yellow ).

Table 25. Proportion of observed Spanish and English input directed to individual subsample children by teachers and peers over three points in time: Un Marco Abierto.[1]

| | CHILD'S NAME | SPANISH-PREFERRING | | | | | | | | | | | | ENGLISH-PREFERRING | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | IRMA | | VICTORIA | | CRISPINE | | LEA | | CAROLINA | | JOSE | | ERNESTO | | LUCIA | | CANDIDO | | BARBARA | | DANNY | |
| | | % SP. | % ENG. | % SP. | % ENG | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. |
| TIME ONE | TEACHER | 100 | 0 | 95 | 5 | 93 | 7 | 0 | 100 | 57 | 43 | 79 | 21 | 9 | 91 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 |
| | PEER | 100 | 0 | 0 | 0 | 0 | 0 | 91 | 9 | 33 | 67 | 63 | 33 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 25 | 75 |
| | OVERALL | 100 | 0 | 95 | 5 | 93 | 7 | 26 | 74 | 50 | 50 | 69 | 31 | 8 | 92 | 0 | 100 | 0 | 100 | 0 | 100 | 3 | 97 |
| TIME TWO | TEACHER | 92 | 8 | 100 | 0 | 87 | 13 | 0 | 100 | 48 | 52 | 48 | 52 | 2 | 98 | 0 | 100 | 5 | 95 | 0 | 100 | 0 | 100 |
| | PEER | 100 | 0 | 100 | 0 | 93 | 7 | 0 | 100 | 76 | 24 | 58 | 42 | 0 | 100 | 0 | 100 | 50 | 50 | 0 | 100 | 0 | 100 |
| | OVERALL | 97 | 3 | 100 | 0 | 11 | 89 | 0 | 100 | 57 | 43 | 51 | 49 | 2 | 98 | 0 | 100 | 9 | 91 | 0 | 100 | 0 | 100 |
| TIME THREE | TEACHER | 63 | 27 | 83 | 17 | 53 | 47 | 13 | 87 | 32 | 68 | 9 | 91 | 4 | 96 | 0 | 100 | 0 | 100 | 4 | 96 | 0 | 100 |
| | PEER | 74 | 26 | 38 | 62 | 33 | 67 | 50 | 50 | 26 | 74 | 40 | 60 | 27 | 73 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 |
| | OVERALL | 70 | 30 | 72 | 28 | 49 | 51 | 29 | 71 | 29 | 71 | 17 | 83 | 8 | 92 | 0 | 100 | 0 | 100 | 3 | 97 | 0 | 100 |

[1] Percentage totals may not equal 100% due to rounding.

with short answers in English and by the end of the year he would often use English through entire 5-minute observation periods. Teachers' input to Crispine went from 93.7% in Spanish at the first observation period to 67% in English at the final observation.

The final two Spanish-preferring children, Victoria and Irma, entered the program with abilities similar to those of Crispine. They, however, as evident from Table 24, received little verbal practice in the second language. Victoria was a shy child who had difficulty adjusting to the classroom and generally avoided speaking at all. In attempting to draw her out, both teachers and peers spoke to her exclusively in Spanish throughout the first two observation periods. By the final observation period the child had begun to participate to a greater degree in classroom activities and thereby came into contact with English-speaking peers who provided input in that language. Irma expressed herself throughout the year in Spanish, although she demonstrated enough understanding of the second language to be able to respond correctly to input in English from both teachers and classmates.

Despite the increased use of English by most of the Spanish-preferring children, children were observed practicing a variety of forms indicative of linguistic competence in Spanish. The number of linguistic categories in which the children received practice in their preferred language increased for four of the six children (see Appendix O). The two children for whom this trend did not hold true were those who were using English almost exclusively at the end of the year. The most general trends occurred with the increase in plural nouns and negatives. Functionally, all but one child increased the percentage of verbal instructions given in Spanish. Diversification of functional competencies were, however, observed for only two of the six children. In English all but the child who consistently interacted in Spanish throughout the year showed increasing diversity in the linguistic competencies they practiced. Three of those children who showed the greatest increase in English usage, Carolina, Crispine, and Lea, also showed general relative gains across most of the cross-model objectives in the area of linguistic competence. One child, José, who demonstrated relatively large increases in English usage, tended to show gains in only a few areas suggesting that his linguistic repertoire was not as diverse as that of the other children exhibiting similar increases in their use of English. Victoria, the child who was slow to adapt to the classroom environment, obtained some practice with complete sentences, the present tense, and interrogative form by the third observation period. Those four children who showed the greatest increase in English usage also exhibited the greatest relative gains in the practice of functional competencies. Their increased practice was observed to occur principally in the areas of self-description and verbal instruction.

All English-preferring children appear to have had very similar experiences in the Un Marco Abierto classrooms. They interacted primarily in English throughout the year. The verbal input

that they received from both teachers and English-speaking peers was also principally in English. (Table 25 shows that between 91% and 100% of all input directed at the individual children was in English.) The number of areas of linguistic competence which the children practiced increased for all of them over the year. The most general trends, shown in Appendix P , were increased practice with complete sentences, where four out of five children improved, and use of the past tense, where all children showed gains. There was also a tendency by all children to use more grammatically incorrect utterances over the year as the children diversified their speech. Functionally, trends similar to those observed with the Spanish-preferring children were found. Consistent with the model's practice of a structured session for recalling the day's events, most children increasingly described themselves and their feelings over the year. All but one child also provided more verbal instruction, an ability emphasized by the model, as the year went on.

In the area of language comprehension and recall, although observations for individual children were limited owing to the lack of emphasis on circle time, the children's language use patterns were similar to those observed in general (see Appendix Q ). The four Spanish-preferring children who greatly increased their usage of English in the classroom went from recalling entirely in Spanish to recalling almost completely in English. For two of the children there was, however, an accompanying increase in incorrect responses in English, suggesting that despite responding in English, these children misinterpreted much of what they heard. Victoria and Irma continued to use only Spanish when practicing comprehension/recall skills and all of the English-preferring children only spoke English in these endeavors.

The behaviors of children of both groups which were related to cross-model goals in the area of language comprehension/recall occurred largely during observations of the recall activity. As would be expected, given the lack of emphasis on circle time at Un Marco Abierto I, most of the responses related to providing information about the classroom or home, an ability emphasized in the recall activity. Lacking was identification of sounds, voices, and rhymes which would be practiced during circle time.

The greatest amount of child language production throughout the year consistently occurred during the activities of planning, small group, and recall. This would be expected because teachers emphasized language expansion through questions during these activities. A sample of instructional interactions for two Spanish-preferring subsample children illustrates the two major trends in learning experience of individual students of this language preference.

• José, one of the children who showed a great increase in his English usage over the year, was an attractive child with straight black hair and large brown eyes. He was extremely active and at times aggressive, often taking the lead in organizing games among his peers.

Although he was generally well behaved in the classroom, José's eagerness to participate in group situations sometimes caused him to speak out of turn and distract other children. On the pretest he performed better on all Spanish measures but also exhibited some verbal ability and understanding of English. Early in the year his preferred language in the classroom was also Spanish, as noted in a planning activity.

Teacher: What area? . . . ¿Qué área?
José : Area tranquila.
Teacher: ¿Con qué vas a jugar?
José : Con esos.
(Points to some balls of string.)
Teacher: What are you going to do?
José : Ponerlos en una cinta.
Teacher: Put them on a string.
José : Con bolitas de contar.
Teacher: Counting balls . . . anything else?
José : (Fails to respond to the teacher, but goes to get symbols requested by other children.)

Here although the teacher made repeated attempts to elicit responses in English through similarly structured WH questions and simultaneous translation, José persisted in answering in Spanish. His responses were, however, appropriate to the questions, revealing his comprehension of English. The teacher used this comprehension to provide José with vocabulary through the continued translation of his utterances in Spanish.

By midyear José's productive ability in English had expanded to where he often spontaneously responded with incomplete English utterances, even to questions addressed to him in Spanish by the teacher. He still, however, exhibited a lack of familiarity with basic English vocabulary and tended to language-switch back to Spanish to fill in for unlearned lexical items. The exchange below, recorded during a planning activity in March, shows this behavior:

Teacher: ¿Qué vas a hacer?
José : A house.
Teacher: ¿Qué vas a hacer?
José : Una casa con dos ventanas, it gonna have five doors, un techo.
Teacher: How do you say it in English?
José : (No response.)

As the end of the year approached, José demonstrated a greatly improved vocabulary in English as well as an ability to effectively handle a variety of functions. Another planning sequence, from June, typifies José's speech after nine months in the Un Marco Abierto program.

Teacher: What's your plan?
José : Block area.
Teacher: What are you going to do?
José : Make a house, use wooden blocks. (Points to hollow blocks.)
Teacher: What are those?
José : Domino blocks.
Teacher: No, hollow blocks. What are you going to put in your house?
José : Windows, doors, roof, and chimney . . . that's all.
Teacher: Do you have a second plan?
José : (Nods his head affirmatively.)
Teacher: What is it?
José : Quiet area. I want the little sticks.
Teacher: Show me the ones.
José : (Gets up and points to the box of rods.

Unlike his performance at the beginning of the school year, José responded effectively in English to a variety of questions, including both WH and yes/no type, all of which were now posed by the teacher in English. He not only replied to the questions but voluntarily expanded his answers and elaborated (e.g., "use wooden blocks" to "make a house" as opposed to simply "make a house"). The dialogue also provides evidence of José's ability to respond to directives in English and to successfully use such lexical items as "window" and "roof" which a few months previously he had not mastered. His progress was also reflected in his test results where, with the exception of the English acquisition measure,[4] he performed better or as well as his English-preferring classmates. As can be seen by the above examples, such abilities were fostered in the planning sessions as teachers consistently provided lacking vocabulary and often ended a session with a directive.

• Irma was one of the children who did not increase her use of English in the classroom over the school year. She was a pretty child with bright brown eyes and a charming smile. Irma performed as well as other Spanish-preferring children on tests given in her first language but showed no comprehension of or verbal ability in English. Although very outgoing and concerned about others, she tended to interact most often with Spanish-speaking classmates. She quickly picked up an understanding of English words but almost always used Spanish, in which she was very articulate, in the classroom.

Early in the year her interactions were much like José's in that the teachers' repeated attempts to elicit responses in English through simultaneous translation were answered in Spanish. With Irma, however, this pattern of behavior was still common at midyear as shown in the observation of a recall activity in which an upcoming trip to the snow was discussed.

Irma : Nosotros vamos a perder en la montaña.
Teacher : ¿Quién te dijo?
Irma : Mi mammá.
Teacher : Si vamos en grupo no nos vamos a perder.
Irma : ¿Vamos en el carro?
Teacher : No, en el bus, what color is the bus?
(Holding up a picture of a green bus.)
Carolina: Green.
Teacher : (To Irma:)
Is it green?
Irma : (No answer, then says:)
No se comen la nieve.
Teacher : Sí, si está limpia se puede comer.
Greg : (To Irma:)
You give me your symbol. I give you mine to Mike.
Irma : (Handing Greg the symbol.)
Mira tú manchastes tu símbolo.
(Greg's symbol had gotten wet.)

In this sequence Irma exhibited her willingness to interact with both the teacher and her peers. Her language choice, however, was always Spanish. This was true even when addressed in English with a question which she obviously understood. When faced with a situation in which the teacher was attempting to encourage her use of English by following a classmate's lead, Irma adopted the strategy of changing the subject in Spanish.

Late in the year, Irma continued to make the same types of language choice. The following interaction observed in the art area where Irma was attempting to make a paper crown with the aid of the teacher typifies this tendency.

Teacher: Let's see if this works.
(Placing the crown she has just made on the table.)
Is that the coronita?
Irma : Es para un rey.
Teacher: (Translating.)
For a king. Do you want to make one?
Irma : Si tú me vas a decir como.

Despite the teacher's efforts to encourage the child to speak English both through translation and questions which required only yes/no answers, Irma chose to reply in Spanish. Her answers were, however, appropriate to the questions asked demonstrating her understanding of her second language. This was also reflected in the posttest results where her score in English comprehension was equivalent to that of most of her English-preferring classmates, although her score in English verbal ability remained relatively low.

The similarity in the experience of the English-preferring children in the Un Marco Abierto I classrooms makes the example of one child sufficient to characterize classroom interactions.

Danny was an average-sized child whose warm smile reflected an outgoing personality. Like many of the English-preferring children at Un Marco Abierto I, Danny was encouraged to speak only English by his mother, even though a grandmother living with the family spoke only Spanish. At school Danny interacted in English with both Spanish and English speakers. This led to periodic communication breakdown with his Spanish-speaking peers during the early part of the school year. During the first months of school Danny tended to use short, incomplete phrases in English with adults. Such speech behavior is seen in the following language sample taken during a planning session in November.

Teacher: Did you decide?
Danny : Block area -- play with trucks.
Teacher: What are you going to make?
Danny : Going to make a garage.
Teacher: What kind of garage?
Danny : Like a building.

As Danny demonstrated the ability to respond to both yes/no and WH questions in English, the teacher made little attempt to encourage elaboration, although expansion was encouraged. Similarly, no effort was made to use Spanish in any way with the English-preferring child. Thus, Danny's responses were confined to the bounds of the questions asked by the teacher and, as reflected by his inappropriate word deletion in "going to make a garage," showed a still developing proficiency in English.

By the end of the school year, Danny exhibited greater verbal ability in his interactions with the teacher. Although interactions remained limited to English, he was now able to elaborate spontaneously and to offer a rationale for his actions where previously his answers had been limited to providing only the information requested.

Teacher: Danny, what area are you going to?
Danny : Block area. This is the only one I can find.
(Showing an area symbol.)
Teacher: That's all right. What's your second plan?
Danny : Play with the paint.

Danny's productive ability in Spanish even at the end of the year was limited to catch phrases and food names, used exclusively with Spanish-preferring peers, shown by a lunchtime request in June to "pass me the beans, por favor." He had, however, increased his understanding of Spanish; for example, when a friend expressed in Spanish

her dislike for pears he encouraged her to "taste it."

(2) Concept Development. Broadening children's experience with concepts, many of which are represented by "key experiences," is a fundamental goal of the model. Although the model makes no distinction between concept development in English and Spanish, it appears from the results of the standardized measures and the classroom observations that, as with language development, the teachers at Un Marco Abierto I emphasized concept acquisition in English and in areas which were nonlanguage specific.

Table 26 shows that five out of the six Spanish-preferring children decreased their relative use of Spanish in this area. This decrease was accompanied by relative increases in English usage and/or nonlanguage-specific behaviors related to concept development. English-preferring children's practice was limited almost entirely to their first language and to behaviors which do not require the use of language.

Visual discrimination and symbolic representation were the areas in which children were observed to consistently receive the most practice (see Appendix S). During the first observation period practice was related principally to the identification of objects, object utilization and role-playing activities. Thus, much of the early practice with concepts was related to familiarization with the classroom environment through identifying objects and their function. For children of both language groups there was a trend toward increased diversity in concept development both within and across the skill areas that made up the construct. Spanish-preferring children diversified principally in their second language where all but one child showed increases in the number of areas in which they had practice and in nonlanguage-specific behaviors where four of the six children diversified (Appendix R). English-preferring children's diversification was primarily in their preferred language despite slight relative increases in Spanish by three of the five children at the second observation period.

Although small group activities were those designated by the model as specifically designed for concept development, learning experiences related to this construct also occurred in planning, work time, or recall. The trend toward diversification and English usage is best illustrated by examining the learning experiences in these activities of children from different language backgrounds within a single classroom.

Carolina was a Spanish-preferring child of medium size who generally wore her long brown hair in banana curls. She enjoyed cooperative work and eagerly sought out other children or adults, interacting in Spanish and English as the year progressed. Despite her verbal and comprehension abilities in her second language, she demonstrated almost no grasp of concepts in English when tested at the start of the year. At the posttest, however, she received near maxi-

Table 26. Relative frequency of observed practice with concepts by language for individual subsample children over three points in time: Un Marco Abierto.[1]

| | SPANISH | | | ENGLISH | | | NON-LANGUAGE SPECIFIC | | |
|---|---|---|---|---|---|---|---|---|---|
| | I | II | III | I | II | III | I | II | III |
| **SPANISH-PREFERRING** | % | % | % | % | % | % | % | % | % |
| Irma | 33 | 20 | 40 | 0 | 0 | 20 | 67 | 80 | 40 |
| Victoria | 71 | 33 | 47 | 0 | 0 | 6 | 28 | 66 | 47 |
| Crispine | 70 | 50 | 21 | 0 | 20 | 25 | 30 | 30 | 54 |
| Lea | 15 | 0 | 0 | 62 | 47 | 25 | 23 | 53 | 75 |
| Catalina | 20 | 26 | 7 | 30 | 39 | 28 | 50 | 35 | 64 |
| Jose | 57 | 15 | 5 | 19 | 0 | 47 | 24 | 85 | |
| **ENGLISH PREFERRING** | % | % | % | % | % | % | % | % | % |
| Ernesto | 0 | 0 | 0 | 50 | 75 | 67 | 50 | | 33 |
| Lucia | 0 | 9 | 0 | 28 | 54 | 100 | 71 | | 0 |
| Candido | 0 | 0 | 0 | 71 | 60 | 27 | 28 | | 73 |
| Barbara | 0 | 5 | 0 | 75 | 58 | 40 | 25 | 37 | 60 |
| Danny | 0 | 6 | 0 | 14 | 77 | 45 | 85 | 17 | 95 |

[1]Percentage totals may not equal 100% due to rounding.

mum scores on both the English and Spanish versions of the concept development measure.

The following example of a November small group activity, in which the teacher used dishes from the house area to discuss similarities and differences, exemplifies the experience of those Spanish-speaking children who made the greatest progress in their second language.

Teacher : What can you do with a plate?
Jorge : Eat.
Teacher : ¿Qué más?
Carolina: Puedo tomarlo y poner la taza asi.
(Demonstrating with her hands the placing of a cup on a saucer.)
Teacher : (With two plates in each hand.)
Do you have the same amount of plates?
¿Son iguales?
Carolina: Yes.
Teacher : (Holding up a blue plate.)
¿Qué color es?
Carolina: (With others.)
Blue.
Teacher : What color in Spanish?
Alicia : Azul.

In this example the teacher was exploring such concepts as function, size, and color. She encouraged both Spanish and English speakers to participate by asking questions in both languages and calling for translation of the word "blue." Even at this early date in the school year there was a tendency on Carolina's part to respond to questions in English even when such questions were posed in Spanish. When, however, the concept called for an answer which was beyond a one-word response, as in the case of the function of a plate, her tendency was to resort to her first language.

By May, Carolina used English in nearly all situations related to concepts where verbal response was required. Even when responding to questions in Spanish, Carolina often language-switched using the English word in a Spanish sentence. When Carolina and a teacher looked through an instruction book for tinker toys at a table in the quiet area, the teacher pointed to a house that the child might construct:

Carolina: Too little the house.
(Spying another picture she continues:)
I already made that one.
(The teacher and child begin to work and the teacher asks about a missing piece:)
Teacher : ¿Qué falta?

Carolina: A little yellow.
(Locking a yellow tinker toy on the tray she turns to another child and says:)
Me das un yellow.

The following example characterizes the experience of the English-preferring children at Un Marco Abierto I.

Ernesto was an attractive child with long curly brown hair and blue-gray eyes. An English-preferring child from a single parent family, Ernesto was very verbal with adults and preferred interacting with them. When tested at the start of the school year his score, even on the measure of concept development in English, was relatively low in comparison to his English-preferring classmates. At the posttest, however, he scored near the average for the group.

Teacher: (Holding up a book she has been reading to a group of children in a January small group.)
What's happening here?
Ernesto: It's raining. . .
Teacher: What's he doing?
Ernesto: He's hiding under a rabbit tree.
Teacher: (Pointing to butterflies in the picture.)
Are they all the same?
Ernesto: Yeah, they're the same.

During June, Ernesto, with the teacher at his side, was working on the puzzle of a cow.

Ernesto: (Holding up a piece.)
Where's this?
Teacher: I'm not going to tell you. You're playing games with me.
(She then identifies the piece:)
That's the leg.
Ernesto: (Says nothing but puts the piece in place.)
Teacher: Very good, Ernesto. I don't think you need my help anymore.
Ernesto: (Picks up another piece.)
What's this?
Teacher: That's the body. What belongs up front?
Ernesto: (Picks out the head.)
Teacher: The head, right.

In both cases, the interactions were conducted entirely in English. The first example, observed at midyear, shows the teacher expanding the child's language while exploring such concepts as relative position and similarities and differences. The second highlights the child's ability to identify parts of the body and matching objects. Whereas earlier in the year Ernesto demonstrated the ability to respond correctly to a variety of WH questions, at the later observation he also had the ability to formulate such questions and seemed to have internalized the characteristic mode of teacher-child classroom communication.

(3) Socioemotional Functioning. As can be seen from Table 27, a number of the Spanish-preferring children exhibited inappropriate behavior at the first observation. As might be expected, these were almost entirely in the area of school readiness and related to such behaviors as the failure to participate in group activities or to follow directions as the children adapted to the preschool routine. For all but one child, José, such inappropriate behavior decreased by the end of the year. José throughout the year continued to act as a class clown and was often observed distracting other children. Even Victoria, the extremely shy child who was observed to consistently exhibit inappropriate behavior in the area of self-esteem, decreased in such behaviors as the year progressed.

English-preferring children showed a more varied pattern of socioemotional behavior over the year. As with the Spanish-preferring children, almost all inappropriate behavior was observed in the area of school readiness. With the exception of Barbara, however, who, as a relatively solitary child throughout the year, refused completely to participate in group activities as the year closed, the inappropriate behaviors within the category changed from lack of participation and inability to follow directions to being distracted or distracting others. This suggests that with the coming of summer, children were anticipating vacation and becoming slightly bored with the routine.

Throughout the year children of both language preferences exhibited consistently more appropriate than inappropriate socioemotional behaviors. There were also fairly consistent trends on the part of most children toward such school readiness behaviors as following directions and sustaining interest in group activities. While early in the year it was common to have such observations as "Enrique sits at the table but does not participate in the activity of the group" or "She wanders, looking at the other children working," by the end of the year such observations as the following became the norm: "Daniel sings along in English and does all of the hand movements. He is smiling as he sings." "José stands when his number is counted in 'Ten Little Indians.' He falls down when it is time for him to sit and count the 10 children in the circle when asked to do so by the teacher."

Table 27. Relative frequency of observed appropriate and inappropriate socioemotional behavior for individual subsample children over three points in time: Un Marco Abierto.[1]

| | APPROPRIATE | | | INAPPROPRIATE | | |
|---|---|---|---|---|---|---|
| | I | II | III | I | II | III |
| SPANISH-PREFERRING | % | % | % | % | % | % |
| Irma | 100 | 100 | 101 | 0 | 0 | 0 |
| Victoria | 0 | 67 | 82 | 100 | 34 | 19 |
| Crispine | 60 | 50 | 100 | 40 | 50 | 0 |
| Lea | 100 | 100 | 101 | 0 | 0 | 0 |
| Carolina | 67 | 0 | 89 | 33 | 0 | 11 |
| Jose | 70 | 50 | 61 | 30 | 50 | 39 |
| | I | II | III | I | II | III |
| ENGLISH-PREFERRING | % | % | % | % | % | % |
| Ernesto | 50 | 60 | 90 | 50 | 40 | 10 |
| Lucia | 67 | 50 | 67 | 33 | 50 | 33 |
| Candido | 100 | 50 | 99 | 0 | 50 | 0 |
| Barbara | 100 | 100 | 57 | 0 | 0 | 44 |
| Danny | 100 | 100 | 79 | 0 | 0 | 21 |

[1] Percentage totals may not equal 100% due to rounding.

## 2. Parent Outcomes

### a. Parent Sample

The 105 parents that were interviewed as members of either the experimental or control group appear to reflect the ethnic characteristics of the communities in which the Head Start sites are found (Appendix L). At the East Los Angeles site, the 56 families were a mixture of about 60% first-generation Mexican Americans who had been in Southern California 10 to 15 years and about 40% second generation Mexican Americans. The only exceptions were one East Indian family in the comparison group of 28 parents and one mixed Black/Mexican American family in the experimental group of 28 parents. In Milwaukee 68% of the total of 49 families was Mexican American and 22% was Puerto Rican. One American Indian family, one Black family, and four Anglo families also formed part of the 22 experimental families interviewed in Milwaukee.

At both sites the majority of the mothers who responded to the parent interview described themselves as "not working." Another adult member of the household, usually the father, appeared to be the principal breadwinner in all groups. Income distribution was similar for experimental and control families within a site. Annual family incomes of about $9,000 in Milwaukee were higher than the $7,000-$8,000 mean in East Los Angeles. No significant differences were found in family size or average age of children between experimental and comparison groups at either site.

### b. Mothers' Attitudes and Perceptions

The parental interview results, summarized in Table 28, reveal that mothers of experimental and comparison children at both sites felt their children spoke better Spanish than English. They perceived the Spanish spoken by children as "correct" but thought that their children spoke "poor" English even though practicing it more. Respondents' self-reports claimed greater proficiency in Spanish than English, no doubt because the Hispanic networks of churches, groceries, clubs, family, and friends enabled women in the two areas to retain their first language. East Los Angeles mothers also reported a slightly better English ability than did their comparison counterparts.

Both Milwaukee and Los Angeles mothers exhibited highly positive attitudes toward the importance of bilingual education and self-concept. Interview data show that many second-generation individuals at Site I felt that although they were discouraged from speaking Spanish themselves, they wanted their children to grow up proud of their ethnic heritage. There was also an increasing recognition of the practical benefits of being bilingual. Community members saw a higher demand for bilingual teachers, receptionists, secretaries, and salespeople. In most cases, a bilingual person was perceived as able to earn more money.

Table 28. Comparison of the attitudes and perceptions of mothers of all sample children: Un Marco Abierto.

| | SITE I | | | | | SITE II | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Signif-icance[1] | Experimental MEAN (Adjusted) | Group (N) | COMPARISON MEAN (Adjusted) | Group (N) | Signif-icance | Experimental MEAN (Adjusted) | Group (N) | COMPARISON MEAN (Adjusted) | Group (N) |
| **Language Assessment of Child** | | | | | | | | | | |
| Spanish Ability | ns | 1.76 | 32 | 1.91 | 17 | ns | 2.31 | 28 | 2.22 | 29 |
| English Ability | Δ | 1.86 | 32 | 1.56 | 17 | ns | 1.95 | 28 | 1.86 | 29 |
| **Maternal Language Usage** | | | | | | | | | | |
| Spanish-Speaking Ability Instructs in Spanish | ns[2] | 2.44 | 32 | 2.58 | 17 | ★[2] | 2.49 | 27 | 2.85 | 28 |
| English-Speaking Ability Instructs in English | ns | 1.82 | 32 | 1.52 | 17 | ns | 1.49 | 28 | 1.70 | 29 |
| **Mother's Role as Teacher** | | | | | | | | | | |
| Provides Formal Instruction | ★ | 0.81 | 32 | 0.57 | 17 | ns | 0.68 | 27 | 0.66 | 29 |
| Provides Instructional Playthings | ★ | 0.59 | 32 | 0.41 | 16 | ns | 0.66 | 28 | 0.73 | 29 |
| **Mother's Belief About Education** | | | | | | | | | | |
| Overall School Effectiveness | ns | 3.77 | 32 | 3.55 | 17 | ns | 3.89 | 27 | 3.68 | 28 |
| Career Preparation | ns | 2.55 | 26 | 2.22 | 12 | ns | 2.11 | 17 | 2.44 | 23 |
| Importance of Bilingual Education | ns[2] | 4.05 | 28 | 3.82 | 14 | ns | 4.14 | 24 | 4.07 | 24 |
| Importance of Self-Concept | ns | 4.07 | 28 | 4.00 | 14 | ns | 4.15 | 24 | 4.07 | 24 |
| Educational Aspiration for Child | ns | 14.63 | 29 | 14.87 | 17 | ns | 17.33 | 25 | 17.77 | 23 |
| **Socioeconomic Status** | | | | | | | | | | |
| Family Income | ns | 11.29 | 17 | 11.32 | 13 | ns[2] | 8.84 | 24 | 8.83 | 24 |

[1] The following symbols are used to depict level of significance

★ $p \leq .0500$

Δ $.0500 < p \leq .1000$

ns $.1000 < p$

□ significance not computed

[2] Failed test of homogeneity of within cell regression slopes: $p \leq .0500$

Lack of differences between the two sites and between experimental and comparison mothers may be a result of the majority of all mothers having their children enrolled in classes which provided some sort of bilingual experience. All of the mothers hoped for at least some college for their children, and some experimental and comparison mothers at Site II held the aspiration of their offspring pursuing a graduate degree.

Table 28 further illustrates that Los Angeles experimental mothers provided significantly more formal instruction and greater amounts of instructional playthings to their children than did comparison mothers. No significant differences between experimental and comparison mothers in Milwaukee were reported.

Mothers were also asked to describe their children's daily routine (Appendix V). At East Los Angeles, mothers of both comparison and experimental children saw their offspring's principal activities between the hours of 9:00 A.M. and 3:00 P.M. as school related. Percentages of time spent in activities such as watching television and playing differed little between the two groups over the year, and instructional activity outside the classroom was reported as rarely occurring in either group.

As would be expected, the major difference between the two groups of children at the Milwaukee site was in the area of school-related activities (see Appendix V). All of the experimental children were involved in preschool activities during the period of 9:00 A.M. to 3:00 P.M., whereas only four of the comparison group children were ever involved in such activities. During the time that the experimental children were in school, playing was identified as the primary activity of the control group. It appears that the preschool activities engaged in by the four comparison children were not generally viewed by their parents as the primary activity of the children at any one point during the day, a result perhaps of the rather loose structure of such activities.

## 3. Teacher Outcomes

### a. Teacher Sample

The interview sample consisted of four teachers and aides at Site I and six teachers and aides at Site II. The classroom staff ratios were approximately 8:1 at Site I and 6:1 at Site II. Only pre-post interview data were used in the analysis. These were obtained only from teachers and aides who remained in the classrooms throughout the preschool year.

Teachers and assistant teachers or aides at both High/Scope sites were all Hispanic women; at Site II all were Mexican Americans, while there were two Mexican Americans and four Puerto Ricans at

Site II. All of the four teachers at Site I were English-preferring,[5] while the majority of teachers and aides at Site II reported speaking Spanish and English equally.

All High/Scope I teachers had lived in the Los Angeles area for most of their lives, while their counterparts in Milwaukee averaged a total of approximately 19 years' residence in the city. Classroom staff at Site II generally resided in immediate proximity to the Head Start center.

In California, teachers and aides ranged from 27 to 38 years of age. Teachers were somewhat more stable financially, owning their own homes, while all the aides rented homes within walking distance of the site. In Milwaukee ages of classroom staff ranged from 32 to 53 years, and the three teachers owned homes while the aides rented.

In terms of education and experience, although none of the three teachers at Site I was CDA certified, all held Children's Center permits obtained by taking 30 units at a local community college. The head teacher and site representative for the agency lacked a few hours to complete B.A. requirements. All teachers' aides but one held high school diplomas. Teachers' educational experience at the Milwaukee site ranged from completion of the 11th grade to two years of college credit and one held a CDA certificate. Two of the three aides had GED degrees, and one had a Children's Center permit reflecting completion of two years of an early childhood education program at a local college.

Each teaching staff member had worked her way up to the teaching level by gaining experience as either a parent volunteer, nutrition aide, parent coordinator, or school janitress. East Los Angeles teachers all had five or more years of teaching experience except for one who was in her first year. Classroom experience at Milwaukee ranged from 14 years (one teacher and one aide) to less than one year for two aides and one substitute aide for whom 1979-1980 was the first year. (For complete teacher characteristics, see Appendix M).

b. Teachers' Attitudes

Teachers at East Los Angeles generally expressed more positive attitudes toward the High/Scope model than did those at Milwaukee. In informal interviews the classroom staff at Site I expressed their satisfaction with the diversity of the schedule and felt that most activities were well suited to children's attention span. Certain activities called for by the model, however, were received with mixed feelings. One of the teachers felt that recall time became boring and repetitive after a few months as the number of things to talk about were limited. Other teachers expressed feeling uncomfortable with role playing situations.

Comments of the classroom staff at Site II revealed a feeling of insecurity as to understanding the basics of the model. Some teachers felt that the language of the teacher's guide was too technical and that early in the year they really did not understand how to develop "key experiences." In-service workshops were important in helping the staff to understand the model.

Teachers and aides at both High/Scope sites changed slightly over the year in their orientation regarding the purposes of bilingual education. The majority of the teaching staff felt that cultural awareness, communication and understanding, development of self-concept, and language acquisition were important for their own sake. There was, however, a slight trend at the Milwaukee site toward recognizing the instrumental advantages of bilingualism, especially the creation of employment opportunities for native Spanish speakers and non-Hispanics.

Both groups viewed participation in a bilingual curriculum by both Spanish and English students as having integrative benefits, primarily those of enhanced cultural awareness and communication skills. Teachers at East Los Angeles also mentioned the socializing integrative function of a bilingual curriculum for both English and Spanish speakers, whereas Milwaukee teachers identified personal skills (self-concept, language acquisition) only for English speakers.

Concerning views of different models for children's language use, the pretest East Los Angeles teachers generally considered the language used at home and in the community to be more important models than textbooks for both first and second language learning. The one exception was the teachers' highly positive attitudes toward the use of textbooks as models for Spanish-speaking children's learning of English. At posttest, the teachers' attitudes toward home and community language became somewhat less favorable.

As in East Los Angeles, teachers at Milwaukee consistently placed higher value on the use of the language of home and community rather than of textbooks as a language model. Their attitudes toward textbooks as language models for children of either language preference, however, became more positive from pre- to posttest. The trend at both sites may be a result of the teachers' increased contact with individuals whom they viewed as speaking "correct" Spanish.

Both classroom staffs were consistent in viewing parent involvement in education as important (see Table 29). East Los Angeles teachers, however, seemed to see parent participation more postively than did those from Milwaukee. They were also very positive in their feedback that teachers should attempt to involve seemingly uninterested parents, while Milwaukee teachers were generally neutral. An increase in negative attitudes toward personal success in involving parents reflects the limited success teachers at both sites had in this area during the evaluation year.

Table 29. Attitudes toward parent involvement of experimental Head Start teachers: Un Marco Abierto

| | VERY POSITIVE | | POSITIVE | | NEUTRAL | | NEGATIVE | |
|---|---|---|---|---|---|---|---|---|
| SITE I N = 4 | PRE | POST | PRE | POST | PRE | POST | PRE | POST |
| Parents should be involved in the classroom | 75 | 50 | | 25 | 25 | 25 | | |
| If parents cannot be in the classroom, teacher should have frequent contact with them | 50 | 25 | 50 | 50 | | 25 | | |
| Teacher should attempt to involve seemingly uninterested parents | 100 | 75 | | 25 | | | | |
| Teacher personal success in involving parents | | 25 | 100 | 25 | | 25 | | 25 |
| Teacher could do a better job with more parent participation | | | | | | | | |
| Parents provide accurate information to teachers | | | | | | | | |
| SITE II . N = 6 | | | | | | | | |
| Parents should be involved in the classroom | 17 | 17 | 50 | 67 | 33 | 17 | | |
| If parents cannot be in the classroom, teacher should have frequent contact with them | | 17 | 83 | 67 | 17 | 17 | | |
| Teacher should attempt to involve seemingly uninterested parents | 17 | | 17 | | 67 | 100 | | |
| Teacher personal success in involving parents | | | 33 | 50 | 50 | 17 | 17 | 83 |
| Teacher could do a better job with more parent participation | 50 | 17 | 17 | 17 | 83 | 67 | | |
| Parents provide accurate information to teachers | | 17 | 67 | 33 | 17 | 50 | 17 | |

In judging the importance of a variety of procedures for incorporating Hispanic culture into the classroom, East Los Angeles respondents altered their views during the year. Whereas at the pretest three of the four had considered teaching children Hispanic values to be extremely important, by posttest only one held that view. However, exposing children to Hispanic customs, foods, and dress seemed important to these teachers at posttest, perhaps because of their experience working in these areas during the school year. Milwaukee teachers, on the other hand, were fairly consistent across the two periods. They considered the teaching of Hispanic values as extremely important and thought it very important that children be exposed to Hispanic role models, daily routines of Hispanic life, songs, dances, material culture, special roles (e.g., comadres), and Hispanic holidays.

## B. Implementation

This section provides the results of the evaluation related to the factors affecting the implementation of the Un Marco Abierto curriculum and to the extent to which implementation occurred. The discussion is augmented by Appendix Y , which provides descriptions of (1) the sociocultural environment of the communities, (2) the administrative aspects of each site, and (3) the Head Start settings. A description of the principal features of the Un Marco Abierto curriculum begins this section. The success of both replication sites and the individual classrooms within each site in meeting the goals of the model in five areas -- schedule and organization, physical setting, instructional materials, individual behavior, and instructional strategies -- is then discussed. The section closes with a description of the comparison groups for each site.

### 1. Principal Features

The Un Marco Abierto curriculum, an adaptation of the High/Scope cognitively oriented curriculum, is based on Piagetian principles, and emphasizes the learning of developmentally grounded tasks. Designed to encourage intellectual development through active learning, the model stresses the importance of the child's initiative in the learning process and the need to encourage children to have control over decision-making and problem-solving activities.

#### a. Model Goals

The stated goals of the High/Scope model include the following: provide children with a rich array of materials which encourage exploration and hold interest; motivate children to set goals and help them complete these goals through a "plan-do-review" process; stimulate the child's thinking process by asking open-ended questions.

The bilingual bicultural adaptation of the High/Scope model, Un Marco Abierto, includes as further goals the incorporation of second language learning and multicultural experiences in classroom activities. This dual emphasis is designed to help children understand and accept more than one cultural heritage and to develop during the first year of the curriculum a positive attitude toward a second language. Specifically, Un Marco Abierto calls for (1) the concurrent use of the children's first and second languages throughout the day, by using concurrent translation and language switching, (2) mixed language groupings so that there is a balance of the two languages spoken by adults and children, and (3) the use of language, art, music, and role play to represent the children's cultures and everyday experiences.

The student population should be divided into small groups (five to eight children) that work primarily with one adult throughout the day. These groups should represent a cross-section of the class in age, sex, and language preference and should change in their composition about every six weeks. Ideally, teachers should be bilingual and parent participation should be encouraged to help assure a continuity between home and school environments.

The model developers have identified approximately 50 "key experiences" for cognitive development. This myriad of learning experiences may be grouped into three basic categories: representation, logical relationships, and physical relationships. The development of representation is said to be closely related to a child's language acquisition and early reading skills. An example of representation would be children drawing pictures of something they remember from a field trip, then verbally describing their drawings to others. Logical relations deal with processes such as classification, seriation, and number concepts. Many materials in the classroom will be of different sizes so that children can practice arranging items according to size (seriation). Physical relations include developing activities involving time and space. All "key experiences" are intended to foster learning initiated and carried out by the learner.

Teachers and aides work as a team in planning daily lessons around one or more key experiences. They should specify which teaching strategies and activities will be used to introduce the key experiences; for example, if a teaching team wanted to work on classification and the concept of "alike or different," they might plan a period in which the children were given a bag of buttons and asked to identify which were alike and which were different, fostering discussion of shape, color, size, and number of buttonholes.

The model emphasizes the need to evaluate each day's activities prior to making the next day's plan. Teachers are to plan in a work team (one teacher and one or two aides) with each member discussing the events of the day and reporting on each child's response to the

lessons. Within the team, every member is responsible for the children in his or her group. The model ideals call for teachers and assistant teachers to have similar roles in the classroom, thereby circumventing children's identifying a classroom hierarchy based on language or ethnicity. These teacher evaluations should determine the needs of each child and focus the lesson plans for the next day.

b. Classroom Organization

(1) Core Areas. An Un Marco Abierto classroom is designed to encourage exploration and to provide children the opportunities for making decisions and setting goals. The model specifies four core areas per classroom: the block area, house area, art area, and quiet area. There should also be an area large enough for the entire class to meet (which may be contained within one of the core areas) and an outdoor play area. In addition, supplementary areas like music, science, and water may be included in the classroom. Core areas are to be labeled and separated from each other with shelves and other low-rise dividers where a wide variety of stored materials can be easily seen and grasped by the child. Each area should encourage at least one of many different key experiences.

The block area, for example, should contain building materials of different size, shape, and substance to encourage sorting, matching, grouping, and arranging objects. In the block and house areas, children are to use the blocks, small dolls and animals, furniture, and vehicles in role play. There are also numerous adult-size materials in the house area that encourage fine motor manipulation and sorting. Each item's place on the shelf is clearly labeled so children have further opportunity to sort according to shape, size, and color when they replace toys. Whenever possible the actual classroom materials are to reflect the multicultural traditions of the students.

(2) Schedule. The curriculum model emphasizes the need to establish a consistent daily routine for both teachers and children. To facilitate the objective of helping children set and carry out goals, the major learning activities consist of planning, work time, and recall. Other scheduled daily periods should include small group (for concept development), outside time (for large-muscle activities), and circle time (which gives children the opportunity to participate in a large group).

During planning time children discuss with teachers and peers where they wish to work and what they want to do. This process is meant to foster language development through verbalization and self-reliance through active decision making. Work time, when students are to carry out their plans, occurs in the heart of the school day and represents the longest single amount of time outlined in the

daily routine. During work time, children may use the entire room, interacting with persons and materials. The adult's role during this time is to observe individual students, to devise strategies for helping them with problems, and to recognize and support children's work. Clean-up time follows work time and is the activity in which children learn to feel responsible for replacing the materials they have been using, to separate and sort materials, and to work cooperatively.

Recall time gives children the opportunity to remember, discuss, or represent what they did at work time. Ideally, children recall what they did at work time not only by talking about their experiences, but also by showing their groups the toys and materials they worked with, by drawing or painting pictures of what they did, or by acting out what occurred earlier during the day. Small group time should be organized by teachers to offer further opportunity for adults to introduce some of the key experiences seen as integral to active learning. The basic differences between small group time and work time, according to the model, are that children plan for work time and the teaching team plans for small group. Small group activities introduce all children to particular materials and projects which they can later pursue individually during work time.

Outside time provides a period in which children can use their large muscles and possibly extend work time activities. The adult should play the same role outside as she or he does during work time, i.e., being actively involved with children by talking to them, encouraging them to talk about what they are doing, helping them to solve problems, and otherwise extending their activities. Circle time, the period during which the entire group gathers to play finger games, sing songs, do dances, and listen to stories, is the only time when everyone is doing the same activity at the same place. Children learn to share, to take turns, and to be both leaders and followers. Stories and songs in both languages are also to be presented.

2. Model Level Implementation

The assessment of the degree of implementation was accomplished through the use of forms which contained model-specific items across five general categories of schedule and organization, physical setting, instructional materials, individual behavior, and instructional strategies. Although the items within each category have been weighted in terms of their relative importance to the model, the number of items within a category varies. Thus, total scores within a category cannot be compared but rather comparisons are made in the relative degree of implementation within each category (Figure 3).

FIGURE 3

UN MARCO ABIERTO DEGREE OF IMPLEMENTATION BY SITE OVER TIME

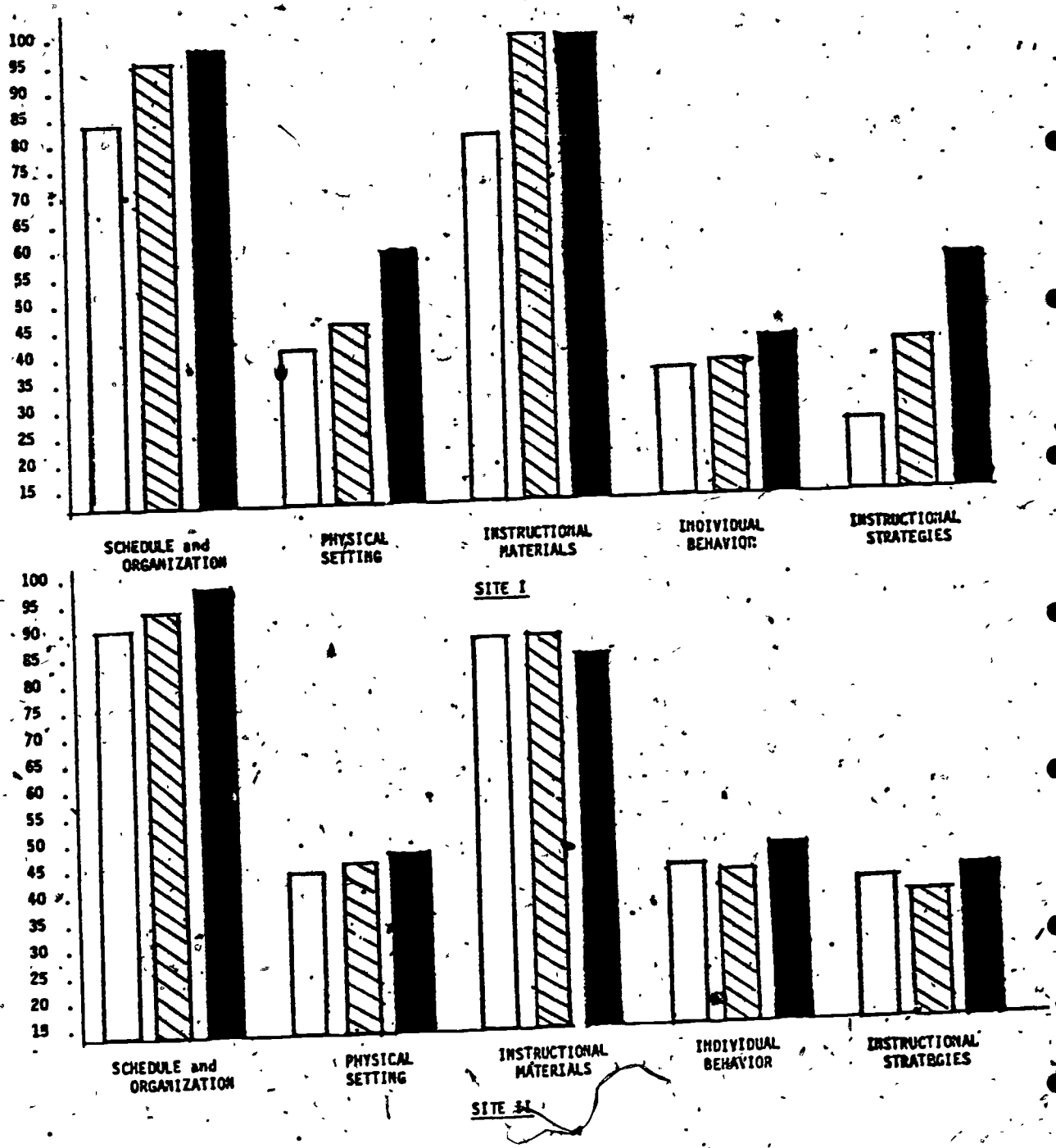


Table 30 presents aggregate scores of three classrooms implementing the Un Marco Abierto model at each of the two replication sites. As can be seen, the two sites vary somewhat in their patterns of implementation. Both sites show an increase in overall degree of implementation from the first observation period to the third, which may be related to experience gained from working with the model for a school year. Site I, however, shows rather large incremental gains whereas Site II reveals a more consistent level of implementation for the year. The sizable increase in total implementation between observation periods at Site I may be due to the organization of teacher preparation time which permitted teachers to take full advantage of the training they received. The free time allowed by a half-day teaching assignment provided teachers with ample time to analyze their experiences and those of their children as suggested by the model. They were often observed using such free time to plan future activities based both on their own ideas and those suggested by the model's trainer. The lower scores during early implementation periods reflect teacher turnover, which led to each teaching pair having a member who was inexperienced with the model. The consistent level of implementation at Site II may be related to the fact that all instructors were familiar with the model and that teaching units remained constant over the evaluation year.

At both sites activities were planned and carried out with fairly strict adherence to the schedule as shown by the near maximum scores in this category. In fact, for 12 of the 36 observations across the two sites, all planned activities occurred during each day of observation. When scheduling requirements were not met it was usually a result of small group activities being omitted from the daily routine. As this period required prior planning and preparation of materials, its omission could occur as a result of teacher absence, a lack of understanding of the requirements of the activity, or the pressures of time related to two-a-day sessions.

The use of the physical setting was similar at both sites in that the four core areas (block area, art area, house area, quiet area) were available in all classrooms and were well used throughout the year. Variation in scores reflects the greater number of ancillary areas (e.g., music, plant and animal, and water) used at various times at one or the other site.

Instructional materials were available in large number and variety at each site, which is reflected in the relatively high scores in this category. As specified by the model, they were generally laid out on shelves at the children's eye level. All classrooms at both sites, however, lacked culturally specific materials. The few that existed, such as molcajetes, pottery, and posters, reflected Mexican culture and generally served a symbolic function within the classrooms.

Table 30. Un Marco Abierto implementation scores by site over time.

| Implementation Categories | Maximum Possible Score | Site I | | | Site II | | |
|---|---|---|---|---|---|---|---|
| | | T1 | T2 | T3 | T1 | T2 | T3 |
| Schedule/ Organization | 12.04 | 10.17 | 11.46 | 11.89 | 10.89 | 11.32 | 11.75 |
| Physical Setting | 14.01 | 5.68 | 6.62 | 8.54 | 6.22 | 6.41 | 6.30 |
| Instructional Materials | 3.00 | 2.42 | 3.00 | 3.00 | 2.58 | 2.58 | 2.50 |
| Individual Behavior | 24.42 | 8.67 | 8.96 | 9.99 | 10.73 | 10.01 | 11.47 |
| Instructional Strategies | 26.70 | 6.97 | 10.67 | 15.41 | 10.75 | 9.79 | 11.27 |
| TOTAL | 80.17 | 33.91 | 40.71 | 48.83 | 41.17 | 40.11 | 43.29 |

The major differences in implementation of the Un Marco Abierto model at the two evaluation sites occurred in the areas of individual behaviors and instructional strategies. As depicted in Table 30, there is an increase in scores of individual behaviors from the first implementation observation period to the third at both sites. Consistently higher levels of implementation at Site II appear to be related principally to a better student-teacher ratio. Also affecting the scores was the teacher turnover at Site I and a seemingly greater willingness on the part of the teachers at Site II to interact with children in all areas (teachers at Site I tended to avoid the house area), use language that reflected the language preference of individual students, and employ more verbal reinforcement through either praise or discipline. The relatively low overall scores for both sites in this category are a result of the low frequency of concurrent use of both languages and the limited use of other adults such as parents.

In the category of instructional strategies, the marked increase over time shown by Site I indicates improving abilities of the replacement staff to carry out the demands of planning and small group and to use the language expansion techniques suggested by the model. Teachers at Site II expressed frustration at their lack of time for preparation and planning. They felt this prevented them from producing many dialogues and key experiences called for by the model. The relatively higher score for period 3 is a result of Site II teachers' attempts to augment their teaching strategies in ways suggested by the curriculum trainer. Although children's home activities were sometimes used in recall, this was not common. There was also a general lack of organized muscle development activities during outdoor play and circle time at both sites.

In general, both sites appeared to be highly successful in meeting High/Scope's goals of establishing and maintaining a consistent daily routine, furnishing a variety of readily available materials, and using the "plan-do-review" process. There was less success in meeting the bilingual bicultural goals of the model, as concurrent use of children's first and second language, incorporation of children's everyday experiences, and use of culturally diverse materials were not salient features in the classrooms at either site. The use of ancillary areas and activities such as small group or circle time varied over the course of the year at each site.

As can be seen from this brief discussion, factors such as varied student/teacher ratios, staff turnover, and the physical setting of the classroom affect the implementation of the model. Hence, it is worthwhile to examine the differences in degree of implementation within the individual classrooms of each site.

## 3. Classroom Implementation Factors (Site I)

The individual classrooms of Site I exhibit patterns of implementation similar to that of the site as a whole (Table 31 ); that is; there is a general increase in total implementation scores for each point in time across all classrooms. The classrooms do, however, differ slightly in the magnitude of their implementation; classroom C consistently totals between two and five points more than the other classrooms. The higher overall scores in that classroom indicate a greater commitment to the goals of the model by the teacher, for although all of the teachers exhibited positive attitudes toward the model when interviewed informally; the classroom C teacher was its most outspoken advocate.

In addition to the variation in total implementation, which favors classroom C, the degree of implementation within particular categories varies from one classroom to another at different times. The discussion which follows points out such differences within each of the five categories of implementation.

### a. Schedule and Organization

The daily routine, which was virtually the same for the morning and afternoon classes at Site I, was posted in large letters in English and in Spanish in front of the classroom. The activities were as follows:

| | |
|---|---|
| Breakfast (lunch) and planning | 30 minutes |
| Work time | 65 minutes |
| Cleanup time | 10 minutes |
| Recall time | 10 minutes |
| Outside time | 25 minutes |
| Small group time | 20 minutes |
| Rest time | 15 minutes |
| Lunch (snack) time | 30 minutes |
| Circle time | 20 minutes |
| Dismissal | |

Table 31. Un Marco Abierto I implementation scores by classroom over time.

| Implementation Categories | Maximum Possible Score | Classroom A | | | Classroom B | | | Classroom C | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 |
| Schedule/ Organization | 12.04 | 10.32 | 11.18 | 12.04 | 9.88 | 12.04 | 12.04 | 10.32 | 11.18 | 11.61 |
| Physical Setting | 14.01 | 6.35 | 7.17 | 8.69 | 5.52 | 6.58 | 8.46 | 5.17 | 6.11 | 8.46 |
| Instructional Materials | 3.00 | 2.50 | 3.00 | 3.00 | 2.25 | 3.00 | 3.00 | 2.50 | 3.00 | 3.00 |
| Individual Behavior | 24.42 | 8.51 | 8.38 | 9.99 | 8.62 | 5.92 | 8.88 | 8.88 | 12.58 | 11.10 |
| Instructional Strategies | 26.70 | 5.34 | 10.23 | 14.68 | 7.12 | 9.79 | 14.24 | 8.45 | 12.01 | 17.30 |
| TOTAL | 80.17 | 33.02 | 39.96 | 48.90 | 33.39 | 37.33 | 46.62 | 35.32 | 44.88 | 51.47 |

All of the Un Marco Abierto I classrooms planned activities and carried them out in accord with the schedule. It was fairly common, however, especially during the first two observation periods, for teachers to omit small group activities from their daily routine. This was a result of either teacher absence or attrition which led to a volunteer or parent unfamiliar with the demands of the model taking the place of one of the regular instructors. As small group required prior planning and preparation of materials, it was generally impossible for the substitute to carry out the activity and it would be omitted. Similarly, small group, recall, and/or circle time were customarily shortened or cancelled when other activities exceeded their allotted time periods, when clean-up time was not adequately supervised and had to be repeated, or when neighborhood trips were made to the bank, post office, fire station, library, market, and bus. Full-day excursions to the beach, zoo, pumpkin patch, snow, and puppet show necessitated the cancellation of all scheduled classroom activities for a day. The slightly lower scores across all three observation periods shown on Table 31 for classroom C may be a result of the teacher's administrative duties which at times conflicted with her teaching responsibilities.

b. Physical Setting

All classes improved their use of the activity areas over the course of the year. Lower scores during the first observation period are related to the lack of a music area which was not introduced until December. In the case of classrooms B and C, classroom management procedures also had to be developed to socialize children to two distinct classes that simultaneously followed the same schedule within one room.

At the beginning of the school year, the classroom was organized into four distinct areas: a block area, art area, house area, and quiet area. In December, the music area was added in an open space at the side of the kitchen formerly containing only the children's cubbyholes. The sand and water areas were outside on the playground. The water area, however, was available only from April to June during warm weather and so was seen in use only at the third observation period. The only area prescribed by the model that was missing from Site I was the construction area which had not been set up because of a lack of funds to buy the necessary equipment.

Although children tended to slightly favor the art area and to use all of the other core areas equally, the staff avoided the house area and favored the art area. Preference for the art area would seem to be a function of a greater availability of tables and chairs, permitting teachers to sit while working with the children. Teachers recognized that they avoided the house area; one claimed she was uncomfortable with role playing and dress-up because she had not done it as a child.

As specified by the model, the seating arrangement at the beginning of the school year had a representative ratio of English, Spanish, and bilingual children at each table. With few exceptions, the arrangement remained stable throughout the year. On two occasions in classroom C, children who were not making sufficient progress were switched in midyear from the newly appointed assistant teacher's table to the teacher's table so they could get more personalized attention. Other changes in the language make-up of particular tables came about in classroom B as children dropped out of the program and were replaced by those on the waiting list. Because of attrition and replacement of approximately 15% of the children, the language composition of individual tables became less heterogeneous; by the third observation period one table had all Spanish-preferring or bilingual children.

c. Instructional Materials

Materials were used by all three classes and were cooperatively maintained by the entire staff with teachers taking items home for repair. Throughout the year a large number and variety of materials were set out around the room. The materials were all individually laid out on shelves at the children's eye level, so that children were free to choose materials with which they wanted to work. Each item was set on top of a picture label on the shelf.

Most of the materials in the quiet area and block area were educational materials ordered through catalogs. Many of the house area materials, on the other hand, were brought from home by the staff, and teachers were constantly on the lookout for household items that could be used in the classroom. Teachers mentioned that the use of actual household items as required by the model had made necessary a complete change in materials from the toy replicas of household goods used in previous years.

In using the materials, the teachers first introduced the children to a limited number of materials in each area; this may account for the lower scores in material use during the first implementation observations. During planning and small group time children were taught the names of the areas and materials in English and in Spanish and were shown how materials are used. The practice of combining concrete objects with language was continued throughout the year, as children were often encouraged to bring materials to both planning and recall. New materials, such as an easel in November and playdough in December, were gradually added in each area. The quiet area was almost completely reequipped as children mastered simple puzzles and manipulative materials and became ready for more advanced tasks. Although much of the preparation of instructional materials for a particular lesson was done by the teachers during their free time, parent volunteers who were present on days when there were no staff absences were also generally set to this task.

Equipping the classroom with culturally symbolic materials was more problematic. The model was not specific as to what kinds of materials should be used and the types of lessons that could be planned around them. With the exception of the music area, which contained records in both Spanish and English and costumes for Mexican dances, most of the cultural materials were more symbolic than functional. The house area contained a number of decorative items such as a tortilla press, a stone for grinding corn, Mexican clay pottery, and an Aztec placque. Several posters depicting ethnic scenes were found in other parts of the room. The only other aspect of the program that had cultural content was the food served during lunch, which included tortillas, tostadas, enchiladas, and guisado.

The only materials that were consistently underutilized across all classrooms were books. This was in part a result of the staff's personal bias which favored verbal communication over symbolic representation through reading. Although children were read stories in English and Spanish on an average of once or twice a week, they were not openly encouraged to look at books on their own. This, however, seemed to be in keeping with the model's goal because, although it stresses representation, it does not specifically address itself to preliteracy skills, nor does the schedule explicitly set aside time for children to examine books.

d. Individual Behaviors

This area of implementation focuses on the interactions of the classroom population. Of primary concern is the language used by teachers in their interactions with children, the types of interactions engaged in, and the use that is made of other adults. As Table 31 depicts, it is this area where the goals of the model were least implemented at the site. Although there was a general increase in the degree of implementation across the three observation periods, the maximum reached by any one classroom was 12.58, or approximately half of the 24.42 points possible. The exceedingly low score in classroom B at the second set of observations indicates the effects of teacher turnover on that classroom; it was during this period that an aide resigned and different parents temporarily filled the position until one agreed to work until the end of the year.

Teacher language use shows a general trend across all classrooms toward increasingly higher percentages of English use throughout the year (Table 32 ). The exception was in classroom B where, upon the resignation of an almost English monolingual aide, a replacement was found who was Spanish preferring. Because she was placed at a table where the rearrangement of children had created an imbalance of Spanish-speaking children, most of the interactions of this aide were in Spanish. The general distribution of language use by teaching staff was relatively balanced across the classrooms, with the exception of classroom C where a greater percentage of language use by the teacher reflects her overall enthusiasm.

Table 32. Un Marco Abierto I classroom language production by teaching unit.

| CLASSROOM A INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 12 | 25 | 0 | 0 | 37 | 31 | 17 | 5 | 3 | 56 | 26 | 17 | 2 | 0 | 45 |
| Aide | 38 | 13 | 12 | 0 | 63 | 37 | 6 | 1 | 0 | 44 | 50 | 5 | 0 | 0 | 55 |
| TOTAL | 50 | 38 | 12 | 0 | 100 | 68 | 23 | 6 | 3 | 100 | 76 | 22 | 2 | 0 | 100 |

| CLASSROOM B INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 30 | 0 | 0 | 0 | 30 | 17 | 21 | 2 | 1 | 41 | 33 | 21 | 3 | 3 | 60 |
| Aide | 50 | 0 | 20 | 0 | 70 | 46 | 8 | 4 | 1 | 59 | 5 | 34 | 1 | 0 | 40 |
| TOTAL | 80 | 0 | 20 | 0 | 100 | 63 | 29 | 6 | 2 | 100 | 38 | 55 | 4 | 3 | 100 |

| CLASSROOM C INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 29 | 22 | 7 | 4 | 62 | [illegible] | 24 | 7 | 1 | 81 | 58 | 12 | 1 | 1 | 72 |
| Aide | 23 | 15 | 0 | 0 | 38 | 12 | 5 | 2 | 0 | 19 | 23 | 3 | 0 | 2 | 28 |
| TOTAL | 52 | 37 | 7 | 4 | 100 | 61 | 29 | 9 | 1 | 100 | 81 | 15 | 1 | 3 | 100 |

Despite the importance of concurrent translation in the model, less than 4% of the total utterances was of this type. The apparent difficulty of this practice combined with the predominance of English accounts for much of the relatively low scores in this area of implementation.

Questions were the principal mode of interaction in all three classrooms regardless of the language of instruction. These generally accounted for about 60% of the interactions between students and instructor; direct commands and informational statements accounted for close to equal parts of the remaining interactions. Praise and/or discipline reached a high of only 4% in one classroom at one time.

Most verbal interactions of all types took place during planning, work time, and recall, with the highest percentage of questions occurring, as one would expect, in the planning activity. In keeping with the model's guidelines, teachers attempted to ask open-ended questions and appear to have become more proficient in this as the year progressed. The percentage of all questions which were open-ended rose from 17.9% for the first months to 30.3% and 25.8%, respectively; during the second and third three-month periods.

It also appears that teachers in general tended to interact with students from their own table and that the language of interaction was that preferred by the child. In one-to-one interactions, English monolingual children were almost always addressed in their first language whereas Spanish speakers and bilingual children tended to be addressed in both languages. This may be a result of the teachers continuing to follow the model guideline that the child's first language be used early in the year for social adjustment purposes.

In all classrooms, parents were used primarily to assist in the preparation of food or materials. Again, the exception was the second observation period when, owing to the instability of the assistant teacher position, parents served as substitutes. Although parents fulfilled the same functions in all classes, most volunteers came for the morning sessions and tended to be English-speaking. When not serving as assistant teachers, parents generally confined interactions with children to assisting in disciplining their own children.

e. Instructional Strategies

Given the nature of the model which stresses the use of open-ended questions in a dialogue situation, the predominant instructional strategy was one-to-one interaction. All classrooms increased dramatically in this category. The low initial scores across all classrooms reflect the adjustment of both the children and teachers to such procedures. As teachers planned with one child, there was a tendency on the part of the others (especially those who spoke another language) to become bored and inattentive. The generally higher scores in classroom C reflect, in part the attempts by the

teacher to bring other children into the discussion by asking them to translate or clarify what their classmates had said. All teachers made an effort to teach concepts through the expansion of the children's language. Although small group was the activity specifically devised to build concepts, all staff members used planning, work time, and recall to question children about such concepts as colors, numbers, time, and relative size or position of the materials with which they interacted while carrying out their daily tasks.

Teachers attempted to maintain a high degree of interest in the activities by providing variations such as feel-bag or planning when outside. Similarly, when children consistently used the same or a limited number of areas (for example, boys in the block area and girls in the art area), teachers, following the model directives, encouraged children to explore new areas. In order to help themselves in their effort to provide a variety of active learning experiences for the children, teachers wrote down the children's plans and monitored them from their table during work time to make sure the plans were carried out. Social skills such as cooperation and sharing were also monitored, but when disagreement arose staff generally attempted to let the children resolve conflicts on their own.

The less than maximum overall scores in the category of instructional strategies reflect a lack of emphasis on bilingual multicultural content and on motor development. While songs in both English and Spanish were presented during circle time, this period was generally used as a transition between one activity and another. Because little attention was given to children learning the words to all songs, this decreased their cultural relevancy. As mentioned earlier, there was also a dearth of culturally diverse materials, an irregular use of children's home experiences in recall, and a general lack of organized muscle development activities during outdoor play or circle time.

The following excerpt is from an evaluation researcher's field-notes. It illustrates various aspects of the implementation process at Un Marco Abierto I reflected in the preceding discussion.

The children sit around a table in the art area eating their lunch and making their "plans" for the day's work. Joaquin speaks first, stating in Spanish that he wants to go to the art area and paint at the easel. His teacher, Miss Erma, wants to know what he will paint, "¿Dué vas a pintar?" The dark-eyed child rifles through a box of magazine cutouts saying, "Estoy buscando el foto . . . voy a usar estos . . . yellow, green, orange" and he holds up a picture of brightly colored shapes. Miss Erma asks, "What are they?" The little boy answers, "a circle, a square" as the teacher interrupts, to indicate the desired answer, "shapes," but then reverts back to Spanish, "¿Qué más vas a hacer?" Joaquin pulling a picture of a cottage from the box explains in Spanish that he wants to paint a house using markers: "Voy a pintar con los marcadores." When Miss Erma asks again to elicit more details, "What are you going to do? ¿Qué vas a hacer?" he is quick to elaborate, "Voy hacer una casa como la que yo hizo en la block area, jugar con los animales." The teacher asks in Spanish if he plans to make a house for the little animals. Joaquin nods seriously, "Sí, que se mataron, ya se murió," telling his teacher that the animal was dead.

Miss Erma opens her eyes wide feigning surprise and asks who killed them, "¿Quién lo mató?" Joaquin, still serious, continues his tale, "Se mataron con una pistola en la montaña y vinieron los firemen."

Next, Daniel, Joaquin's English-preferring friend, speaks up, "I'm going to this area, area tranquila." Miss Erma corrects him, "No, we're sitting in the art area. What's the area?" Daniel repeats, "Art area, area de . . . area de," but has trouble saying the word "arte." Miss Erma asks him, "What are you going to do?" Holding up a magazine cutout from the planning box, Daniel replies, "I wanna make a picture like this one." The teacher persists, "What are you gonna use?" Daniel gets up, walks to a shelf in the art area, and returns to the table with some bits of styrofoam. Miss Erma comments, "O.K. You're going to use styrofoam." But Daniel returns to the shelf and carries back even more bits of styrofoam and a handful of bottle caps. Miss Erma nods her head and says, "Tell me what else," to which Daniel answers "paper." The dialog finishes with one final question from the teacher, "How is the styrofoam gonna stay on the paper?" David replies simply, "glue."

Here the first part of the "plan-do-review" process took place as scheduled. As suggested by the model, Joaquin and Daniel, children of opposite language preferences, were seated at the same table. They had ready access to a variety of materials on which to work (e.g., planning box of cutouts, bits of styrofoam). The teacher used the spontaneous production of the children combined with her own open-ended questions ("What are you going to do?") to encourage both understanding of concepts in English and the creative use of the children's preferred languages, as exhibited by Joaquin in his story of the animals. When Daniel used a nonverbal strategy, the teacher tried to expand with "O.K., you're going to use styrofoam." Still, her language use with the two children differed markedly. She addressed both Spanish and English to the Spanish-preferring child. With Daniel, the English-preferring child, she used only English and did not try to expand on or reinforce his attempt to use his nonpreferred language.

4. Classroom Implementation (Site II)

Table 33 reveals greater variation in the patterns of implementation at Site II both within categories and across classrooms than is found at Site I. In terms of overall implementation, however, two of the classrooms (B and C) followed the pattern of consistent levels of implementation over the three observation periods with a slight increase in the third period that characterized the site as a whole. The third classroom (A) showed a similar consistency but with a slight decrease in overall implementation at the end of the evaluation year. The general increases would appear to be related to the training the teachers received, which helped them to improve both their individual interactional behaviors and their instructional techniques over the course of the evaluation year. The teachers in classroom A also received such training, but the teacher/student ratio was high because the teaching unit was comprised of two individuals rather than three as in the other classrooms, impeding the use of the strategies learned in training. The consistently higher total implementation scores registered by classroom C across the three observation periods indicate greater overall enthusiasm and understanding of the model by that teaching unit. Consideration of the five implementation categories and the three observation periods identifies the within-site variation in implementation scores. Again, it should be recalled that items within a category are weighted in terms of their importance to the model, but because the number of items differs, scores can only be compared on their relationship to the maximum number of points (between 3.0 and 26.70) possible within a particular category.

Table 33 . Un Marco Abierto II Implementation scores by classroom over time.

| Implementation Categories | Maximum Possible Score | Classroom A | | | Classroom B | | | Classroom C | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 |
| Schedule/ Organization | 12.04 | 9.46 | 11.18 | 12.04 | 11.18 | 11.18 | 11.18 | 12.04 | 11.61 | 12.04 |
| Physical Setting | 14.01 | 6.58 | 7.02 | 5.99 | 6.23 | 5.64 | 5.19 | 5.85 | 6.58 | 6.93 |
| Instructional Materials | 3.00 | 2.50 | 2.75 | 2.50 | 2.75 | 2.25 | 2.25 | 2.50 | 2.75 | 2.75 |
| Individual Behavior | 24.42 | 12.21 | 8.59 | 9.62 | 8.14 | 10.36 | 11.10 | 11.84 | 11.10 | 13.69 |
| Instructional Strategies | 26.70 | 8.45 | 8.90 | 9.34 | 12.46 | 10.68 | 12.90 | 11.34 | 9.79 | 11.57 |
| TOTAL | 80.17 | 39.20 | 38.44 | 39.49 | 40.76 | 40.11 | 43.42 | 43.57 | 41.83 | 46.98 |

a. Schedule and Organization

Difficulties in finding a bus driver who would be available later than 4:00 P.M. led to a restructuring of the entire school schedule early in the evaluation year. As about 75% of all of the Head Start students at Site II were bused, it was necessary to alter the original double session which ran from 9:00 A.M. to 12:00 A.M. and 12:45 P.M. to 3:30 P.M. to one which ran from 9:00 A.M. to 12:00 A.M. and 12:15 P.M. to 3:00 P.M. in order to ensure that all students had adequate transportation. As a result, teachers had no real rest periods during the day. Once this problem was resolved, however, a general schedule was established in which activities ran approximately the same length of time for both morning and afternoon sessions. The activities included the following:

| | A.M. | P.M. |
|---|---|---|
| Breakfast (lunch) | 05 | 05 minutes |
| Planning | 25 | 25 minutes |
| Work time | 50 | 45 minutes |
| Clean-up | 10 | 10 minutes |
| Recall small group | 15 | 15 minutes |
| Outside time | 15 | 15 minutes |
| Lunch (snack) | 25 | 15 minutes |
| Circle time | 15 | 15 minutes |
| Dismissal | 05 | 05 minutes |

As at Site I, activities were generally planned and carried out as scheduled. The slightly lower score recorded during the first observation period for classroom A was a result of the teachers' lack of understanding of the purpose of small group and recall. Therefore, these activities didn't occur until the second observation period when the trainer's input and specific suggestions seemed to motivate the teaching team in this classroom toward complete establishment of the daily routine. The consistent lack of complete implementation of the schedule/organization in classroom B reflects the perception of teaching staff that they were

pressed for time, leading them to exclude an activity like circle time or small group from the daily routine.

Although activities generally occurred as planned and were therefore recorded as carried out on the implementation form, the length of individual activities in all classrooms was affected by the amount of time spent in transition from one activity to another. Students spent approximately five minutes a day brushing their teeth, lost nearly 20 minutes a day lining up and filing to and from the lunchroom, and took at least five minutes to dress during inclement weather.

b. Physical Setting

The classroom ecology of the three rooms under study differed little in physical make-up. All rooms had the four core areas (block, house, quiet, and art) and each had sufficient space for four to five children to work comfortably.

The general low level of implementation in this category at all observation periods is a result of the lack of supplementary areas suggested by the model. All three rooms lacked a plant and animal area and a construction area. Only classroom B had a delineated music area, although the other classrooms had phonographs which were used occasionally during circle time. Water areas were added during the second observation period, but classroom C was forced to share its water table with another Head Start classroom.

Model guidelines calling for children to be formed into groups representing a cross-section of the classroom population were generally followed in each room. Members of the teaching teams worked directly with children who as a group were heterogeneous in terms of language preference, age, and sex. The one exception was in classroom B where one of the aides dealt exclusively with boys. Although the model requires that the individual students interacting with a given member of a teaching team should be changed periodically, this did not occur in any of the classrooms. The lack of such changes may have been a result of teachers realizing that, given the finite number of students in the classroom and the limited number of possible combinations of children, this goal was incompatible with that of maintaining heterogeneous groups.

The rooms differed in the ratio of adults to children. Class A had a two-member teaching unit for 14 children, while the other rooms each contained three instructors for 17 children. Members of teaching team A felt that a group of seven children was too much for one teacher to handle and resulted in discipline problems and overworked teachers. Teachers from the other teams agreed they had to work harder on those days when their teammates were absent and felt children suffered on those days because they couldn't provide as much individual attention. The score for the use of the available

areas in classroom A is in part a reflection of that teaching team's efforts to cope with the larger number of children for whom each was responsible by grouping up to one third of the children in a single area.

c. Instructional Materials

Implementation as regards materials was high in the three rooms over the three observation periods. Each room had approximately the same variety and number of materials. As at Site I, teachers were responsible for the upkeep of these items and were often observed repairing broken toys. Materials had particular places on the shelves which were labeled with a picture symbol to aid in clean-up and all were visible and within easy reach. The generally lower scores in classroom B during the second and third observation periods reflect a lack of dated examples of children's work being displayed in that classroom.

Materials were obtained in the same manner as at Site I; most of those in the block and quiet areas consisted of manipulative toys ordered annually from catalogs. The expendable materials in the art areas also came from school supply houses, while the house area contained real household items contributed by teachers and private donors.

There was also a general lack of culturally relevant materials at Site II. Those that existed were a few books written in Spanish and containing illustrations of Hispanic culture, some Mexican folk dance albums, and such Mexican household items as tortilla presses and molcajetes. Puerto Rican culture was not represented in any of the classrooms.

d. Individual Behavior

Classrooms at Site II showed the most varied patterns of implementation in the category focusing on the teaching teams' interpersonal interactions and language use in the classroom. Table 33 shows that classroom B had a steady increase over the three observation periods whereas classroom C, while exhibiting relatively high scores across all three observations and a gain between the first and third periods, dipped slightly at the second observation. Classroom A, on the other hand, dropped from the initial to the final observation. The relatively high score in this category received by classroom A during the first observation reflects the regular participation of a parent volunteer at that time. The low initial score in classroom B is related to the extended absence of one of the aides and her replacement by a substitute unfamiliar with the model. This individual generally remained seated at the table where planning took place and during unstructured activities did not interact with the children unless approached by them.

The distribution of language use by individual also varied by classroom. As seen in Table 34 , concerning classroom language production by teaching unit, the teacher in classroom A dominated interactions during the three implementation data collection periods, accounting for 64% of the language recorded. Because she used more English than Spanish, classroom A's teaching unit shows a predominance of that language even though the student population was evenly divided between Spanish-preferring and English-preferring children. In the other classrooms aides generally predominated in verbalizations, which would be expected as they outnumbered teachers two to one in each room. In both classes, however, there was a tendency for teachers to become more dominant as the year progressed. The teaching units' use of Spanish and English tended to reflect the distribution of language preference within the student population. Classroom C had a slight majority of English speakers and relatively more English than Spanish, whereas classroom B had more Spanish-preferring students and an increasing proportion of teachers' Spanish usage over the course of the year.

Some effort was made to carry out the concurrent translation and language mixing called for by the model, as almost 8% of the total interactions were of this type. Informational statements were the most common type of verbalization, generally accounting for more than 40% of the total. Questions made up about 30% of the interactions for all classrooms, with direct commands and verbal reinforcement either in the form of praise or discipline accounting for roughly equal amounts of the remaining verbalizations.

As with Site I, most verbal interactions of all types occurred during planning, recall, and work time. Most informational statements took place during work time. Questions occurred principally during planning activities. They tended to be open-ended as suggested by the model guidelines, although there was a general decline (from about 50% to 35%) in percentage of questions which were open-ended.

Teachers from all classrooms tended to interact with students from their group in the language preferred by the child, but they were outgoing and affectionate with all students with whom they came in contact. At least one member of each team was observed to work at eye level with the children.

Although the model calls for teachers and aides to fulfill egalitarian roles in the classroom, in practice aides rarely led circle times and in two classrooms were often observed to be wiping tables or sorting materials. Parents were seldom observed in any of the classrooms, and when present they generally disciplined or assisted only their own children.

Table 34. Un Marco Abierto II classroom language production by teaching unit.

| CLASSROOM A Instructor | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of | English | Spanish | Translation | Lang. Switch | Individual Percent of | English | Spanish | Translation | Lang. Switch | Individual Percent of |
| Teacher | 52 | 14 | 11 | 0 | 77 | 46 | 13 | 5 | 0 | 64 | 40 | 20 | 5 | 1 | 66 |
| Aide | 17 | 6 | 0 | 0 | 23 | 25 | 11 | 0 | 0 | 36 | 23 | 10 | 0 | 1 | 34 |
| TOTAL | 69 | 20 | 11 | 0 | 100 | 71 | 24 | 5 | 0 | 100 | 63 | 30 | 5 | 2 | 100 |

| CLASSROOM B Instructor | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 3 | 15 | 0 | 1 | 19 | 18 | 24 | 2 | 3 | 47 | 13 | 26 | 2 | 0 | 42 |
| Aide 1 | 23 | 29 | 0 | 2 | 54 | 24 | 16 | 5 | 0 | 45 | 16 | 27 | 2 | 2 | 47 |
| Aide 2 | 15 | 9 | 3 | 0 | 27 | 3 | 5 | 0 | 0 | 8 | 4 | 8 | 0 | 0 | 12 |
| TOTAL | 41 | 53 | 3 | 3 | 100 | 45 | 45 | 7 | 3 | 100 | 33 | 61 | 4 | 2 | 100 |

| CLASSROOM C Instructor | TIME 1 | | | | | TIME2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 20 | 15 | 4 | 1 | 40 | 16 | 23 | 4 | 1 | 44 | 27 | 28 | 2 | 0 | 57 |
| Aide 1 | 12 | 9 | 3 | 1 | 25 | 17 | 8 | 0 | 1 | 26 | 9 | 12 | 1 | 0 | 22 |
| Aide 2 | 11 | 11 | 11 | 2 | 35 | 19 | 9 | 1 | 1 | 30 | 12 | 7 | 1 | 1 | 21 |
| TOTAL | 43 | 35 | 18 | 4 | 100 | 52 | 40 | 5 | 3 | 100 | 48 | 47 | 4 | 1 | 100 |

e. Instructional Strategies

The results presented in Table 33 reveal that developing activities to promote active learning, language expansion, and bilingual bicultural awareness proved the most difficult category for the teaching staff at Un Marco Abierto II to implement. All classrooms generally scored low in this category, and although there was some increase from the first to the third observation period, no classroom obtained even half the possible points in this area. The low scores, especially those received by classroom A, reflect the difficulty teaching staff had in implementing activities requiring formal dialogue. The higher scores at the third observation period are related to the teachers using suggestions of the curriculum trainer for improving planning and recall activities.

Two teams emphasized the teaching of social skills and acceptable classroom behaviors. Children were urged to include others in their work time activities, to take turns, and to share. However, when children argued, teachers usually intervened rather than encouraging children to verbalize their disagreements as called for by the High Scope curriculum. The greater number of students per teacher in classroom A cut down on individual monitoring of student behavior and in part accounted for consistently lower scores obtained by this classroom in instructional strategies.

Although the model states that teachers and aides should use outside time to extend the children's activities, members of the teaching staff at Un Marco Abierto II simply took turns watching the children and taking breaks. Thus, no systematic motor development activities took place during this time. Having to work two sessions with only a 15-minute lunch break prompted teachers to rest during outside time.

Finally, there was a general lack of bilingual multicultural activities across all classrooms. Content related to the children's home was seldom introduced, and circle time activities such as songs, games, and stories usually occurred in English.

The following excerpt is from an evaluation researcher's fieldnotes. It illustrates various aspects of the implementation process at Un Marco Abierto II reflected in the preceding discussion.

The period is "work time." One aide, Miss Tomasa, helps Helen and Rosa with their puzzles in the quiet area. Miss Maria, another aide, sits in the corner of the room talking to Danny, an English-preferring child, about the fireman book. She asks, "Who are they? How did the fire start?" The teacher, Miss Lucia, is in the block area with four children using doctor kits. Marta and Juan scuffle briefly over one kit, but Miss Lucia intervenes, "Tú eres la nursa, Marta. Tú puedes ser la nursa." Then, playing the role of patient, the teacher lies on her back to have the children examine her with the doctors' instruments.

With the "physical examination" finished, the children move away and Miss Lucia goes to the water area, watching Walter, Roberto, and Miriam blow bubbles. In the meantime, the "doctors" approach Miss Maria. She is now surrounded by a group of four children, who lie on the floor like spokes of a wheel playing with stick-together plastic pieces. Herminia gives Miss Maria a shot. Miss Maria reacts, "¡Ay, ay, ay, ay! Se me va a quitar el dolor en la garganta, ¿no?" She gets up and says, "Thank you, doctors. ¿Cuánto le debo?"

Miss Lucia announces clean-up time and proceeds to sit in the center of the room to wait for the children to assemble for "Circle Time." Miss Maria calls out, "Come sit down on the triangle line. Vengan a sentar en la linea de triángulo." After the children sing a song in English, she continues, "I'm going to speak first in Spanish, then in English." She then explains that they are going to make a field trip to the local Puerto Rican grocery store. "Vamos a ir al Tropicana. It's a store like you go with your mother. Es una tienda como la donde va con su mamá. We're gonna go look with our eyes and not with our hands. What can we see?" The children cry out eagerly, "Cookies, pickles, naranjas, oranges." After a few more instructions, the teachers pair off the children into partners and the group files out of the building for the morning excursion.

Here three activities called for by the model -- work time, clean-up, and circle time -- took place as scheduled. The three adults were dispersed throughout the room and freely interacted with the children in different areas, which were well stocked with instructional materials such as doctors' kits. Through the field trip, the resources of the surrounding community were utilized for instructional purposes. The aide employed the language strategy of concurrent translation suggested by the model. As was the case with Un Marco Abierto I, however, on an individual basis the teaching staff employed only English with English-preferring children in contrast to the English and Spanish usage with Spanish-preferring children. The difficulty of establishing egalitarian roles among teachers and aides in the classroom was exemplified by the relative lack of involvement of Miss Tomasa. In addition, as happened frequently, Miss Lucia intervened in the minor conflict over the doctors' kits rather than encouraging the children to verbalize their disagreement.

5. The Comparison Groups

At both East Los Angeles and Milwaukee, children receiving some type of preschool education comprised most of the comparison groups. All of the comparison children in East Los Angeles attended another Head Start center located in a large house approximately three blocks from the experimental site. In Milwaukee, of the 23 children forming the comparison group, 12 took part in stay-at-home Head Start classes called the Home Base program, while the remainder had no preschool.

The East Los Angeles comparison site was similar in layout and schedule to Un Marco Abierto I. Instructional space consisted of one large classroom, about twice the size of that at the experimental site. Kitchen and dining facilities were in separate rooms. Two classes of 15 children each and two teacher-aide pairs shared the single classroom in the morning, and a single class of 15 children and two instructors met in the afternoon. Activities of joint participation were limited to transition periods (arrival, wash-up, dismissal) and the daily 20 minutes of group time. Each class spent most of the day in indoor and outdoor activities organized in one-hour periods.

The classroom was organized in a learning-center fashion. There was a group center, library corner, dress-up area, manipulative area, and block area in addition to the large outside play area. Materials were available in all areas, although they were fewer and less varied than at the High/Scope center. Art materials were not readily available to the children but were taken out for appropriate activities. Paper materials were often prepared for the children, as the teachers felt there was not enough space for children to cut and paste on their own. Outside of group time when particular content was presented, children could work in whatever center they desired. This tended to create some aimless wandering by the children throughout

free play as they finished doing one thing and tried to decide what to do next.

The curriculum of the East Los Angeles comparison center was highly focused on the development of positive self-esteem in the individual students. Teachers emphasized success experiences for all children in accordance with their developmental stage and asserted that the focus was on "process" rather than "content." The goals and objectives of the program were derived from a general assessment form provided by the Head Start office. In the area of language development, no mention was made of bilingual skills, but such behaviors as "uses words to communicate," "expresses self in words, phrases, simple and complex sentences," and "listens to stories and poems with understanding" were stressed as objectives. Similarly, in the area of concept development, objectives included that the child should know his or her name, parts of the body, basic colors, numbers 1-5, and three basic shapes (square, circle, triangle). The child should also be able to use concepts of quantity, quality, order, space, and correspondence, and demonstrate an ability to recreate stories and role play through dramatic play. Socioemotional development emphasized that the child should be relaxed and uninhibited, require minimal adult support, show a willingness to participate in new experiences, be aware of the emotional impact of words and deeds on others, and demonstrate self-confidence and self-worth.

In the classrooms there was no systematic bilingual language development. Language was viewed as part of a child's concept of self, a viewpoint which led to the use of the child's dominant language (determined through teacher observation) in overall classroom instruction. Only group time, where simultaneous translations were sometimes made, varied from this pattern. Throughout, the goal was for the child to feel comfortable about what she or he was learning.

No commercial curriculum programs were utilized at the comparison center. Teachers took what might be called a traditional nursery school approach, emphasizing self-concept development via a framework that provided latitude in determining curricular goals. Topical social studies themes were used throughout the year to provide direction and continuity. Individual objectives were integrated into monthly themes such as getting to know each other, family, holidays, transportation, and springtime.

The Home Base program received by the Milwaukee children relied upon parent involvement in the teaching of basic behaviors under the guidance of a Home Base teacher. Three Home Base teachers, working from the Un Marco Abierto II building, began teaching approximately 24 children at the start of the school year. Teachers visited weekly the children who lived on Milwaukee's North, East, and West sides.

The major objective of the program was to directly involve parents in the education of their children by teaching parents what to

teach, what to reinforce, and how to observe and record behavior. Teachers were implementing a bilingual early childhood curriculum called the Portage Guide. The guide contained a developmental sequence checklist which listed sequential behaviors from three to five years of age in five developmental areas: cognitive, language, self-help, motor, and socialization. Also included in the Portage Guide were curriculum cards to match each of the sequential behaviors.

Teachers pinpointed the behaviors already exhibited by the child to determine his or her baseline behavior. From that point, the teacher prescribed the next behavior on the checklist, modifying what may have been a long-term goal into several weekly short-term goals. Parents were expected to work with the child between teacher visits on activities in several areas of development. They recorded their child's behavior on the prescribed task and noted if the behavior increased, decreased, or remained the same.

An additional feature of the Home Base program, the "cluster," occurred on one Friday every month. Home Base children were bused to the Un Marco Abierto II center and had the opportunity to work in a group and to experience the materials and setting of a Head Start classroom. Field trips to parks or the zoo also took place during "cluster." Although the teachers were bilingual and materials and activity sheets were printed in both Spanish and English, systematic bilingual language development was not a program goal. Teachers generally presented English concepts primarily in Spanish using English only for the lexicon related to the lesson. The teacher, who was born in Mexico, felt more comfortable speaking Spanish and rarely spoke English with her charges.

Every week the Home Base teacher left materials such as stencil kits for numbers and letters, coloring books, story books, and puzzles or manipulative toys. In homes where parent participation was minimal, materials usually got lost or damaged, leading teachers to stop leaving materials in those homes.

## C. Summary and Feasibility of Transfer

The relative success in implementing the Un Marco Abierto curriculum at both sites translated into positive outcomes for participating children, parents, and teachers. Results of the standardized tests revealed that the effects of the model were most evident for Spanish-preferring children in their second language. Spanish-preferring children made significant gains over similar children attending a Head Start program without the Un Marco Abierto curriculum model on measures of English Language Acquisition, English Comprehension, and Concept Development. Both quantitative analyses and classroom observations suggest that the results on the English

measures of language acquisition and concept development are largely a result of the progress made by children who entered the program with little or no demonstrated ability in English. It appears that the bilingual bicultural curriculum model provided such children with access to situations in which they could practice English, which were not afforded to children in the comparison Head Start programs. The experimental Spanish-preferring children also made significant gains over the comparison groups on two measures of first language ability and were observed to receive extensive practice with Spanish in the classroom.

English-preferring children performed similarly to comparison children on all measures. Thus, participating in a bilingual program did not hinder these children's development in their first language. The English-preferring children of both groups failed to score on most of the measures administered in Spanish. These results are consistent with the classroom observations which showed that the practice these children received was largely limited to the acquisition of isolated lexical items. The children's natural development in their preferred language would seem to be a result of the model's emphasis on planning and review in which the children were observed to practice complete sentences, recall outstanding events, and provide details about the environment.

Socioemotional functioning of both experimental groups, although generally remaining constant over time, reflected a trend toward increased behavior indicating school readiness. This relates to the daily decision making and problem solving inherent in High/Scope's "plan-do-review" process.

Favorable attitudes toward bilingual education were found in all parent groups. Such disposition undoubtedly facilitated the positive performance of the children in Un Marco Abierto classrooms. In particular, interviews showed mothers of Site I experimental children to have significantly higher evaluation of their children's English ability than the control group. They also claimed to take an important teaching role with their children by providing significantly greater home instruction and instructional play items. Such parental perceptions and in-class involvement was promoted by the High Scope model as a means of enhancing the language and concept development of participating children.

Teacher enthusiasm both for bilingual education and for Un Marco Abierto contributed to a favorable atmosphere for the adoption of the model. This was particularly the case for East Los Angeles where questionnaires and informal interviews revealed that the classroom staff was very positive regarding High/Scope. They were especially supportive of its emphasis on children's development of personal directedness. Teachers at Site II regarded bilingual education as very important but were less secure in their understanding and support for the Un Marco Abierto curriculum, at least until after a

series of in-service workshops during the latter half of the evaluation year.

At three times during the evaluation year, the two Un Marco Abierto replication sites were assessed for degree of implementation across the categories of schedule and organization, physical setting, instructional materials, individual behaviors, and instructional strategies. Although individual classrooms had varying success in implementing particular aspects of the model, in general both sites had a positive overall experience with Un Marco Abierto. Across all classrooms there was a strict adherence to model guidelines related to scheduling and organization and the use of instructional materials throughout the year.

Given the emphasis of the model on interactions by the teacher with a particular group of students, it appears that the model could be easily implemented in a variety of classroom settings. Although simultaneous use of all areas is not necessary for model implementation, without careful monitoring by the teachers there may be a tendency on the part of certain children, as they are allowed to make their own plans, to limit their experience to a few favorite areas. This may be reinforced by teachers' own preferences for certain areas. Thus, time to plan for an equal distribution of experiences with human and material resources would seem essential to the successful implementation of this model.

A summary of site and classroom implementation results for the individual behaviors category indicates an improvement in scores across all classrooms at both sites. The model directives toward integration of the two languages would seem to work well when they are carried out in concert with specified instructional strategies. Such a practice may not, however, result in a balance between the two languages but instead lead to a systematic increase in the use of that language viewed as most necessary outside the classroom, as was the case with English in East Los Angeles. The program may also be easier to implement with bilingual teachers given the close involvement of individual teachers with a linguistically mixed group of students.

A generally low level of parental participation contributed to the less than maximum implementation as regards individual behaviors in the classroom. It would appear that involvement of parents in the Head Start program is a crucial factor in community acceptance of a new program. A comparison of the two sites suggests that it is advantageous to have a Head Start center in the neighborhood of the children that it serves if parental participation is to be fostered. At the East Los Angeles site where parents had immediate access to the center, they stayed and volunteered in the classrooms. The majority of the student population at the Milwaukee site was bused, and because of transportation difficulties few parents volunteered. Parents are thus more likely to volunteer when transportation to the center is available.

## FOOTNOTES

[1]A significant effect was also found favoring the experimental children on Spanish language production. This, however, appears to be a result of the extremely high scores on this measure recorded by the experimental children at Site I as Un Marco Abierto children at Site II scored lower than their Head Start comparison group on this measure.

[2]Site level comparisons were also made for Spanish-preferring children in general at both Un Marco Abierto sites. The findings were similar to those at the model level although not as consistent across all measures. At Site I all significant differences favored the experimental children over their Head Start comparison group. These were found on the measures of English comprehension, English concept development, and Spanish narrative quality. At Site II, again all significant differences favored the experimental children. Such differences were on the measures of English language acquisition and English concept development when the experimental children were contrasted to Head Start Home Based children and on English acquisition and Spanish comprehension when the Un Marco Abierto children were contrasted to children with no preschool exposure.

[3]There was insufficient cell size to use inferential statistics in the analysis of Spanish-preferring children by entry level at the Milwaukee site. Descriptive statistics, however, suggest a trend similar to that found at Site I and across all the models. On measures of English acquisition and English concept development the experimental children with little pretest ability in English had much higher posttest means than their Home Based Head Start counterparts ($EMLU_{\bar{x}}$ = 2.2 vs. $EMLU_{\bar{x}}$ = .61 and $PSIE_{\bar{x}}$ = 6.9 vs. $PSIE_{\bar{x}}$ = 2.7, respectively) whereas their posttest mean on English comprehension was slightly higher ($ECOMP_{\bar{x}}$ = 6.4 vs. $ECOMP_{\bar{x}}$ = 6.0).

[4]José's relatively poor performance in the test situation on the English language acquisition measure was not consistent with his extensive use of his nonpreferred language in the classroom. In classroom observations he ranked first even above his English-preferring peers, thus accounting for a lower correlation than might be expected on this measure (see Appendix W). Correlations between test results and classroom observations on all other English and Spanish language production measures were high.

[5]Aides from East Los Angeles (one of whom resigned) spoke little English. They tried to improve their vocabulary by keeping word lists and asking children to translate, but their lack of fluency caused some confusion when they worked with monolingual Spanish-speaking children.

# V

## IDRA: AMANECER

The AMANECER model was developed by Intercultural Development Research Association. In Spanish, AMANECER is a word that means "the beginning of a new day." AMANECER is also an acronym for the full title of the curriculum, which is A Multicultural Action Network for Early Childhood Education Resources.

The AMANECER preschool curriculum is intended to extend the bilingual experience to the first interface between the child and the educational institution. The curriculum is cognitively oriented and is based on three principal goals. These goals are (1) to create a learning environment that addresses the developmental needs of children, by providing appropriate learning experiences which reflect their language and cultural characteristics; (2) to develop skills that will enable teachers to personalize instruction, support the children's cultural identity, and involve the parents in the learning process; and (3) to facilitate the participation of parents and other family members in preschool activities. The model's approach to language development emphasizes that children should be taught in the language they know best while learning a second language. This is to be accomplished through at least two daily language-focused sessions in which children are divided into groups based on their language preference.

This chapter presents the results of the evaluation of the AMANECER model at two Head Start centers, Site I in Corpus Christi, Texas, and Site II, in Laredo, Texas. The results of the evaluation are divided into three sections. They include (1) child, parent, and teacher impact, (2) the curriculum implementation experiences, and (3) an integration of impact and implementation findings.

### A. Impact of the Model

The performance of the children on the battery of standardized tests and in the classroom and attitudinal changes of parents and teachers over the course of the evaluation year are the subject of this section. A brief discussion of the sample characteristics initiates each outcome subsection, followed by an extensive presentation of the results.

## 1. Child Outcomes

### a. Child Sample

Sample children tested at the two sites of Corpus Christi and Laredo numbered 139. At Site I (Corpus Christi), 30 children experienced the AMANECER curriculum model while 28 comprised the stay-at-home control group that underwent no preschool instruction. At Laredo, 81 children comprised the sample; 43 experimental children were distributed over three classrooms whereas of the 38 comparison children, the majority (29) were enrolled in other Head Start centers.

Characteristics of the Head Start population differed considerably across sites. While 24 of the 30 experimental and 23 of the 28 control children at Site I preferred English, the opposite was the case at Laredo, where 95% of both experimental and comparison children had a Spanish language preference. In spite of differences in language preference, the overwhelming majority of all children at both sites was of Hispanic background. Comparison and experimental children were proportionate in their sex distributions, with boys outnumbering girls at Site I, and girls predominating at Site II. (For all child background characteristics see Appendix N.)

### b. Test Results

(1) Spanish-preferring Children. Comparisons for Spanish-preferring children at Site I were not conducted because there was not a sufficient number of Spanish-preferring comparison children at that site. Analyses of the data for Spanish-preferring children at Site II revealed the following: At the $p \leq .05$ level of confidence, no significant differences were found between the experimental and the comparison group. Two differences were found favoring the experimental group at the .10 level of confidence (see Table 35). These differences occurred on two subscales of the Language Production measure.[1] Spanish-preferring experimental and comparison children were also examined on the basis of their entry-level abilities in English. Consistent with the results found for the other curriculum models, the effects of the AMANECER model were strongest for those children entering the program with little demonstrated ability in English. These children performed significantly better than their comparison counterparts on the measure of English Language Acquisition (see Table 36).[2] These children also tended to perform better than comparison children on measures of both English and Spanish Concept Development, although their gains did not reach the .05 level of significance. As will be shown in a subsequent subsection, these results are consistent with the findings of implementation which showed that teachers at Site II systematically carried out those activities related to language and concept development in both languages with their largely Spanish monolingual children.

Table 35. AMANECER Site II ANCOVA AND ANOVA results for Spanish-preferring children. Experimental and comparison Head Start children were compared on six constructs. 1

| CHILD MEASURES | SIGNIFICANCE[2] Treatment | Sex | Interaction | COVARIATES[3] | POSTTEST MEANS[4] (STD. ERROR OF MEAN) N = NUMBER OF SUBJECTS EXPERIMENTAL HEAD START | COMPARISON HEAD START | MALES | FEMALES |
|---|---|---|---|---|---|---|---|---|
| 1. LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE | | | | | | | | |
| Spanish Mean Length of Utterance | ns | ns | ns | AGE | 4.28 (0.11) N=40 | 4.23 (0.14) N=26 | | |
| English Mean Length of Utterance | □ | | | | 0.91 (0.18) N=40 | 0.30 (0.17) N=26 | | |
| 2. LANGUAGE COMPREHENSION-ESCUCHEN ESTE CUENTO -LISTEN TO THE STORY | | | | | | | | |
| Spanish | ns | ns | ns | PRETEST | 9.49 (0.33) N=40 | 9.02 (0.41) N=26 | | |
| English | ns | ns | ns | | 8.50 (0.37) N=40 | 8.03 (0.37) N=26 | | |
| 3. LANGUAGE PRODUCTION-DIMELO TU | | | | | | | | |
| Quantity of Spanish Words | Δ | ● | ns | | 40.36 (3.18) N=39 | 40.19 (3.38) N=26 | 37.64 (3.89) N=26 | 50.13 (2.76) N=39 |
| Object Description Scale | ns | Δ | Δ | | 4.58 (0.18) N=40 | 4.82 (0.26) N=27 | 4.31 (0.25) N=26 | 4.90 (0.18) N=41 |
| Narration Description Scale | Δ | ns | Δ | | 13.90 (0.40) N=40 | 12.77 (0.62) N=26 | 12.88 (0.62) N=25 | 13.80 (0.46) N=41 |
| 4. CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY | | | | | | | | |
| Spanish Scale | ns | ns | ns | PRETEST | 20.07 (0.50) N=40 | 18.89 (0.62) N=26 | | |
| English Scale[5] | ns | ns | ns | AGE, FAC | 10.88 (0.92) N=40 | 9.14 (1.17) N=26 | | |
| 5. PERCEPTUAL MOTOR DEVELOPMENT | | | | | | | | |
| Spanish Scale | □ | | | | 3.88 (0.08) N=40 | 3.96 (0.04) N=26 | | |
| English Scale | □ | | | | 2.32 (0.24) N=40 | 1.26 (0.30) N=27 | | |
| 6. SOCIOEMOTIONAL BEHAVIOR-TESTER CHECKLIST | | | | | | | | |
| Socioemotional Functioning | ns | ns | ns | | 19.03 (0.20) N=39 | 18.81 (0.18) N=26 | | |

[1]Statistical comparisons were either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; no entry in this column indicates that the statistical test employed was ANOVA. Test measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a □ mark in the "significance" columns.

[2]The following symbols are used to depict significance

● $p \leq .0500$
Δ $.0500 < p \leq .1000$
ns $.1000 < p$
□ significance not computed

[3]Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income), 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

[4]Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

[5]Covariates initially selected to adjust posttest scores on this dependent variable were dropped because their regression slopes were heterogeneous within cells of the model. Where possible other covariates were selected.

Table 36. AMANECER Site II comparison of Spanish-preferring children grouped by English entry level ability. Experimental and comparison Head Start children were compared on selected constructs.

| CHILD MEASURES | SIGNIFICANCE[2] Treatment | COVARIATES[3] | POSTTEST MEANS[4] (STD. ERROR OF MEAN) N = NUMBER OF SUBJECTS EXPERIMENTAL HEAD START | COMPARISON HEAD START |
|---|---|---|---|---|
| | | | SPANISH-PREFERRING GROUP$_1$ | |
| LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE | | | | |
| Spanish Mean Length of Utterance | # | | 4.23 (0.17) N = 19 | 4.11 (0.16) N = 22 |
| English Mean Length of Utterance[5] | # | PRETEST | 0.63 (0.26) N = 19 | 0.08 (0.07) N = 23 |
| CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY | | | | |
| Spanish Scale | Δ | PRETEST | 19.92 (0.69) N = 22 | 18.22 (0.71) N = 21 |
| English Scale | Δ | PRETEST | 7.77 (1.04) N = 22 | 5.00 (1.04) N = 22 |
| | | | SPANISH-PREFERRING GROUP$_2$ | |
| LANGUAGE COMPREHENSION-ESCUCHEN ESTE CUENTO -LISTEN TO THE STORY | | | | |
| Spanish | ns | PRETEST | 9.49 (0.33) N = 40 | 9.10 (0.41) N = 26 |
| English | ns | | 8.50 (0.37) N = 40 | 8.04 (0.37) N = 26 |

[1]Statistical comparisons were either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; no entry in this column indicates that the statistical test employed was ANOVA. Test measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a ⇔ mark in the "significance" columns. Children were grouped by English entry level ability as follows: Spanish-preferring Group, includes all children who showed little or no ability on the English pretest measures (EMLU = 0, PSIE ≤ 3, ECOMP ≤ 3). Spanish-preferring Group, includes all children who demonstrated some ability in English on the pretest measures (EMLU > 0, PSIE > 3, ECOMP > 3).

[2]The following symbols are used to depict significance

\# $p \leq .0500$
Δ $.0500 < p \leq .1000$
ns $.1000 <$ [illegible]
⇔ significance not computed

[3]Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income), 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

[4]Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

[5]Covariates initially selected to adjust posttest scores on this dependent variable were dropped because their regression slopes were heterogeneous within cells of the model. Where possible other covariates were selected.

Table 37, AMANECER Site I ANCOVA and ANOVA results for English-preferring children. Experimental Head Start and stay-at-home comparison children were compared on six constructs.[1]

| CHILD MEASURES | SIGNIFICANCE[2] Treatment | Sex | Interaction | COVARIATES[3] | POSTTEST MEANS[4] (STD. ERROR OF MEAN) N = NUMBER OF SUBJECTS EXPERIMENTAL HEAD START | STAY AT HOME COMPARISON | MALES | FEMALES |
|---|---|---|---|---|---|---|---|---|
| 1. LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE | | | | | | | | |
| Spanish Mean Length of Utterance | □ | | | | 0.64 (0.33) N=20 | 1.12 (0.33) N=21 | | |
| English Mean Length of Utterance | ns | ns | ns | PRETEST, EDASP | 3.95 (0.18) N=19 | 3.74 (0.16) N=23 | | |
| 2. LANGUAGE COMPREHENSION-ESCUCHEN ESTE CUENTO -LISTEN TO THE STORY | | | | | | | | |
| Spanish | ns | ns | ns | FAC | 5.36 (0.67) N=19 | 6.44 (0.61) N=23 | | |
| English | ns | ns | ns | | 7.20 (0.65) N=20 | 6.78 (0.59) N=23 | | |
| 3. LANGUAGE PRODUCTION-YOU SAY IT | | | | | | | | |
| Quantity of English Words | ns | ● | ns | PRETEST | 39.67 (5.07) N=19 | 47.76 (4.78) N=21 | 32.78 (4.67) N=22 | 54.65 (5.19) N=18 |
| Object Description Scale | ns | ns | ns | PRETEST | 3.52 (0.26) N=20 | 2.93 (0.25) N=22 | | |
| Narration Description Scale | ns | ● | ns | PRETEST | 11.14 (0.61) N=20 | 11.77 (0.59) N=21 | 10.44 (0.59) N=22 | 12.47 (0.6[illegible] N=19 |
| 4. CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY | | | | | | | | |
| Spanish Scale | ns | ns | ns | FAC | 7.33 (0.87) N=19 | 7.61 (0.78) N=23 | | |
| English Scale | ns | ns | ns | PRETEST, FAC | 16.12 (1.02) N=19 | 15.25 (0.92) N=23 | | |
| 5. PERCEPTUAL MOTOR DEVELOPMENT | | | | | | | | |
| Spanish Scale | ns | ▲ | ns | PRETEST, FAC | 3.20 (0.26) N=17 | 2.89 (0.22) N=23 | 2.71 (0.21) N=23 | 3.38 (0.25) N=17 |
| English Scale | □ | | | | 3.70 (0.16) N=20 | 3.48 (0.16) N=23 | | |
| 6. SOCIOEMOTIONAL BEHAVIOR-TESTER CHECKLIST | | | | | | | | |
| Sociomotional Functioning | ns | ● | ns | | 19.68 (0.68) N=19 | 18.78 (0.63) N=23 | 18.04 ([illegible]) N=23 | 20.37 (0.44) N=18 |

[1]Statistical comparisons were either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; no entry in this column indicates that the statistical test employed was ANOVA. Test measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a □ mark in the "significance" columns.

[2]The following symbols are used to depict significance

● $p \leq .0500$
▲ $.0500 < p \leq .1000$
ns $.1000 < p$
□ significance not computed

[3]Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income), 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

[4]Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

(2) English-preferring Children. The comparison of English-preferring children at Site I showed no significant differences between the experimental and comparison groups (Table 37). Effects for sex were found on a number of measures as females tended to outperform males on a number of the lesser measures. Consistent with the classroom observations, the English-preferring children showed little progress on the tests administered in Spanish.

c. Classroom Observations

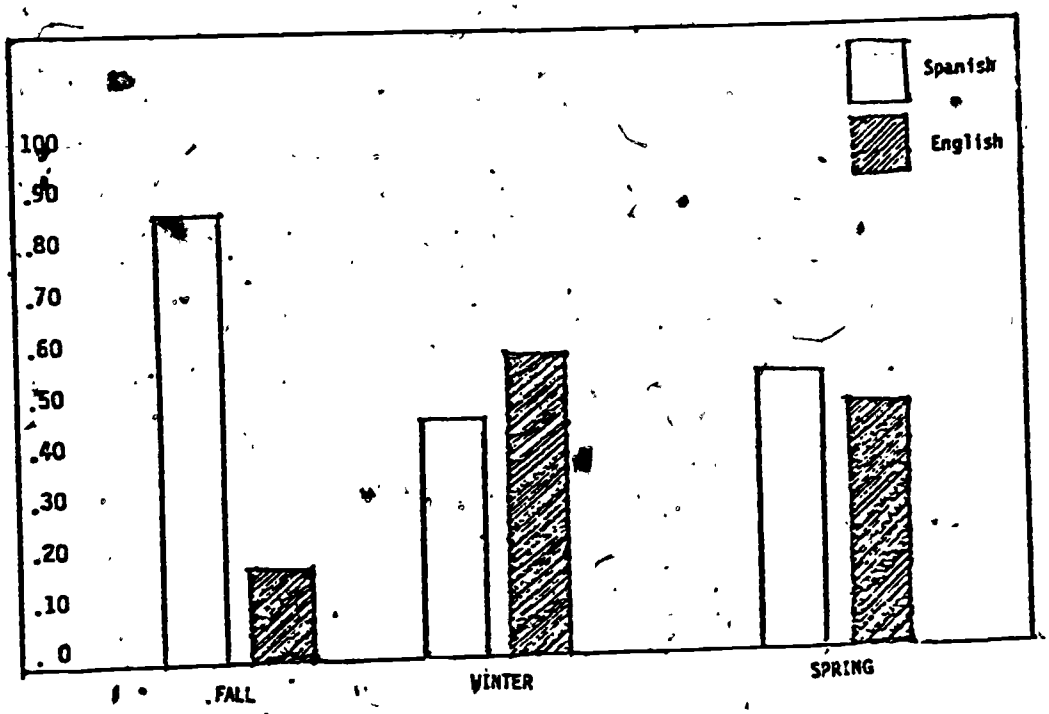
Classroom observations were made at AMANECER Site I, as this was the site designated by the curriculum developers as most representative of their model. Fifteen subsample children at this site were selected for focused classroom observations during the preschool year. Of these, the 11 for which complete data were available were used in the study. Six had a preference for English and five were Spanish preferring. Frequency counts and samples of their classroom interactions offer a qualitative base against which to view the outcomes of the standardized tests.

(1) Language Usage. Figure 4 depicts overall language use by subsample children at this site. The figure illustrates that Spanish-preferring children used both languages in the classroom. The experience of English-preferring children, however, was limited primarily to English, as at least 93% of the total verbal interactions during any observation period were in that language. These results are consistent with those to be presented in the section on implementation which show that all of the AMANECER classrooms favored English language use. An investigation within the language preference groups, however, suggests that the experience for individual children, especially those who entered the program as Spanish-preferring, was varied.

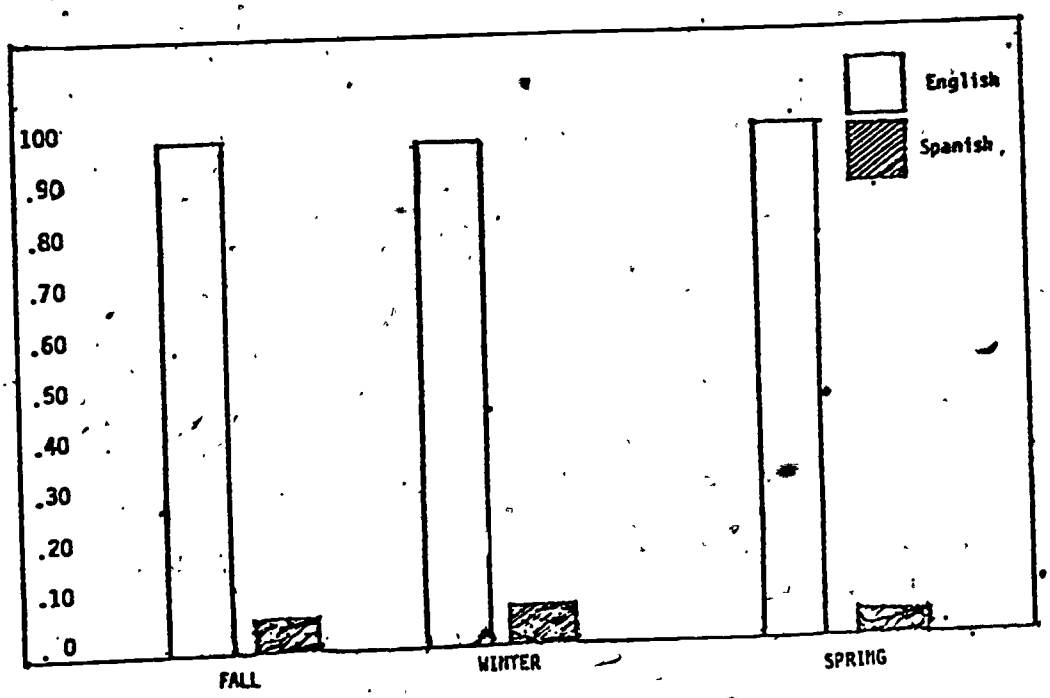
Table 38 (Children's Language Usage) shows that Spanish-preferring children at AMANECER I exhibited two distinct tendencies over the year. Three Spanish-preferring children, Claudia, James, and Doris, showed a tendency to speak some English even at the first observation period. These children increased their English usage over the year to the extent that they became either English preferring or relatively balanced in their classroom language use. Two other Spanish-preferring children -- Ramona and Julio -- had a different pattern of language use. They exhibited little practice with English during the initial observations but utilized some at the midyear, then reverted back to primarily Spanish use at the final observation period.

The three children who utilized both languages early in the year were those who exhibited some ability with their second language upon entering the Head Start. Their abilities were reflected not only in their own verbal production but also in the individual input provided them by their teachers and classmates (Table 39). For Claudia, the child who showed the greatest change in classroom language, even

Figure 4. Classroom observations of child language use were obtained for a subsample of Spanish-preferring and English-preferring children during Fall, Winter, and Spring. The figure below shows the proportion of Spanish and English in AMANECER subsample children's language use over time.




Spanish-preferring children




English-preferring children

Table 38. Relative frequency of observed usage of Spanish and English by individual subsample children over three points in time: Amanecer[1]

| | SPANISH | | | ENGLISH | | | LANGUAGE MIXING[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | I | II | III | I | II | III | I | II | III |
| **Spanish-Preferring** | % | % | % | % | % | % | % | % | % |
| Julio | 100 | 76 | 81 | 0 | 12 | 4 | 0 | 12 | 5 |
| Ramona | 100 | 63 | NO[3] | 0 | 37 | NO | 0 | 0 | NO |
| Doris | 55 | 36 | 37 | 45 | 62 | 61 | 0 | 2 | 2 |
| James | 91 | 43 | 46 | 3 | 40 | 39 | 6 | 17 | 15 |
| Claudia | 84 | 30 | 12 | 4 | 67 | 85 | 12 | 3 | 3 |
| | % | % | % | % | % | % | % | % | % |
| **English-Preferring** | | | | | | | | | |
| Clotilde | 38 | 0 | 0 | 62 | 100 | 100 | 0 | 0 | 0 |
| David | 8 | 7 | 0 | 88 | 93 | 98 | 4 | 0 | 2 |
| Judy | 0 | 2 | 0 | 100 | 98 | 100 | 0 | 0 | 0 |
| Martin | 0 | 0 | 3 | 100 | 100 | 97 | 0 | 0 | 0 |
| Gregorio | 0 | 0 | 6 | 100 | 100 | 94 | 0 | 0 | 0 |
| Ruth | 0 | 24 | 7 | 100 | 75 | 93 | 0 | 1 | 0 |

[1]Percentage totals may not equal 100 % due to rounding.

[2]Indicates switching of languages within a single sentence or phrase (e.g., Me das un yellow).

[3]NO = not observed

Table 39. Proportion of observed Spanish and English input directed to individual subsample children by teachers and peers over three points in time: AMANECER.[1]

| | | SPANISH-PREFERRING | | | | | | | | | | ENGLISH-PREFERRING | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CHILD'S NAME | JULIO | | RAMONA | | DORIS | | JAMES | | CLAUDIA | | CLOTILDE | | DAVID | | JUDY | | MARTIN | | GREGORIO | | RUTH | |
| | | % SP. | % ENG. | % SP. | % ENG | % SP. | % ENG. | % SP. | % ENG: | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. |
| TIME ONE | | | | | | | | | | | | | | | | | | | | | | | |
| | TEACHER | 80 | 20 | 67 | 33 | 100 | 0 | 50 | 50 | 33 | 67 | 50 | 50 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 0 | 25 | 75 |
| | PEER | 0 | 0 | 0 | 0 | 75 | 25 | 100 | 0 | 33 | 67 | 0 | 100 | 33 | 67 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 |
| | OVERALL | 80 | 20 | 67 | 33 | 83 | 17 | 75 | 25 | 33 | 67 | 33 | 67 | 33 | 67 | 0 | 100 | 0 | 100 | 0 | 100 | 7 | 93 |
| TIME TWO | | | | | | | | | | | | | | | | | | | | | | | |
| | TEACHER | 75 | 25 | 75 | 25 | 65 | 35 | 50 | 50 | 30 | 70 | 17 | 83 | 0 | 100 | 36 | 64 | 0 | 100 | 0 | 100 | 32 | 68 |
| | PEER | 100 | 0 | 50 | 50 | 0 | 100 | 33 | 67 | 17 | 83 | 20 | 80 | 37 | 63 | 29 | 71 | 12 | 88 | 37 | 63 | 33 | 67 |
| | OVERALL | 83 | 17 | 71 | 29 | 46 | 54 | 40 | 60 | 25 | 75 | 18 | 82 | 30 | 70 | 33 | 67 | 4 | 96 | 25 | 75 | 32 | 68 |
| TIME THREE | | | | | | | | | | | | | | | | | | | | | | | |
| | TEACHER | 73 | 27 | 40 | 60 | 63 | 37 | 25 | 75 | 0 | 100 | 0 | 100 | 37 | 63 | 29 | 71 | 25 | 75 | 33 | 67 | 37 | 63 |
| | PEER | 60 | 40 | 0 | 100 | 0 | 100 | 0 | 100 | 33 | 67 | 0 | 100 | 37 | 63 | 0 | 100 | 0 | 100 | 25 | 85 | 20 | 80 |
| | OVERALL | 70 | 30 | 33 | 67 | 44 | 56 | 20 | 80 | 17 | 83 | 0 | 100 | 37 | 63 | 20 | 80 | 11 | 89 | 20 | 80 | 31 | 69 |

[1] Percentage totals may not equal 100% due to rounding.

early in the year approximately two thirds of the verbal input directed to her by both teachers and peers was in English. While this proportion remained relatively constant for peers over the year, by the end of the year teachers were conducting all of their direct verbal exchanges with the child in English. Although less dramatic, the direct input to James followed the same trends. Doris, on the other hand, was addressed principally in Spanish by teachers throughout the year. It was observed that input provided by peers, however, was almost entirely in Spanish during the first observation period and completely in English at subsequent ones.

The two Spanish-preferring children who did not exhibit a consistent tendency to use their second language demonstrated little verbal ability with English at the start of the year, although both had some understanding of that language. The ratios of input received by Ramona from her teachers and peers followed a somewhat similar pattern to that received by Claudia, James, and Doris although her language usage patterns were different. This appeared to be largely a result of her personality. Ramona, a four-year-old female, was a shy child who tended to avoid verbal interaction in the classroom. She was rarely forced to talk by her teachers or peers; on occasions when she was addressed, she managed to rely on nonverbal cues to communicate.

Julio, a tall Spanish-preferring male, displayed distinct characteristics from Ramona's. Julio was an assertive child who had difficulty in adjusting to the preschool environment. In efforts to socialize him into the classroom routine, teachers tended to interact with him in his preferred language, thereby accounting for the consistently high percentage of input in Spanish he received throughout the year (over 70% at each observation period). Input provided by his peers was in Spanish in most cases. As he generally initiated conversations with his peers in his first language, he created situations where he did not have to use English.

Practice in English grammatical forms was notable for the Spanish-preferring group. They were all able to use more grammatical structures in their second language over the year, especially at the second observation period (Appendix O). The most general patterns were in the areas of use of the present tense and of complete sentences where four of five children and three of five, respectively, increased their practice. Functionally, those three children who exhibited the most consistent use of English in the classroom also diversified the purposes for which they used English. The areas in which these children received practice were giving verbal instructions and providing descriptions of themselves or others.

Despite their increased use of English, Spanish-preferring children also demonstrated increases in linguistic and functional competence in their first language. In their native language, four of the five Spanish-preferring children received practice in a greater number

of grammatical forms over the year. The one exception was that child who exhibited the most verbal ability in English even early in the year. This child tended to consistently use the same grammatical structures in her preferred language. The only consistent trend within a category was that related to the use of plural nouns in which three of five children received more practice. It is interesting to note that Julio, the child who interacted almost exclusively in Spanish, showed the most general increases in the practice received with grammatical structures. The lack of more consistent trends[3] can be explained by the inconsistency with which Spanish language lessons were carried out at the site, which will be discussed further in the implementation subsection.

Practice in functional competence in Spanish was limited largely to the category of giving verbal instructions where four of the five children were observed to have some experience in the classroom.

Table 38 also presents the overall language use by English-preferring children at AMANECER I. These subsample children rarely utilized their second language; with one exception at the first observation period at least 75% of each of the children's language production for the year was in English. Standardized test results show that four of the English-preferring subsample children -- Ruth, Gregorio, Clotilde, and David -- had a slight understanding of their second language on entering preschool. These are the children who exhibited the greatest use of Spanish for the year. The other two children -- Judy and Martin -- demonstrated virtually no capacity with their second language in the pretest.

General interaction patterns, shown in Table 39, reveal that teachers and peers directed their verbal input to these children in English in the majority of cases. There was a trend, however, for teachers to address English-preferring children in Spanish during midyear. This corresponds to the greater effort exercised by teachers to implement the model during this second observation period. Ruth and Judy, both members of classroom A, were the recipients of a sustained, albeit weak, effort by teachers to address them in their second language.. As will be shown in the implementation subsection, this was also the classroom which received the highest scores related to the language use strategies suggested by the model.

English-preferring subsample children experienced little practice with Spanish. Most of the use of the second language was accounted for by two children, Ruth and David, who had shown some ability with their second language at the pretest. Use of Spanish by any children for the areas of functional competencies listed as cross-model objectives was virtually nonexistent (Appendix P).

English practice, though, was extensive and varied. By the end of the year, five of six English-preferring children had increased

their practice in six of the eight categories related to linguistic competence in English and three of them had practice in all eight. Within the categories the most general trends were use of the past tense and use of complete sentences.

The patterns of children's observed behaviors related to the cross-model objectives in the area of language comprehension generally paralleled those of language production. The experiences engaged in by the children were principally those of recalling information about the classroom itself or the home environment (see Appendix Q ). English-speaking children demonstrated recall and comprehension abilities largely in their first language, whereas Spanish-preferring children showed such abilities in both languages. Again, in the latter instance it was the three Spanish-preferring children with the greatest initial ability in English who accounted for most of this practice.[4]

No differences were noted in the amount of child language produced in different contexts. This was to be expected, as the model emphasized language interaction in a number of activities including large groups, language groups, independent play, and meals. The following examples of specific interactions of the children illustrate, through the learning experiences of individual children, the trends discussed above.

• Claudia, a chubby child with dark brown eyes, whose favorite area was the drama center, was a Spanish-preferring child who demonstrated some ability in English upon entering school. By the end of the year she was able to switch languages upon demand. She willingly participated in large and small group activities. In interactions with her peers she was assertive and often took the lead in organizing her classmates for games during independent play.

Typical of the Spanish-preferring children at Site I, Claudia's performance in her second language at the beginning of the year was largely limited to language lessons. The following exchange recorded during an English second-language group circle time activity illustrates these interactions:

(The day's lesson focus is milk products. The teacher has a sampling of cream, cheddar, and cottage cheeses.)

Teacher: (Asks children to identify the piece of cheddar cheese she is holding.)

Claudia: Cheese.

Teacher: Right, what kind of cheese?

Claudia: Yellow.

Teacher: I didn't say what color. I said what kind of cheese.

(Interrupts lesson to discipline two male students who are fighting and

then distributes pieces of cheese on toothpicks.)

At this time, Claudia's English tended to be in incomplete utterances in response to the questions of the teacher. She was able to understand very simple questions in her second language such as "What is this?" but had trouble when the teacher tried to elicit less common vocabulary requiring the child to classify the object.

The teacher corrected the child, pointing out the error and repeating the trouble source. As called for by the model, the second language lesson occurred at a concrete level with samples of the physical object -- cheese -- being distributed as a reinforcement appealing to the children's sense of taste.

The child's preference for Spanish, however, was evident from her speech when playing in the block area with tinkertoys on the same day:

Claudia: No, eso es mía. Eso es mía.
Julio : 'Garra otro.
(As he takes the truck.)
Teacher: (Tells Jaime to return some pegs to his playmate.)
Claudia: Teacher, yo quiero más d'éstos.
(Referring to the pegs.)
Teacher: Ahí tienen muchos.
(And leaves.)
Julio : Voy hacer una casita.
Claudia: Hey, mira, ven pa'cá. Te doy éstos.
(As she hands him some round pegs and takes some long ones.)

Although at this stage of her first language development Claudia still had problems in gender agreement, she spoke in complete sentences, made repeated use of the present tense, and was able to effectively give verbal instructions in her preferred language. She also periodically mixed languages (using "teacher"), as was common for all Spanish-preferring children in the classroom.

Late in the year Claudia was observed generally using the language appropriate to her addressee. While with the teachers she tended to use English, she addressed her peers in their preferred language, as is evident from this language sample from independent play:

Julio : ¿Por qué no más las mujer(es)?
Claudia: No más yo y Cathy.

Teacher: (Calls to Julio to move to the other side of the rug for circle time and threatens the punishment of no outside play.)

Claudia: (To Julio.) Go over der. Go over der. You're not gonna get to go outside. He's a baby. He no wanna go over der.

She spontaneously responded to her classmate in his preferred language. When the adult entered into the context, however, she switched with ease to her second language. Her English exhibited many of the characteristics of Spanish speakers learning English as a second language -- difficulty in the pronunciation of the phoneme /th/ ("over der") and absence of the do-AUX in English negation ("no wanna go"). Thus, over the course of the school year, she appeared to have acquired communicative competence in her second language, while maintaining natural development in her preferred language.

The following excerpt from the middle of the preschool year serves to contrast Ramona, the Spanish-preferring child who avoided verbal interactions, with Claudia. Ramona was a petite button-nosed female with a soft voice who scored well below her Spanish-preferring peers on pretest measures of her preferred language. When ordered to speak, she would use only one or two words in Spanish. In dramatic play, Ramona often assumed the role of a baby and spent the entire period with a bottle hanging from her mouth. She seldom participated in the games or singing of large group activities, but rather sat quietly observing the other children interact.

Ramona is at the housekeeping/drama center. The teacher walks into the center and engages in play with her. Ramona sticks two wooden bread slices into a toy toaster.

Teacher: ¿Qué es lo que me hiciste, Ramona?
Ramona : Papa.
Teacher: ¿Qué? ¿Papas?
Ramona : (Nods. She gets a bowl and ladle from a nearby cabinet, stirs, then "serves" the teacher a plate. She gets the molcajete and stone and begins grinding.)
Teacher: ¿Ya me hiciste mi lonche?
Ramona : (Nods. She grabs a mop and mops on the rug area.)
Teacher: Ramona, 'ta muy sabrosa tu comida. Yo ya me voy. O.K.?
Ramona : (Nods.) (Elena comes over and hands the teacher a painting. The teacher leaves the area with Elena.)

Teacher: (To Elena.)
Oh this is so pretty.
Ramona : (Continues mopping.)

This example of Ramona's behavior during independent play illustrates the way in which she was able to interact throughout the year with little need to verbalize. Here one notes the teacher addressing her in her preferred language and Ramona's obvious comprehension of the questions. Most of her responses were, however, nonverbal. When forced to answer a WH question, she responded with a single word. Her lack of verbal practice in the classroom was reflected in her posttest scores which dropped on all measures in her first language and were virtually nonexistent in English.

The similarity of the experience of the English-preferring children can be typified by David, an English-preferring child who had some demonstrated understanding of Spanish.

• David, a slim well-dressed child who was the second youngest in a seven-sibling family, was well liked by students in his Site I classroom. His popularity often caused competition among his male peers, who vied for his companionship during play periods. Like many of the Hispanic children at Site I, David was an English-preferring bilingual. He eagerly participated in most activities, showing special enthusiasm during language lessons when he would frequently volunteer answers.

At the start of the school year, David tended to speak his preferred language to both teachers and peers unless he was addressed by a classmate in Spanish, when he would respond in his second language. The following exchange, which took place early in the year, provides the English dominant language circle counterpart of the lesson on cheeses reviewed in the example of Claudia:

David : (Tastes the cottage cheese, wrinkles his nose, and puckers his lips registering his dislike.)
Teacher: (Asks the names of the different cheeses.)
David : (Points to the cheddar cheese:)
I liked this one. I'm gonna tell my mŏtha'
I liked the chedda' cheese.

Although he had not yet mastered the difficult phoneme /r/ in final position in his preferred language, David successfully verbalized in complete sentences to describe his own feelings. He readily incorporated the newly learned lexical item -- a type of cheese -- into his linguistic repertoire.

Even at the beginning of the year, however, he exhibited a receptive ability in his second language and limited productive ability

as witnessed by the following lunch-time conversation with his peers:

David : (Sits at a U-shaped table, waiting for the bowl to be passed. Pedro and George, his classmates, compete for a seat next to him.)
Pedro : (To David:)
Púchalo pa' 'lla.
David : Pedro
Pedro : Hay silla.
(Points to the chair next to George.)
David : Sí, hay.
George: Stop it, Pedro.
(After Pedro kicks George's chair.)
David : (To George.)
You like to box?
George: Yeah.
David : (Playfully punches George.)
George: No, David.
David : Poke your eyes.
(Pokes at George's eyes.)
Say "poke your eyes," slow.
George: Poke your eyes.
(Slowly.)

Although David was much more verbal in his preferred language and, in this example, demonstrated a larger functional and syntactic repertoire, including use of the interrogative and an ability to give verbal instructions, he had no problems in understanding the speech of his Spanish-preferring peers and in using a short utterance to describe his classroom environment.

Late in the year, David continued to demonstrate some interest in learning and communicating in his second language, although his ability continued to be at a fairly elementary level. This language sample is taken from a second language circle time for English language dominant children. The lesson is on things found in the kitchen:

Teacher: (Asks him to point to a designated area on a picture of a refrigerator.)
. . . abajo en el regrigerador.
David : (Points to low point on refrigerator.)
Teacher: (Reviewing lesson:)
¿A ver, David, qué es otro nombre para hielera (nevera)?
David : Friger-, friger-.
Teacher: Refrigerador.
David : Ref-, refrigerador.
Teacher: Good, David.

The teacher provided the child with a variety of lexical items for the object "refrigerator." Although exhibiting difficulty with the five-syllable word "refrigerator," David patiently attended to the modeling of the teacher to produce a perfect "refrigerador" and was rewarded with a compliment in his preferred language.

His continued preference for and development in English, however, was evident during this lunch-time conversation recorded at the end of the year:

| | | |
|---|---|---|
| David | : | (Sitting at the head of the table, he takes a biscuit from the plate, which he then passes on to his classmate, George.) |
| | | Eat the biscuit. |
| | | (Addresses next statement to the teacher, seated at the opposite end of the table:) |
| | | Teacho, they should put jelly on it. |
| | | Teacho, I saw a movie about the lion. |
| George | : | (Tries to interrupt the conversation.) |
| David | : | Wait! And the lion . . . and the witch died. |
| Angelica | : | I laughed cuz the witch died. |
| George | : | It's not funny. |
| David | : | (Agrees.) |
| Teacher | : | David, are you going to the carnival? |
| David | : | (Nods.) |
| | | Teacher, where's the carnival gonna be? |
| Teacher | : | Down by the water next to the Coliseum. |
| | | And there's gonna be fireworks -- cohetes. |
| David | : | Oh, we get those in Mexico. |
| Julio | : | Nosotros 'amo' a México a compra' mucha comida. |

Here David exhibited his substantial grammatical repertoire, successfully employing the interrogative form, regular and irregular past tense ("saw"), and the model "should" to give advice. His variable use of the /r/ (as appeared in "teacher") exhibited progress toward complete phonological development. Within the context of the classroom, in which English became the primary means of communication, David demonstrated greater development in his preferred language than in his second language, which remained limited in lexical and functional variety to the demands of language-focused activities and of his monolingual Spanish-speaking peers.

(2) Concept Development. Experience with concepts is one of the fundamental goals of the AMANECER model. That experience is to be provided in a child's first and second language. However, it appears from the results of psychometric tests and observations that practice in the use of concepts followed a pattern similar to that for language production in that English was stressed. As evident from Table 40, early in the year all subsample children's practice with

Table 40. Relative frequency of observed practice with concepts by language for individual subsample children over three points in time: AMANECER [1]

| | SPANISH | | | ENGLISH | | | NON-LANGUAGE SPECIFIC | | |
|---|---|---|---|---|---|---|---|---|---|
| | I | II | III | I | II | III | I | II | III |
| **Spanish-Preferring** | % | % | % | % | % | % | % | % | % |
| Julio | 100 | 0 | 73 | 0 | 20 | 13 | 0 | 80 | 13 |
| Ramona | 0 | 37 | 0 | 0 | 0 | 0 | 100 | 63 | 100 |
| Doris | 0 | 17 | 29 | 0 | 50 | 29 | 100 | 34 | 43 |
| James | 50 | 7 | 14 | 25 | 35 | 14 | 25 | 57 | 71 |
| Claudia | 40 | 0 | 0 | 20 | 67 | 75 | 40 | 33 | 25 |
| **English-Preferring** | % | % | % | % | % | % | % | % | % |
| Clotilde | 0 | 0 | 0 | 0 | 83 | 55 | 100 | 17 | 45 |
| David | NO [2] | 0 | 0 | NO | 25 | 50 | NO | 75 | 50 |
| Judy | 8 | 0 | 0 | 23 | 54 | 90 | 69 | 45 | 10 |
| Martin | 0 | 0 | 0 | 100 | 100 | 50 | 0 | 0 | 50 |
| Gregorio | 0 | 0 | 0 | 100 | 40 | 67 | 0 | 60 | 33 |
| Ruth | 0 | 12 | 33 | 50 | 77 | 67 | 50 | 12 | 0 |

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed.

concepts identified as cross-model objectives was largely limited to their preferred language and to areas that were nonlanguage specific. Spanish-preferring children in general tended to have more practice in their second language than the English-preferring group. The English-preferring subsample children experienced practice with concepts largely in English throughout the year.

Four of the five Spanish-preferring children increased their practice with concepts in English from the first to subsequent observation periods. There was also an increase in the practice of nonlanguage-specific concepts for most children. Ramona, sustaining her nonverbal strategy, engaged almost entirely in nonlanguage-specific practice throughout the year. Only one English-preferring child was observed to increase her practice with concepts in Spanish. This was the child who showed the most ability with that language at the pretest.

Eight of the total of 11 subsample children displayed diversification in their practice with concepts, with the Spanish-preferring children receiving broader practice primarily in their second language and English-preferring children primarily in their first. The variety of experiences with concepts differed in the two language preference groups. Whereas Spanish-preferring children's experience was concentrated in the areas of matching/classification of objects and symbolic representation at the first observation and symbolic representation and visual discrimination at subsequent observations, English-preferring children had more diverse experience with the categories within the construct of concept development. Visual discrimination in English was the category in which children were observed to most consistently increase their practice, with four out of five Spanish-preferring children and all six English-preferring children displaying behaviors related to this area of concept development. Practice centered on the identification of objects for Spanish-preferring children and identification of attributes of an object for English-preferring children. In addition, both groups of children received practice in symbolic representation, usually in role play situations. As will be discussed in the implementation subsection, the lack of structured adult-child interactions, especially in Spanish, allowed children of that language preference to function on their own during free play. This led to a concentration of these children in the drama and manipulative areas late in the year. That these areas lended themselves to symbolic representation and visual discrimination is evident from an examination of Appendixes R and S.

As with language production, concept development occurred in a variety of contexts. Lunch was especially amenable to concept development as it presented concrete objects from which the abstract extrapolations called for by the model could be made.

Julio illustrates the trends for the Spanish-preferring children while Judy serves to characterize the experience of the English-preferring subsample children.

Julio, a husky child who came from a large family, was a Spanish-preferring child. He spent most of his time in the block area, constructing street or city scenes. His progress in concept development was typical of many Spanish speakers at AMANECER, who exhibited more evidence of understanding concepts in their second language late in the year.

Early in the year, Julio's exploration of concepts was largely limited to his preferred language. The following interaction was observed during dominant language circle time:

Teacher: Pedro, ¿tu mamá usa los limones en tu casa?
Pedro : Si. Pa' comer con sal . . . .
Teacher: (Cuts the lemon into slices, gives each child a piece to taste, and asks him or her to describe the taste. She then asks for the lemon's color.)
Julio : 'Marillo.
Teacher: Amarillo! ¿Y a qué sabe?
Julio : Agrio.

As the activity was in the child's preferred language, the teacher explored two concepts -- color and taste -- appealing to the sense of taste through use of the concrete physical object. She repeated Julio's correct response for emphasis and to ensure modeling of the correct form and attempted to encourage conversation among the children by inquiring about customs at home.

The teachers used lunch time also as a means of relating concepts learned in lessons to the cultural reality of individual children, as exhibited by this brief interchange recorded at the beginning of the year.

Teacher: (Asks the boys to sit at the table.) Does anybody know what we're having for breakfast?
Julio : Atole.
Teacher: ¿Cómo sabes?
Julio : Porque trajeron la cuchara. (Referring to the ladle.)

When the teacher received a response in Spanish, she immediately switched to Julio's dominant language when asking a question requiring a logical explanation. Julio responded with the correct answer, arrived at through a somewhat unique pattern of reasoning but nonetheless correct.

By the end of the year, Julio had progressed in his understanding of concepts in his second language, as evident from this exchange observed during a large group review lesson after nap time. Earlier in the day during dominant language circle time and second language development circle, the teacher had used pictures of objects to have the children employ their sense of touch:

Teacher: Julio, can you tell me what you learned in circle time?
Julio : Cold . . . eh . . .
David : (Interrupting.) I know, I know. Cold and hot.
Julio : (Pushing David.) ¡Me dijo a mi!
Teacher: ¿Y en español, Julio?
Julio : Caliente y frío.
Teacher: Caliente y frío. (Nodding.)
Julio : (Turns to David and lowering his eyelids, smiles proudly.)

Although obviously much more comfortable with the concepts of "hot" and "cold" in his preferred language, Julio was able to provide at least part of the correct response before being interrupted by his English-preferring classmate. Unlike his English-preferring peers, then, he showed progress in the area of concept development in both his preferred and his second language.

Judy, a blond blue-eyed girl with a small upturned nose and an engaging smile, was a socially oriented child with well-developed verbal skills in English. She demonstrated no verbal abilities or understanding of concepts in her second language at the pretest. At posttest she received close to maximum scores on the English concept development measure but continued to demonstrate no ability in Spanish. Her lack of ability in Spanish forced her to limit her interactions to English-speaking children; this also somewhat limited her choice of centers in which to play. Eventually, however, her outgoing personality made her one of the favorites in the class, and she was sought out by the Spanish-preferring children with some knowledge of English. By the end of the year, with the combined influence of preschool and her two older sisters, she had mastered colors and the alphabet in her preferred language.

Although Judy was one of the few children who began and ended the school year nearly English monolingual as indicated by the test results, early in the year she was observed effectively participating in this second language circle time focusing on the five senses:

(In first circle time, the children have been introduced to tasting and smelling pepper, salt, and sugar, with emphasis on the differences between sweet and sour.)

Teacher: Esta es mi boca.
(Points to her mouth.)
Judy : Boca.
Teacher: Usamos la boca para comer. A ver, todos.
Judy : (Repeats in unison with other children.)
Teacher: (Asks each child what the mouth is used for.)

In this second language circle time the children were introduced to a limited number of concepts, emphasizing both the identification of the object "boca" and the function of taste performed by the mouth. Judy's participation was limited to the repetition of the lexical item elicited by the teacher.

Often independent play provided Judy with opportunities to explore concepts in her preferred language. The following interaction was observed early in the year when Judy was playing with her peers in the art area:

Judy : (Pounds clay with a plastic bowl in the art center while sitting at a rectangular table next to a classmate, Doretta. She shapes the dough with her hands.)
(To Jorge.)
Get some more play dough. Just play dough. That's all you can play with.
Jorge : (Pounds Judy's clay and laughs.)
Judy : (Judy ignores him and begins rolling the dough.)
I'm gonna make a big snake -- a rattlesnake.
(She drops some clay and addresses Jorge:)
Will you gimme that?
Doretta: (Takes Judy's clay.)
Judy : That's my big rattlesnake.

Here Judy exhibited behavior typical of AMANECER children early in the school year, using materials symbolically to create a snake. She also successfully identified the size of the object as "big."

Midway through the year, Judy was observed exhibiting her growing understanding of concepts in her preferred language:

Teacher: (Begins dominant language circle time with a box of paper fruit slices -- bananas and apples. She pins an apple on Brenda, one of Judy's classmates.)

Judy : I want a banana.

Teacher: You gotta listen cuz at the end of the circle, you're gonna have to listen to who goes first -- the apples or the the bananas.

(Teacher then distributes the remaining fruit to the rest of the children in the circle and continues with the lesson.)

Judy : (Thirty minutes later in the art area, tracing apple and banana fruits with crayons on sheets of paper, Judy talks with her companion, Barbara:)

That's the wrong color. I was getting the blue.

(Sticks her hand in a blue container to retrieve a blue crayon.)

Barbara: (With pencil, traces on the edge of Judy's paper.)

O.K., teacher, Judy, I wanna do it.

Judy : Is this an apple or a banana?

(Later, when the children line up for outside play, the students are drilled on their fruits or told to line up first if they are wearing an apple. Judy correctly reviews her fruits and is allowed to line up.)

In this case, the children were encouraged by the teachers to abstract the shape and color of the fruits they had learned during circle time to the concrete paper fruits pinned to their clothes. Judy demonstrated her understanding of the lesson in a vivid form by imitating the behavior of the teacher in drilling her peer.

Finally, late in the year, Judy exhibited a similar pride in her understanding of English concepts in the following sequence which took place during independent play:

(Judy is in the block area building a large tower of blocks.)

Judy: (To the observer.)

Look it, Mr. _____.

(Tower wobbles.)

It's gonna fall.

(Then reassuring herself:)

It won't fall.

(Robert, a classmate, walks by and accidentally brushes the tower, causing the blocks to topple to the floor.)

Robert, Robert did it. Robert broke it down. I gotta fix it again.

(Turning to Nancy, a classmate.)

Can you hand me a small one? I might not need any. Careful, careful.

Nancy : (Counts the blocks in the column.)

Judy : (As the column leans forward under the weight of the new blocks, Judy rearranges the blocks until they are balanced and in a column about three feet high.)

Look it, Look it, Mr. _____.

(She counts to 14 correctly, pointing to the blocks.

I know how to count. I'm a good counter, right?

Observer: (Nods.)

Judy I'm a good builder.

Typical of the English-preferring children at Site I, Judy by the end of the year demonstrated a greater diversity of behavior in the area of concept development. She exhibited a growing understanding of seriation and sequencing by employing the correct sequence of numbers in her preferred language, as well as pointing out the cause/effect relationships between her peers' actions and the resulting destruction of her tower. She also was able to differentiate objects by size ("small" and "big") and make comparisons of size ("bigger").

(3) Socioemotional Functioning. Although classroom observations were limited in this construct, they show relatively consistent trends for most children. With the exception of two children at the initial observation period, all children exhibited relatively greater appropriate socioemotional behavior than inappropriate behavior (Table 41). This was especially true in the areas of self-esteem and motivation where only one instance of inappropriate behavior was observed for a child at any of the three observation periods.

For Spanish-preferring children much of the appropriate behavior in the area of school readiness could be attributed to two children -- Ramona and Julio. Although Julio showed a tendency to fail to follow directions and to distract other children throughout the year, there was a decrease in such behaviors over time. Ramona, on the other hand, exhibited an increasing tendency not to engage in

Table 41. Relative frequency of observed appropriate and inappropriate socioemotional behavior for individual subsample children over three points in time: AMANECER.[1]

| | APPROPRIATE | | | INAPPROPRIATE | | |
|---|---|---|---|---|---|---|
| | I | II | III | I | II | III |
| | % | % | % | % | % | % |
| **Spanish-Preferring** | | | | | | |
| Julio | 0 | 50 | 60 | 100 | 50 | 40 |
| Ramona | 100 | 67 | 60 | 0 | 33 | 40 |
| Doris | 100 | 67 | 100 | 0 | 33 | 0 |
| James | 100 | 67 | 100 | 0 | 33 | 0 |
| Claudia | 75 | 0 | 100 | 25 | 0 | 0 |
| | % | % | % | % | % | % |
| **English-Preferring** | | | | | | |
| Clotilde | 33 | 75 | 67 | 67 | 25 | 33 |
| David | 100 | 83 | 83 | 0 | 17 | 17 |
| Judy | 75 | 100 | 88 | 85 | 0 | 12 |
| Martin | 100 | 100 | 100 | 0 | 0 | 0 |
| Gregorio | 100 | 0 | 60 | 100 | 0 | 40 |
| Ruth | 100 | 50 | 90 | 0 | 50 | 10 |

[1] Percentage totals may not equal 100% due to rounding.

group activities as the year progressed.

Among the English-preferring children, one child, Clotilde, accounted for most of the behaviors that reflected the lack of school readiness noted during the first two observation periods. Like Julio, she tended to distract other children and also often failed to participate in group activities. The relative increases in nonparticipation noted for six of the subsample children at the last observation period was probably a function of waning enthusiasm for school, related to the approach of summer vacation (see Appendixes T and U).

Almost all of the children exhibited relatively more experience in carrying out activities independently, a model objective which was probably facilitated by the emphasis on the horquilla system of classroom management. This same tendency toward greater independence was also evident in the children's decreased dependence on the teacher's positive reinforcement and in the demonstration of pride in accomplishments. Toward the end of the year, observations such as the following, in which the children played independently in their chosen area, were common:

> Barbara at the water sink pours water from a measuring cup into an orange juice container. She brings a chair for Judy and pushes it under her.

Both Spanish- and English-preferring children generally exhibited adaptation to the schoolday routine, especially the customs surrounding meal times when the children were often observed spontaneously cooperating in clean-up duties, as in the following observation: "Cathy finishes with the lunch, crushes the milk carton, and carries it and the paper plate to the trash."

## 3. Parent Outcomes

### a. Parent Sample

Parent interviews provided information on the background characteristics of the children's families and on changes in parental attitudes. These data were gathered for a total of 117 families. At Site I, 27 interviews had preschoolers enrolled in the AMANECER Head Start program. Twenty-five interviewees were parents of comparison children. At Site II, 35 of the 65 interviewees were parents of experimental group children. Results indicate that the great majority of parents at both sites were Hispanics whose language preference was Spanish. At both sites an average of

nine years of school had been completed by all parent groups. The average number of persons per household was five. (See Appendix L for complete parent background characteristics.)

b. Mothers' Attitudes and Perceptions

The results of the comparisons of experimental and comparison group mothers' attitudes were similar at both sites (see Table 42). At each site no significant differences were found in mothers' beliefs that schools were doing a good job of educating their children and that the schools were providing an educational experience that would help the children prepare for a career. Educational aspirations were similar for each group of parents at the two sites, as all desired a college education for their children.

No significant differences were found between experimental and comparison groups at either site in [redacted]ers' assessment of their children's language ability. Respondents [redacted] Site I, however, perceived their children's English to be better than their Spanish language ability, whereas mothers at AMANECER II held the opposite perception. This is consistent with the general language use within the two cities in which the sites were found.

While no significant changes in their role as teachers were reported by the AMANECER II mothers over the year, mothers at AMANECER I were found to provide less formal instruction than the control group mothers. Conversely, those same experimental group mothers reported providing more instructional playthings than their control group counterparts. This situation was a result of the greater amount of interaction between the mother and child in the "stay-at-home" control group than between the Head Start children and their mothers.

To investigate any additional instructional input outside the classroom which might influence test results, mothers of both experimental and comparison children were asked to identify the daily activities of their children. At Site I it was found that during the time the experimental children were in school, control children spent most of their time either playing or watching television. The activities of both groups were similar outside of classroom hours, and parents seldom identified any formal learning activities as occupying their children's time (Appendix V ).

Site II comparison children's activities more closely paralleled those of their experimental counterparts. They spent most of their time at school, watching television, or at play. For both groups, instructional activities in addition to those of preschool were rare. Thus, it appears that for all children at both sites experiences related to the cross-model objectives generally occurred during school.

Table 42 . Comparison of the attitudes and perceptions of mothers of all sample children: AMANECER.

| | SITE I | | | | SITE II | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Signif-icance[1] | Experimental MEAN (Adjusted) | Group (N) | COMPARISON MEAN (Adjusted) | Group (N) | Signif-icance | Experimental MEAN (Adjusted) | Group (N) | COMPARISON MEAN (Adjusted) | Group (N) |
| **Language Assessment of Child** | | | | | | | | | | |
| Spanish Ability | ns | 1.62 | 27 | 1.89 | 25 | ns | 2.32 | 36 | 2.49 | 30 |
| English Ability | ns | 2.15 | 27 | 2.24 | 25 | ns | 1.47 | 36 | 1.35 | 30 |
| **Maternal Language Usage** | | | | | | | | | | |
| Spanish-Speaking Ability | ns | 2.32 | 27 | 2.25 | 25 | ns | 2.44 | 36 | 2.33 | 30 |
| Instructs in Spanish | | | | | | ns | 0.45 | 15 | 0.49 | 18 |
| English-Speaking Ability | ns | 2 04 | 27 | 2.19 | 25 | ns | 2.00 | 36 | 1.87 | 30 |
| Instructs in English | | | | | | ns | 0.55 | 15 | 0.51 | 12 |
| **Mother's Role as Teacher** | | | | | | | | | | |
| Provides Formal Instruction | ★ | 0.68 | 27 | 0.88 | 25 | ns | 0.83 | 36 | 0.86 | 30 |
| Provides Instructional Playthings | ▲ | 0.65 | 27 | 0.57 | 25 | ns | 0.64 | 36 | 0.65 | 30 |
| **Mother's Belief About Education** | | | | | | | | | | |
| Overall School Effectiveness | ns | 4.18 | 27 | 4.05 | 25 | ns | 3.99 | 36 | 4.05 | 30 |
| Career Preparation | ns | 2.01 | 23 | 2.40 | 22 | ▲ | 2.12 | 32 | 2.55 | 24 |
| Importance of Bilingual Education | ns | 4.26 | 22 | 4.21 | 23 | ns | 4.32 | 36 | 4.32 | 24 |
| Importance of Self-Concept | ns | 4.45 | 22 | 4.48 | 23 | ns | 4.14 | 36 | 4.21 | 24 |
| Educational Aspiration for Child | ns | 15.58 | 26 | 15.72 | 25 | ns | 16.32 | 36 | 16.15 | 29 |
| **Socioeconomic Status** | | | | | | | | | | |
| Family Income | ns | 6.77 | 26 | 7.12 | 25 | ns | 8.89 | 36 | 8.06 | 30 |

[1]The following symbols are used to depict levels of significance

★ $p \leq .0500$

▲ $.0500 < p \leq .1000$

ns $.1000 \leq p$

[2]Failed test of homogeneity of within cell regression slopes: $P \leq .0500$

2. Teacher Outcomes

a. Teacher Sample. As both sites were characterized by a flux in teaching personnel, the number of classroom staff that experienced a complete year with the AMANECER model and comprised the teacher sample was limited to three (two teachers and one aide) at Site I and three teachers and one aide at Site II. At Site I, changes were made in the teaching staffs of all three classrooms during the course of the year because of resignations by teachers to pursue other employment and by the reassignment of personnel. Site II lost two aides for similar reasons.

Initially, the AMANECER teaching staff at both sites was composed of Mexican American women who were reared in the local communities. Later in the year, a Black woman was hired as a replacement teacher in AMANECER I. Except for this replacement teacher at Site I, all teachers and aides were bilingual and the majority reported that most of their verbal interactions were either in Spanish or equally divided between Spanish and English. The ages of the teaching staff ranged from the mid-20s to the early 30s.

Educational background and teaching experience of the classroom staff were similar. The majority of the staffs' formal education was limited to having attained a high school diploma. Two teachers at Site I, however, had also been certified as Child Development Associates, and two others, who served during part of the year, were taking classes in hopes of attaining Child Development Associate certification. At Site II, two staff members were working toward A.A. degrees in child development by attending part-time classes at a local junior college. AMANECER II teachers averaged 3-1/2 years in the classroom. The AMANECER I teachers had an average of 15 months of classroom experience.

b. Teachers' Attitudes. Teachers implementing AMANECER at both sites were positive toward the model. In informal discussions with fieldworkers, they stated that it gave structure to the preschool day and provided them with new ideas. They were especially happy with the classroom management using horquillas, or clothespins, to limit the use of individual learning centers.

All teachers valued the in-service training sessions which provided them with new concrete ideas for implementation of the curriculum. AMANECER I teachers, however, received more training during the evaluation year than those at AMANECER II, and even at Corpus Christi, workshops which had taken place at least once a month the previous school year were infrequently carried out in 1979-1980.[6] Most teachers expressed the need for more guidance from the model developers. Teachers at Corpus Christi also voiced concern over the lack of adequate materials which they felt was a result of

problems at the central office.

At both sites teachers and aides felt that to effectively carry out the directives of the model, extra work for which they were not compensated was required. They were vocal about their dislike of the paperwork required to implement the model's directives regarding grouping of children by language preference. They perceived their jobs as low-paying and were constantly looking for improved opportunities.

Teachers and aides at the AMANECER sites continued to display a predominantly integrative orientation toward both bilingualism and bilingual education over the course of the evaluation year. Principal benefits listed by the classroom staff were cultural awareness, intercultural communication, and socialization. They did, however, increasingly come to value the advantages of heightened education and career opportunities. There was a consistent trend at both Corpus Christi and Laredo toward a greater emphasis on these pragmatic aspects of bilingualism, especially for Spanish-preferring children. As teachers had to deal primarily with Hispanic children, it is probable that they came to see the advantage of bilingualism for Hispanics as closely linked with the educational process. As regards their orientation toward a bilingual/bicultural curriculum at Site I the instructors at the posttest identified a greater diversity in advantages for native Spanish-preferring children than for English-preferring children. This was not the case at Site II where teachers and aides voiced a mixed integrative-instrumental orientation for both English- and Spanish-preferring youngsters. At both pre- and posttest, teachers were strongly in favor of incorporating Hispanic culture into the classroom. This included activities to introduce children to Hispanic customs, to provide community-based role models, and to utilize Hispanic celebrations, dress, songs, dances, and curriculum materials.

No significant trends were found in the AMANECER teachers' attitudes toward the type of language that should be used by Spanish- or English-speaking children. Teaching staffs at both AMANECER sites were generally in favor of the native and second language being spoken as it is in the home and community. At posttest, Site I teaching staff continued supporting the use of textbooks as the language model for English-speaking children. They also agreed that Spanish speakers learn a second language as it is presented in textbooks, but were ambivalent about how they should learn in their native language. There was, however, a tendency at Site II to maintain their opposition toward the use of textbooks as language models for either English- or Spanish-speaking children.

Most of the teachers at both AMANECER sites stressed the importance of parental participation in the classroom (Table 43). Site II teachers, however, seemed to see parent involvement slightly

Table 43. Attitudes toward parent involvement of experimental Head Start teachers: AMANECER.

| | VERY POSITIVE | | POSITIVE | | NEUTRAL | | NEGATIVE | |
|---|---|---|---|---|---|---|---|---|
| SITE I N = 3 | PRE | POST | PRE | POST | PRE | POST | PRE | POST |
| Parents should be involved in the classroom | 67 | 33 | 33 | 67 | | | | |
| If parents cannot be in the classroom, teacher should have frequent contact with them | 34 | | 67 | 100 | | | | |
| Teacher should attempt to involve seemingly uninterested parents | 67 | | 33 | 67 | | 33 | | |
| Teacher personal success in involving parents | | | 67 | | 33 | 67 | | 33 |
| Teacher could do a better job with more parent participation | 100 | 33 | | 33 | | 33 | | |
| Parents provide accurate information to teachers | 33 | | 67 | 100 | | | | |
| SITE II N = 4 | | | | | | | | |
| Parents should be involved in the classroom | 75 | 50 | 25 | 50 | | | | |
| If parents cannot be in the classroom, teacher should have frequent contact with them | 75 | 75 | 25 | 25 | | | | |
| Teacher should attempt to involve seemingly uninterested parents | 100 | 100 | | | | | | |
| Teacher personal success in involving parents | 25 | 50 | 50 | 25 | 25 | 25 | | |
| Teacher could do a better job with more parent participation | 50 | 100 | 25 | | 25 | | | |
| Parents provide accurate information to teachers | 25 | 50 | | 50 | 75 | | | |

more positively than did those from Site I where teachers had experienced difficult situations with some parent volunteers. Both groups generally felt that teachers should have frequent contact with those parents unable to come to the classroom and that parent participation could help them in their teaching duties. They also felt that they had had success in involving parents in their programs as well as confidence in the type of information provided by parents.

## B. Implementation

This section provides the findings of the evaluation related to the implementation of the AMANECER curriculum at the two experimental sites. The discussion presented here is supplemented by Appendix Y, which provides descriptions of (1) the sociocultural environment of the communities, (2) the administrative aspects of each site, and (3) the Head Start settings. A description of the principal features of the AMANECER curriculum model initiates this section. The success of each site and each classroom within a site in meeting the goals of the model in five areas -- schedule and organization, physical setting, instructional materials, individual behavior, and instructional strategies -- is then discussed. A description of the comparison group at each site completes the section.

### 1. Principal Features

The curriculum model known as AMANECER was developed by the Intercultural Development Research Association (IDRA). The developers, who geared their model to address the concerns raised by teachers in surveys conducted by IDRA, describe their model as a process, a method of organizing materials, and a framework for putting together a bilingual approach. The model utilizes an eclectic theoretical approach, taking philosophical underpinnings from the Piagetian and Montessorian approaches as well as others.

#### a. Model Goals

Physical growth and intellectual development are viewed as integral processes that occur in sequential stages. All children develop specific skills which help them progress to higher stages of development. All early learning begins at a concrete level. Thus, a child must be introduced to a physical object before she or he develops a concept or idea of that object.

The model aims to facilitate the child's learning and development by introducing into the classroom those aspects of his or her life style which serve as a bridge between the home and the school. The model developers hold that "children learn best in a setting which

respects and uses their culture and language, and that this culture and language should be the means through which children's knowledge is extended" (Barrera, 1978: 18, Booklet T).

This ideal is reflected in the following classroom objectives: (a) "teachers will create a learning environment which addresses the developmental needs of children, by providing appropriate learning experiences which reflect their language and cultural characteristics"; (b) teachers are to develop skills enabling them to personalize instruction, "create a safe and healthy learning environment, support the child's cultural identity, and involve parents in the learning process"; and (c) teachers are to facilitate parental participation in classroom activities to ensure a smooth, natural transition from home to school (Ibid.: 23-25).

The developers devised a set of booklets which explain the AMANECER model and a series of supplementary materials designed to facilitate its implementation. The color-coded booklets are organized into packets which address different aspects of the curriculum, including a description of the model and its theoretical underpinnings, acquisition and use of materials, the linkage between home and school, and a synthesis of the model's approach. The supplementary materials include various file systems to aid the teacher in preparing, organizing, and evaluating classroom activities so as to ensure a well-balanced curriculum. A variety of checklists, folders, and language profiles are provided to record the child's progress in the areas of physical, socioemotional, and language development as well as insights into the child's life style and "deep" culture. Such record systems are aimed at providing each child with an individualized program of instruction appropriate to his or her cultural reality and stage of development.

b. Classroom Management

The model AMANECER classroom is divided into learning centers whose function is the development of creativity, coordination, and social skills. The model developers recommend a variety of centers: art center, blocks, discovery, dramatic play, library, manipulation, music, sand and water play, and woodworking. As a means of providing order and structure to the classroom setting as well as of avoiding overcrowding in any one center, use of a specially designed classroom management system is suggested. In order to limit the number of children that may use an interest center at any one time, a designated number of clothespins (horquillas) are placed on a cardboard and tacked on to some areas in the center. Before a child can play in a center, she or he must obtain a clothespin which is then attached to the child's clothes. If no clothespins appear in a center, a child must wait until one is available before playing in that center. It is recommended that the first three weeks of the school year be spent drilling the children on the clothespin system and on how to use and

put away materials in a center. Once children have internalized the routine, the developers point out, teachers are freed from the duty of directing actions so as to concentrate on working with children on an individual basis.

c. Classroom Schedule

Scheduling of activities is considered a basic model feature. It not only allows teachers to use their time wisely and accomplish more but also provides a routine for children, imparting a sense of order and security which enables them to predict and plan their actions. The importance of scheduling lies not so much in defining the amount of time allotted to activities as in assuring the sequence of events.

The model recommends that teachers include the following activities in their schedules: arrival, breakfast, dominant language circle, transition, independent play, second language development circle, outside play, lunch, and nap time.

Arrival: This period is designed to ease the anxiety of transition from home to school. Independent activities may occur during this period.

Breakfast: Breakfast serves to ease the hunger pangs as well as allow planning for the day. Children can help serve the meal and clean up.

Dominant Language Circle Time: According to the model, there are to be at least two groups: the English dominant language group and the Spanish dominant language group. Teachers are to plan the lessons for the circle times using the supplementary curriculum materials provided by the model developers. Only English is to be spoken during the English language circle time, while only Spanish is to be used in the Spanish language circle time. The techniques to be employed for language development are modeling, expansion, elaboration, description, questioning and/or listing. The language circle in which the children speak their dominant language is to be conducted at a higher level of complexity than the one in which the children are learning a new language. In addition, the teacher should encourage spontaneous conversation among the children.

Transition: According to the AMANECER model, a transition is designed to move children in a "natural, orderly manner" from one activity to another (Barrera, 1978: 18, Booklet 1). The transition from the first circle time to the next activity is unique. It is at this time that teachers have a chance to implement some personalized instruction. Should the model be implemented to its fullest extent, a teacher, by noting a child's behavior and development in his or her personal folder, would diagnose the individual's weaknesses and designate the centers whose activities would help the child overcome

such weaknesses. Thus, she would give the child a set of centers from which she or he could choose to play. This allows children to practice their decision-making skills while also aiding in their development.

Independent Play: Once a child has selected a center, he or she must put on a clothespin before playing in that area. While the children engage in independent play in their chosen learning centers, the teacher circulates throughout the class attending to individual children's needs.

Second Language Development Circle: The language development during this activity is to be conducted on a much more elementary level than in dominant language circle time. Using modeling, the teacher introduces a maximum of two concepts per session.

Outside Play: The model suggests that, just as in the classroom, children be allowed to choose a play area in the outside environment. In addition, teachers are to plan activities which will allow them to rate the children's development in using different muscles.

Lunch: Lunch serves to provide a meal as well as a time to socialize. Teachers are to eat with the children so that they can aid the children and serve as models for table manners. Food and lunchtime conversation may also serve as a means to review new concepts or language items learned during circle time.

Nap Time: A nap-time period is recommended so that children may rest. Teachers can help children relax by talking with them or rubbing their backs. A snack time and independent play activity may be scheduled for the all-day programs.

The AMANECER model, then, aims its program at the total development of the child. The various activities and materials are designed for the development of physical coordination, analytical thought, and social skills.

## 2. Model Level Implementation

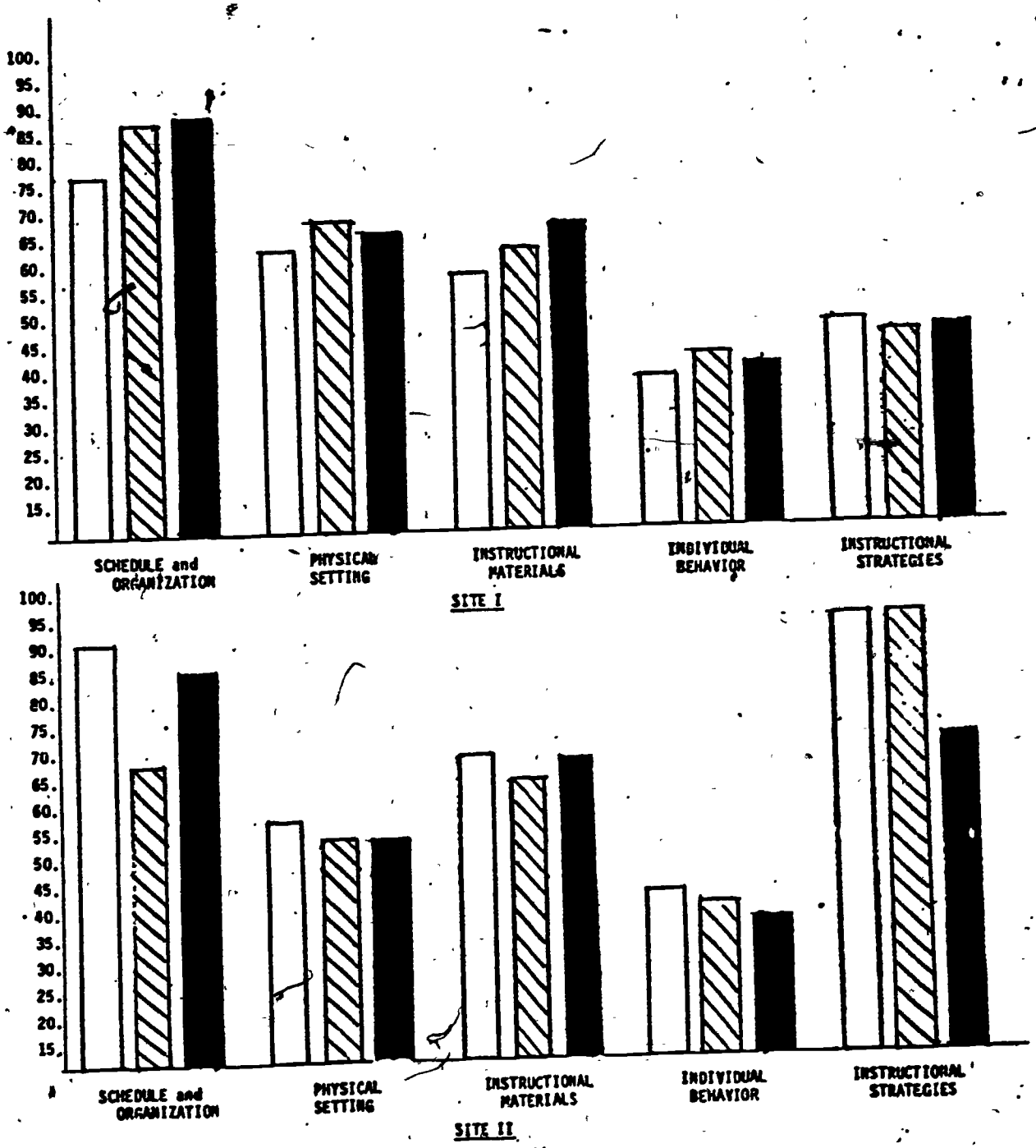
Assessment of the degree of implementation was carried out by means of the implementation checklist described previously in the methodology chapter. Table 44 presents data on the implementation of the model at the two AMANECER replication sites. This is augmented by Figure 5 which presents the relative frequencies of the various implementation categories for each site over time. Varied patterns of overall implementation are evident in the table. Although scores are similar at the two sites, implementation at Site I peaks at the midpoint observation, whereas Site II's scores display a decreasing trend over time. The midyear peak of Site I seems to be the combined result of the training received by the staff immediately prior to the observation period and to the closing of the school during that time. Two training workshops took place near the

Table 44. AMANECER implementation scores by site over time.

| Implementation Categories | Maximum Possible Score | Site I | | | Site II | | |
|---|---|---|---|---|---|---|---|
| | | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 |
| Schedule/ Organization | 18.00 | 13.95 | 15.90 | 16.05 | 16.50 | 15.60 | 15.30 |
| Physical Setting | 28.20 | 17.63 | 19.15 | 18.65 | 16.45 | 15.04 | 14.81 |
| Instructional Materials | 4.97 | 2.84 | 3.08 | 3.43 | 3.43 | 3.20 | 3.31 |
| Individual Behavior | 31.32 | 11.82 | 13.00 | 12.40 | 13.34 | 12.76 | 11.89 |
| Instructional Strategies | 8.73 | 4.21 | 3.97 | 3.23 | 8.09 | 8.08 | 6.31 |
| TOTAL | 91.22 | 50.45 | 55.11 | 53.76 | 57.81 | 54.68 | 51.62 |

FIGURE 5

AMANECER DEGREE OF IMPLEMENTATION BY SITE OVER TIME



end of the calendar year and installation of a heating system forced closing down of the school, allowing teachers to use the time as a work week. This provided ample time for the teachers at Site I to evaluate their performance up to that date, plan activities, and prepare classroom materials.

The decreasing scores for Site II are the result of the staff's less frequent exposure and interaction with the trainer through workshops, which led in part to less success in taking advantage of their limited resources and in maintaining instructional activities over the entire year. The higher initial scores at Site II appear to be a result of the staff's strict adherence to the schedule during the early part of the year and their ability to consistently provide adult direction in those activities which occurred in the classroom.

Although both sites appear to have been highly successful in carrying out the schedule as planned, Site I was more successful as the year went on, whereas Site II teachers were relatively consistent in completing scheduled activities over the course of the evaluation year. The lower scores for Site I at the first observation reflect adjustments made by the teachers to deal with fluctuating bus schedules and loss of personnel who accompanied the buses.

The physical setting category details higher overall scores for Site I than Site II. While at both sites, the recommended learning centers were found in the room, classroom size at Site II prevented the addition of supplementary centers at appropriate times during the year and at times resulted in the removal of a center. The room sizes at Site II also tended to obstruct free movement as shelves or tables at times blocked access to specific centers. Classrooms at Site I were considerably larger allowing for mobility in addition to providing space for additional centers.

The category of instructional materials assesses the presence and use of the appropriate materials, including culturally relevant materials, in each area. Site I scores tend to increase across the three observation periods as a result of both the new materials created in training sessions and the increased number of materials in new learning centers. Site II, however, had generally higher overall scores. This was due to the inclusion of more culturally relevant materials at the latter site. In addition to the presence of items common to both sites, such as ferros and molcajetes, Site II's classrooms abounded in depictions of culturally and ethnically diverse food and pictures/drawings.

In comparing the scores for individual behavior, which focuses on the interactions of the classroom population, with the total possible points in that category, one notes that the scores are relatively low at both sites; neither approaches half of the possible points. Contributing to the low scores were the lack of parent participation in the classroom, as called for by the model, and a

tendency to rely on the use of one language in teacher-child interactions.

Finally, the greatest differences between Site I and Site II are in the instructional strategies category. Whereas both sites showed a decrease in scores over the evaluation year, Site II received near maximum scores at all three observation periods while Site I achieved less than half the possible points. Contributing to the higher scores at Site II was the fact that language activities were carried out more consistently and more adult-directed activities occurred, especially during independent play.

Differences in implementation also existed across classrooms within a site. In order to better understand the dynamics of implementation which have influenced the scores, it is necessary to examine the implementation process by classroom. The next portion of the report describes this process in each classroom within each site.

### 3. Classroom Implementation Factors (Site I)

All AMANECER I classrooms experienced a midyear peak in overall implementation scores, as Table 45 makes evident. By the final observation period, overall scores for the three classrooms approached the same level, suggesting that an optimal "threshold" of implementation was being approached. Similarity across classrooms was particularly apparent within the schedule/organization and instructional materials components of implementation, revealing coordination in the timing of classroom activities and use of the same types of display and lesson materials. Variation can be noted between classrooms in other implementation categories and at different points in time. Factors affecting each of the five categories are considered in turn.

#### a. Schedule and Organization

Implementation scores across all three AMANECER I classrooms in this category are relatively similar. The following schedule was posted in all the classrooms:

| | |
|---|---|
| Arrival, washing up, and breakfast | 45 minutes |
| Transition - clean-up | 10 minutes |
| Large group | 20 minutes |
| Transition | 5 minutes |
| 1st language lesson | 10 minutes |

Table 45. AMANECER I implementation scores by classroom over time.

| Implementation Categories | Maximum Possible Score | Classroom A | | | Classroom B | | | Classroom C | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 |
| Schedule/ Organization | 18.00 | 13.50 | 15.75 | 16.20 | 13.95 | 16.20 | 16.20 | 14.40 | 15.75 | 15.75 |
| Physical Setting | 28.20 | 16.69 | 18.54 | 19.74 | 18.80 | 18.80 | 19.04 | 17.39 | 20.10 | 17.16 |
| Instructional Materials | 4.97 | 2.84 | 2.49 | 3.55 | 2.84 | 3.19 | 3.55 | 2.84 | 3.55 | 3.19 |
| Individual Behavior | 31.32 | 11.74 | 13.92 | 11.30 | 13.49 | 13.48 | 11.94 | 10.22 | 11.53 | 13.96 |
| Instructional Strategies | 8.73 | 4.36 | 4.85 | 3.40 | 4.36 | 4.38 | 2.91 | 3.90 | 2.68 | 3.39 |
| TOTAL | 91.22 | 49.13 | 55.55 | 54.19 | 53.44 | 56.05 | 53.64 | 48.75 | 53.61 | 53.45 |

| | |
|---|---|
| Independent play | 30-45 minutes |
| Transition | 10 minutes |
| 2nd language lesson | 10 minutes |
| Transition | 3 minutes |
| Outside play | 45 minutes |
| Wash-up and lunch | 60 minutes |
| Transition - clean-up | 10 minutes |
| Nap time - | 75 minutes |
| Transition | 10 minutes |
| Snack | 20 minutes |
| Transition - prepare to go home and departure | 10 minutes |
| Teacher planning | 90 minutes |

Early in the year, schedule variations were commonplace as instructors had to cope with problems of staff turnover, inclement weather, and extra duties. As can be seen in Table 45, the highest scores were recorded for this category during the second observation period. Prior to this series of observations, cold spells had forced the administrators to close the site as the classrooms had no heating system. During this time teachers made classroom materials, planned lessons, and caught up with their paperwork. The additional preparation was reflected in the higher scores for all classrooms during the set of observations made upon the reopening of classes. Scores remained relatively constant for the third observation, during which period teachers planned and carried out various school-ending rituals. Language lessons and independent play tended to be shortened to accommodate practice periods for marching in a parade, for the graduation exercises, and for making materials to decorate the walls.

The weather also affected scheduling when at the beginning of the school year a major storm with high winds and rain caused major flooding in Corpus Christi. The site was closed for a day and classroom attendance was poor for the entire week, delaying the initial organization and contributing to low scores in this category at Time 1.

Location of the Head Start center also impinged on implementation in the area of scheduling and organization. Busing made for late starts

and early departures. Though the children's day was scheduled to begin at 8:00 A.M., buses generally arrived at the site between 8:30 and 9:00 A.M. At the beginning of the year, children were on their way home at 2:30 P.M. Following parents' complaints concerning late arrivals at the drop-off points, the bus carrying the majority of the AMANECER children began leaving at 2:20 P.M. and by the end of the year it would leave as early as 2:10 P.M. The schedule was thus progressively shortened to accommodate the bus schedules.

b. Physical Setting

As Table 45 reveals, all of the classrooms at Site I followed the overall site pattern of relatively high scores throughout the year with a peak during the middle observation period. Several variables combined to produce this situation. During the initial observation, the classrooms had centers which had not been opened for use. Teachers, following AMANECER recommendations, allowed the children to get fully acquainted with a learning center before opening another. In addition to learning the functions of materials in open centers, children also had to learn to return items to their proper place and to follow the horquilla (clothespin) system in choosing areas. The low scores at Time 1 for all classrooms are thus a result of both closed centers and a low level of center use. The smaller size of room A compounded this trend, accounting for that classroom's lowest score in this area. By Time 2 all centers were open and being consistently used by all children. The teacher in classroom A had rearranged the room to include all learning centers. However, by Time 3 the more popular centers (the block area, the art area, and the drama center) had the highest clusters of children as the horquilla system began to be used less consistently. Scores reflect this drop in the total number of centers being used.

c. Instructional Materials

Table 45 records an increase in the instructional material scores for rooms A and B from the first to the third time periods. The teachers in these two classrooms spent considerable time in providing materials for different centers. Room A's score dropped during Time 2 due to a lack of materials resulting from departure of one of the instructors. By Time 3, however, scores underwent a dramatic increase as instructors made a practice of decorating the room with materials appropriate to the lesson. When studying colors, for example, the room abounded in streamers, balloons, or other items in the color to be learned. Room B instructor utilized the same technique, changing bulletin board material to reflect the week's theme. In addition, they included books in Spanish in their library corner, exchanging books every two weeks through the public library. The drop in score for room C at the third observation period reveals a decreasing

involvement of the aide in activities requiring room arrangeme

The category of instructional materials also included the presence and use of materials from distinct cultures. Materials representing different cultures were varied and frequently used. They included lotto games, records with music played by home-town or regionally based bands, items such as jarros and molcajetes in the dramatic play area, and books and tapes in Spanish. In all three classrooms, the dramatic play center (a housekeeping center) grew rapidly in popularity. The molcajete, a grinding toy, was one of the more popular items. In the music area, instruments were rarely played, but all three classrooms often played Spanish language records reflecting the regional culture.

d. Individual Behaviors

The individual behavior category encompasses language use by teachers and children, involvement of parents, and children's patterns of working alone or in a group. From Table 45 it can be seen that classroom A received its highest score at the second observation period, classroom B at the first, and classroom C at the third. The lack of consistent pattern can be directly related to instructor turnover within the classrooms. Language use is the best example of this.

English language use predominated across the teaching pairs in all classrooms under observation at this site. Table 46 shows that all teachers and aides tended overwhelmingly to use English in the classroom except for the aide in classroom A at Times 2 and 3. Reliance on English as the language of adult interaction with the children increased dramatically throughout the year in classroom C.

Two factors can be identified as influencing adult language use in the classroom. One factor is classroom composition. As noted previously there was a high percentage of English-preferring and bilingual children in the classrooms. Thus, teachers were not deterred in their use of English by the lack of knowledge of English on the part of most children.

Another factor which influenced language was the shifts in personnel which occurred in the various classrooms. By Time 2, all classrooms had undergone changes in their teaching teams.

With the resignation of the teacher and the transfer of the original aide, the replacement aide was the sole adult in classroom A. This accounts for the relatively low percentage of teacher utterances recorded in classroom A during the first observation period and is reflected in the low implementation score for individual behavior at this time. The teacher appointed at the start of the second observation period was new to the position, and the low.

Table 46. AMANECER I classroom language production by teaching unit.

| CLASSROOM A INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 19 | 7 | 1 | 0 | 26 | 33 | 4 | 0 | 0 | 37 | 47 | 4 | 0 | 0 | 51 |
| Aide | 40 | 32 | 1 | 1 | 74 | 20 | 42 | 0 | 1 | 63 | 13 | 34 | 0 | 2 | 49 |
| TOTAL | 58 | 39 | 2 | 1 | 100 | 53 | 46 | 0 | 1 | 100 | 60 | 38 | 0 | 2 | 100 |

| CLASSROOM B INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 45 | 24 | 0 | 0 | 69 | 28 | 16 | 0 | 1 | 45 | 28 | 25 | 0 | 3 | 57 |
| Aide | 28 | 13 | 0 | 0 | 31 | 35 | 14 | 0 | 6 | 55 | 28 | 13 | 1 | 1 | 43 |
| TOTAL | 73 | 37 | 0 | 0 | 100 | 63 | 30 | 0 | 7 | 100 | 56 | 40 | 1 | 4 | 100 |

| CLASSROOM C INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 2 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 33 | 28 | 0 | 1 | 62 | 44 | 2 | 0 | 1 | 47 | 34 | 0 | 0 | 0 | 34 |
| Aide | 29 | 5 | 4 | 0 | 38 | 28 | 23 | 0 | 2 | 53 | 44 | 20 | 0 | 2 | 66 |
| TOTAL | 62 | 33 | 4 | 1 | 100 | 72 | 25 | 0 | 3 | 100 | 78 | 20 | 0 | 2 | 100 |

percentage of recorded language production reflects her adjustment to her role as teacher.

The pattern of English language usage remained consistent for classrooms B and C, the highest frequencies having been recorded for the team in classroom C. Here, again, changes in the teaching personnel help account for this result. In classroom B, a new aide, anxious to perform well as she was recently hired, was observed making materials, preparing lessons, and taking a more prominent role in the classroom during the second observation period. Her behavior influenced the scores at the second and third observation periods by pushing these up at the midpoint and bringing them down at the last period once she adjusted to the classroom setting. In classroom C, an English monolingual instructor was hired to replace a bilingual one, contributing significantly to the increasingly high English use by the teaching team.

As suggested by both the model and the trainer, instructors in all classrooms tended to engage in verbal interaction most frequently during meal times and language lessons. Such a pattern remained consistent throughout the year. Language use during transitional periods showed a marked drop during the final observation period. This drop attests to the children having internalized the routine, thus requiring fewer verbal directions on the part of the instructors.

In terms of the type of utterances used, instructors relied overwhelmingly on informational statements and questions in their verbal interactions with children. Teaching teams also tended to use more praise than discipline with their pupils, a strategy emphasized by the model and the trainer. However, this category had the lowest overall frequency. Direct commands were used less frequently over the course of the year by the teams in classrooms A and B, while they were generally higher in classroom C due to the high absenteeism of one instructor which forced the lone person to rely more on directing the actions of the children.

Another component of this category is parent participation, which at Corpus Christi was influenced by the site's isolation. Because the preschool was located so far from its catchment areas and the closest bus stop was about one mile away, parents had to drive to the school. Some parents did come to the site in the school bus and thus had to leave when the children left. At a parents' meeting, however, many expressed an unwillingness to spend a whole day at the school and complained of their inability to participate because of their lack of transportation. The majority at the meeting had been able to attend only because transportation to and from the site was provided by the center. They made clear their desire to participate, but added that they could only do so for a few hours. All-day volunteer assignment appeared too much of a strain on their schedules and lack of transportation made part-time participation difficult.

Isolation of the site also influenced teachers' behavior in the classroom. Individuals who rode the bus were physically tired and usually less enthusiastic in their participation in classroom activities. Two of the teachers who resigned attributed their decision to the low pay as well as to their dissatisfaction with serving on the bus route.

Child behavior influenced the implementation process as well. All classrooms had one or more children who required special attention because of disruptive behavior. Such behavior prevailed throughout the year and though psychologists worked with these children, few behavioral changes occurred.

In addition, children became unusually excitable toward the end of the school year, contributing to the drop in implementation scores. Teachers complained about their inability to get everyone's attention during the language lessons. At times, the clothespin management system broke down as children ignored the use of the pins until directed to use them by the teachers. Children spoke of their desire to be at home and began to lose interest in the learning centers. One student, for example, considered by his teachers to be one of the outstanding students at the site, informed his teacher that he was tired of school and wanted it to end. He began to wander from center to center and at times simply watched others play while remaining uninvolved in groups or centers. This waning enthusiasm for school was also reflected in the results of children's socioemotional functioning reported previously in the child outcomes section.

e. Instructional Strategies

The instructional strategies category consists of scoring for adult-directed activities, child-directed activities, the use of first and second language groups, and the use of both languages. The generally low scores in this category are a reflection of teacher turnover which placed relatively inexperienced personnel in all classrooms. From Table 45, one notes that classrooms A and B received the highest scores during the second observation period while classroom C's highest score was at the first period. As has been pointed out, the highest total scores obtained during the second observation period stemmed from the simultaneous closing of the school for repairs and a training workshop, providing teachers with a work week before the start of the second observation period. Classroom C's scores reflect the changes in schedule due to the aide's high absenteeism. Both large and small group activities as well as activities in Spanish tended to be omitted during her absences.

The following excerpt is from an evaluation researcher's fieldnotes. It illustrates various aspects of the implementation process at AMANECER I reflected in the preceding discussion.

It is first language circle time and the week's theme is vegetables. In one corner of the room sits the English-preferring group of five youngsters with Mrs. Jones, one of the teachers. She passes around the foil-covered "feely box," with the words "touch me" and a variety of shapes and objects pasted on the top. While one of the children sings quietly to himself, Carlos guesses at the contents of the box, "It's a coke!" His peers unanimously reject his suggestion with "no!" and the teacher asks, "Is a coke a vegetable?" Judy replies, "No, it's a drink."

Meanwhile in the discovery area the Spanish-preferring group sits around a table with Mrs. Pérez, the aide. Dora leans against the child-size table intently watching her teacher peel a cucumber. Juan states, "I like it with cáscara (peel)." As the teacher proceeds to distribute pieces of the vegetable to each child, she responds to Juan with a question, "You like it with cáscara?" Berta, receiving her slice of cucumber, remarks, "It don't have cáscara on it." Juan shakes his head no and Berta asks him, "You like it?" Juan nods. Dora delicately picks off the seeds from her slice. Juan protests. "Teacher, I don't like it." Berta asks him, "You like the cáscara?" Juan nods again. The teacher, returning to the language of the lesson, asks "¿Cómo se llama esto?" Berta and others respond correctly, "Pepino fresco." As a closure to her short lesson the teacher asks, "Robert, ¿Cómo se llama esto?" Robert answers, "Pepino verdura." Then, anxious to go out for outside play, he asks, "¿Ahora puedo ir a jugar?" The teacher repeats for the last time, "Pepino fresco." She then adds, "Y es una verdura, muy bien." She then releases the restless students for outside play.

As recommended by the model, these first language lessons took place as scheduled. The Spanish language session took place in the discovery area which the model suggested was an area where children should have new experiences. The "feely box," which was introduced and used frequently in this classroom after the teacher training workshop in December, exemplified creative use of instructional materials to encourage experiential learning. Since this was the first language session, both teachers attempted to move from the concrete (cucumber) to a higher level of abstraction by classifying the object (vegetable). Mrs. Pérez also offered positive reinforcement to help build her young student's self-concept. English, however, was the primary language medium in both the English and Spanish circles. According to the model, the Spanish session should have been conducted entirely in Spanish. The children, however, spontaneously used English when they themselves directed the conversation. The lesson only returned to its intended first

language focus through the efforts of the teacher, who asked a question in Spanish. Keeping the two languages distinct during language lessons was one of the primary problems faced by AMANECER I teachers at this site where English-preferring children and Spanish-preferring children with both productive and receptive bilingual ability predominated.

## 4. Classroom Implementation Factors (Site II)

As evident from Table 47 which displays the scores for the implementation categories at Site II, all classrooms experienced a drop in overall implementation scores from the first to the third observation period. Physical setting, instructional materials, and individual behaviors were consistently the most problematic areas. There was considerable variation between classrooms, however, in the categories of instructional materials and instructional strategies.

### a. Schedule and Organization

All classrooms at Site II planned and carried out activities scheduled throughout the year. Each classroom had posted on the wall the general schedule of events and weekly planning guide. The schedule utilized at AMANECER II was as follows:

| | |
|---|---|
| Breakfast | 30 minutes |
| Morning large group | 40 minutes |
| 1st circle time | 15 minutes |
| Independent play | 45 minutes |
| 2nd circle time | 15 minutes |
| Outdoor play | 30 minutes |
| Lunch | 30 minutes |
| Clean-up/toileting | 15 minutes |
| Nap time | 2 hours |
| Afternoon snack | 30 minutes |
| Independent activities/departure | Remaining 2 hours |

Teachers concentrated on socializing the children to the schedule, and from early in the year it was followed closely even during tran-

Table 47. AMANECER II implementation scores by classroom over time.

| Implementation Categories | Maximum Possible Score | Classroom A | | | Classroom B | | | Classroom C | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 |
| Schedule/ Organization | 18.00 | 16.20 | 15.30 | 16.20 | 16.20 | 15.30 | 15.30 | 17.10 | 16.20 | 14.40 |
| Physical Setting | 28.20 | 17.63 | 15.51 | 14.57 | 15.28 | 14.81 | 15.04 | 16.45 | 14.81 | 14.81 |
| Instructional Materials | 4.97 | 2.84 | 2.84 | 3.55 | 3.20 | 3.92 | 2.84 | 4.26 | 2.84 | 3.55 |
| Individual Behavior | 31.32 | 13.05 | 13.05 | 11.75 | 12.62 | 12.18 | 11.75 | 14.36 | 13.05 | 12.18 |
| Instructional Strategies | 8.73 | 7.76 | 6.79 | 7.28 | 8.25 | 8.73 | 6.31 | 8.25 | 8.73 | 5.34 |
| TOTAL | 91.22 | 57.48 | 53.49 | 53.35 | 55.55 | 54.94 | 51.24 | 60.42 | 55.63 | 50.28 |

sition periods. Activities were begun and finished on time with late arrivals or stragglers allowed to finish particular tasks by themselves as teachers and the majority of the students went on to the next planned activity. The less than maximum scores are an artifact of a checklist item related to planned parent activities within the classroom. Although the model suggests that participation of parents within the classroom should be planned for, local policy allowing only the admission of working parents into the program made the category irrelevant as such activities were never observed. The socialization of the children to the routine, which allowed them to change activities almost immediately on cue from an adult, is reflected in the midyear implementation scores. During this observation period, although new aides relatively unfamiliar with the model were hired in two of the classrooms, scores dipped only minimally and the dip was largely the result of adjustments made for inclement weather. To accommodate poor weather conditions, teachers generally omitted outside play during this time. The fluctuations in scores at the third observation period reflect the change in schedules as a result of a change in center policy which required aides to leave the classrooms at various times over the observation period to monitor bus rides on children's trips to the rehabilitation therapy centers.

b. Physical Setting

All of Site II's classrooms contained most of the learning centers specified by the AMANECER model such as art, dramatic play, discovery, music, manipulative area, library, blocks, and sand/water area. Note, however, that the implementation scores for this category average slightly over half of the maximum possible. The primary factor influencing the results was the size of the classrooms themselves. As previously mentioned, the classrooms at Site II were exceedingly small, averaging only about two thirds of the square footage found in the classrooms at Site I. In addition, 19 or 20 children were generally present in each room and movement was at times obstructed. As a result of the limited space, none of the rooms had a separate small group area, and with the exception of classroom A at the first observation, none had a woodworking area. Children's lack of interest and the difficulty in obtaining materials were cited by teachers as reasons for the area's removal. Although no area was specifically designated as a small group area, this activity was carried out in learning centers such as the library. Also, the relatively low overall scores do not reflect the fact that all centers need not be in use at all periods of the day for adequate use of the physical setting to be made. Often activities which involved all of the children occurred in one or two areas as in the case of the language groups. Thus a maximum implementation score for the physical setting did not result, although model directives were being followed.

Across the three classrooms, there was a gradual decline in this category from the first to the last observation period. This was largely

a result of the removal of particular learning centers either because of a lack of materials or their unpopularity with the children.

c. Instructional Materials

High implementation scores for this category mirror the fact that Site II's classrooms were well stocked with a variety of instructional materials. These included manipulative toys such as puzzles, legos, and blocks as well as art supplies and books. In each center, materials were placed on shelves that were easily accessible to small children. In addition, all of the rooms utilized various forms of multicultural materials, such as clothing typical of different ethnic groups prominently displayed. Musical instruments reflected a variety of cultures, and records included songs from different parts of the United States and Mexico. A factor contributing to lowered scores in this category is that the teaching staff neglected to label the materials in English and Spanish as suggested in the model. However, they did label the interest centers in both languages.

Fluctuations over time within classrooms, noted in Table 47, signal changing classroom arrangements in the use of wall decorations. The lack of children's art work used as wall displays served to lower ratings at the initial and midyear observations in classroom A, at the final time period for classroom B, and at midyear for classroom C.

d. Individual Behaviors

This category appears to be that in which the most difficulty in meeting model goals was encountered at AMANECER II, as it is the only category where less than half the possible points was achieved. The generally low scores in this category are largely a result of the absence of parental participation in the classroom, as called for by the model. As mentioned previously, lack of parent participation resulted from the stipulation that to be eligible for Head Start service, both parents had to be employed. This stipulation effectively precluded the possibility of volunteers and for the most part limited parental participation to the occasional donation of classroom materials. The slightly higher score for classroom C during the first observation period reflects the only observed participation of a parent in the classroom. Although present in the classroom, this individual contributed largely through the making of instructional materials.

The consistent trend to slightly lower scores in classroom B reflects the influence of the physical setting on individual behaviors. The small size of the classroom, which limited the size of each area such that it had space for a maximum of two to three children, eliminated group work by children during independent play and cut down on

adult-child interactions during that period. In addition, the teacher in this classroom was a quiet individual who at times did not seek out children but rather let them come to her.

Changes in teaching personnel appear to have had some effect on the instructor's interactions with the children. Preceding the second observation period, two new aides were hired as replacements for individuals leaving the program. Although the aides were introduced into the classrooms quickly and teachers were not left handling the classroom alone, a short period of adaptation to the AMANECER routine was needed by the newcomers and this adaptation is reflected in the scores at the second observation.

In addition, the model calls for a balanced use of languages by the teaching staff. However, in no classroom was such a balance found, and there was great variation in the ratio of English to Spanish usage by adults within the three classrooms over the course of the year. Although the individual who was the designated language model generally spoke more of a particular language, the patterns of teachers' language usage reflect the dominance of one adult within the classroom. Such was the situation with classrooms A and B, where more verbal utterances were consistently recorded for the teacher in the former case and the aide in the latter case. As is evident in Table 48, the dominance of one individual in verbal interactions usually brought about a predominance of one language over another. Classroom C varied from this pattern as in verbal interactions the predominance of one individual did not dictate the principal language of interaction except during the third observation period.

Language usage in both classrooms B and C shows an overall decline of English usage throughout the year. However, these classrooms differed in that where English remained dominant in classroom B, Spanish became dominant in classroom C. In each case the trend is a result of the teacher taking an increasingly active part in classroom interactions over the course of the year.

The mode of verbal responses used by teachers and aides was found to have a similar pattern for all three classrooms. In all of the rooms, there was a predominant usage of informational statements; these accounted for 41-46% of all utterances. The next most frequent type of interaction was the use of questioning by teachers and aides, comprising 25-32% of recorded utterances. A less frequent usage of commands and reinforcement was found in all classrooms, accounting in equal proportion for 10-16% of the total sample recorded.

All of the classrooms showed comparable trends in the use of verbal models. In each, statements gradually increased during the year at the expense of questions. By the latter half of the year, teachers appeared to be speaking more and eliciting responses from children through direct questioning less often. This was partly the result of

Table 48. AMANECER II classroom language production by teaching unit.

| CLASSROOM A INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 79 | 4 | 0 | 0 | 83 | 33 | 14 | 1 | 4 | 52 | 57 | 17 | 1 | 4 | 79 |
| Aide | 0 | 17 | 0 | 0 | 17 | 0 | 45 | 1 | 2 | 48 | 5 | 15 | 0 | 1 | 21 |
| TOTAL | 79 | 21 | 0 | 0 | 100 | 33 | 59 | 2 | 6 | 100 | 62 | 32 | 1 | 5 | 100 |

| CLASSROOM B INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 0 | 9 | 0 | 0 | 9 | 11 | 22 | 1 | 1 | 35 | 8 | 27 | 0 | 4 | 39 |
| Aide | 86 | 5 | 0 | 0 | 91 | 64 | 1 | 0 | 0 | 65 | 52 | 8 | [illegible] | 1 | 61 |
| TOTAL | 86 | 14 | 0 | 0 | 100 | 75 | 23 | 1 | 1 | 100 | 60 | 35 | 0 | 5 | 100 |

| CLASSROOM C INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 2 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 33 | 10 | 0 | 0 | 43 | 38 | 16 | 1 | 2 | 57 | 36 | 47 | 1 | 6 | 90 |
| Aide | 33 | 14 | 5 | 5 | 57 | 4 | 38 | 0 | 1 | 43 | 0 | 9 | 0 | 1 | 10 |
| TOTAL | 66 | 24 | 5 | 5 | 100 | 42 | 54 | 1 | 3 | 100 | 36 | 56 | 1 | 7 | 100 |

the late and infrequent training that was provided to the teaching staff.

e. Instructional Strategies

Teachers had great success in carrying out all of the instructional endeavors called for by the AMANECER model as shown by the consistently high scores achieved in this category. In an effort to maintain a workable situation in the limited space available to them, instructors created all of the learning experiences suggested in the model guidelines.

Two of the classrooms demonstrated close to maximum implementation scores at the beginning of the year and maximum scores at the midyear observation but lower scores at the end of the year. The main factor influencing the drop in score for classroom C was the cancellation of the daily circle time lesson, a change in schedule that brought about the omission of two model-suggested activities. With the substitution of independent play for circle time, there were no activities using the child's second language (English), nor were there adult-directed activities during the observations. The reason for the schedule change was the impossibility of conducting circle lessons because of the aide's absence from the classroom due to the morning bus rides with rehabilitation children. Outside of the English circle lesson, there was a preponderance of Spanish usage by this teacher and the majority of children in the room.

For classroom B the score declined because neither adult-directed activities nor activities involving the first and second language occurred during the third observation period. During former observation periods, the teacher and aide were observed interacting and directing children in individual activities. However, they did not engage in such behavior during the final observation.

Classroom A showed high initial and final scores in this category but experienced a midyear dip. The lower score indicates a lessening of adult-directed activities during independent play at that observation period because of the new aide's adaptation to her role in the classroom.

The following excerpt is from an evaluation researcher's fieldnotes. It illustrates various aspects of the implementation process of AMANECER II reflected in the preceding discussion.

The Spanish-preferring children are gathered in a circle around the teacher for second language development circle. The teacher holds a picture of a table with food and plates, but lacking a cup, and asks, "What is missing?" To cue the children to the proper response she turns the card over to show a picture of a cup. A chorus of voices chimes "taza" along with one child's response of "café." The teacher then attempts to give an additional hint in English: "With what do we drink it? Cup . . . What is here?" and points to the cup. When the group persists with "taza," the teacher finally indicates the desired response, "cup," which the children repeat. The teacher then reminds the children of why she insisted on the English word: "This is an English circle. Now I'm going to show you a picture. Who is it. Who is the lady?" She holds up a picture of a woman serving a drink to a little boy and girl. The children, picking up on the vocabulary word "lady," respond in unison, "lady." When the teacher asks, "What are they doing?" Sara answers, "boy," and the group repeats after her. The teacher then turns to another child, "Mason, what are they doing? ¿Qué están haciendo?" Mason replies appropriately, "Están tomando Koolaide," to which the teacher replies, "In English, Mason. They are drinking Koolaide." While Mason tries to repeat the English phrase, the children start to stir restlessly. The teacher closes the lesson with a suggestion: "I want you to talk English at home . . . Quiero que practiquen hablar inglés con sus hermanos." She then addresses a question to Amaranta: "¿Tu mamá habla inglés?" When the child nods affirmatively, the teacher advises, "Tienes que hablar con ella." The children listen as the teacher announces the next activity. "This is the end -- now we are going to make exercises in a big circle because it's too cold to play outside." Then they eagerly stand and move to the circle area.

In this example, the teacher at AMANECER II carried out the scheduled language adult-directed activity. The socialization of the children into the daily routine was evident from the teacher's closing line signaling the end of the lesson. As happened frequently, bad weather curtailed the usual "outdoor play" period. The lesson itself was conducted at a semiabstract level with the teacher employing appropriate pictures as instructional materials. The difficulty of maintaining the use of English only during second language development time, however, was painfully evident. The teacher adapted her language use to the limited second language abilities of the children only after

repeated questions and reformulations to help the children understand and respond appropriately in English. Although the children repeated isolated words in English, the content of the question was beyond their receptive ability.

5. The Comparison Groups

As previously mentioned, comparison group children consisted of two types: stay-at-home in Corpus Christi and a mixture of stay-at-home and preschool children at Laredo. The children at Corpus Christi, who like the experimental children were mainly English-preferring Hispanics, received health services for participating in the evaluation. They were not significantly different from the AMANECER children in terms of either age or sex.

All but nine of the AMANECER II comparison children attended Head Start centers structured much like the program of the experimental site. There were 15 to 20 children per classroom enrolled in six classrooms at three different Head Start sites. The programs ran from 8:00 A.M. to 3:00 P.M. or to 5:00 P.M.

The classrooms had a number of learning centers with a variety of materials. Teaching strategies varied from classroom to classroom, though most teachers tried to present concepts and language activities in rotating small groups. After group time, children engaged in free play until lunch. During this time the children wandered into the different centers with no particular projects in mind.

The curriculum used by comparison classrooms emphasized socialization to the classroom as well as acquisition of concepts. Socioemotional development was geared toward letting the child learn to share, to respect the rights of others, to respect classroom rules, to internalize the classroom routine, to cooperate, and to make decisions. Concept development aimed at developing analytic skills in classification, sequencing, and matching as well as skills in visual discrimination. Language lessons in small or large groups sought to develop the children's verbal ability.

C. Summary and Feasibility of Transfer

Both the test results and the classroom observations reflect the distinctive process of implementation at each AMANECER site. Although only quantitative data are available for Site II, the significant gains made by children in English Language Acquisition and the consistent gains made in English and Spanish Concept Development suggest that even in a predominantly Spanish-speaking environment with children who are close to Spanish monolinguals, systematic implementation of the AMANECER language activities can ensure second

language development.

Observational data from the AMANECER I classrooms showed that Spanish-preferring experimental children made a good deal of progress in their second language, especially in the areas of Language Acquisition and Concept Development. English-speaking children, while showing progress in their first language, had little need to develop their second language skills in the largely English language environment of the classroom.

The children at both sites showed increasing ability to carry out activities independently. This was a result of the experience with the horquilla, or clothespin, system of classroom management which developed school readiness skills.

Experimental and comparison parents at both sites were generally favorable toward bilingual education and had similar perceptions of the importance of education in general for their children. Reports of their children's language ability differed markedly, with respondents of both experimental and control groups at Corpus Christi perceiving their children to be English-preferring and those at Laredo reporting a Spanish preference for their children.

The classroom staff were generally favorable toward bilingual education and saw that it had advantages for both Spanish- and English-preferring children. They were positive toward the model, especially its classroom management aspect. The amount of paperwork, however, and infrequency of in-service training caused some staff dissatisfaction. All teachers were supportive of parental participation in the classroom and viewed bilingualism and bilingual education as important for its social value.

Both AMANECER replication sites were relatively successful in carrying out the directives of the model. There was, however, considerable variation in the pattern of implementation. Scheduling/organization and instructional materials were the two aspects of programming most easily implemented at the sites. Both sites were well provided with instructional materials. The majority of these beyond the normal preschool fare of blocks, puzzles, and art and crafts materials were furnished by the teachers. As the teachers and students generally shared the same cultural heritage (Mexican American Texans), the materials were culturally appropriate.

In the area of physical setting, size became an important variable in taking full advantage of the classroom. As shown by the situation at Site II, the lack of available space prevented the addition of new learning centers over the year and impeded the free movement of children during activities. Lack of space, however, was largely overcome through accustoming children to the use of the horquilla system and systematically carrying out activities in the sequence prescribed by AMANECER.

Problems of teacher turnover at both sites were at least temporarily detrimental to implementation, especially in the area of instructional strategies. All classrooms showed lower implementation scores at those periods when new instructors were adjusting to the routines and demands of the model. The experience of the two sites suggests, however, that such inexperience can be overcome with training workshops.

Teaching staffs at both sites exhibited a reliance on one language within the classroom. Site I teachers tended to speak more English with the children, whereas Site II teachers utilized Spanish in the same types of interactions. The tendency to use one language was related to the language ability of the children. The presence of an overwhelming number of Spanish-preferring children at Site II led teachers to employ Spanish in the majority of interactions. The same situation arose in Site I where the composition of the student sample included a large proportion of English-preferring preschoolers.

The isolation of the Head Start centers in relation to the general community combined with lack of adequate transportation contributed to low parental involvement in the classrooms. Parents, however, showed their support of the program in alternate ways by donating labor, food, or time at home to make materials.

## FOOTNOTES

1. The interactions are a result of the superior performance by female comparison children over their male counterparts.

2. At Site I similar trends were found. Experimental children with no demonstrated ability in English had average posttest gains over control children of: EMLU 2.4 vs. 1.4; PSIE 9 vs. 3. For children with some ability in English as measured by pretest scores, comparisons were as follows: EMLU 2.5 vs. .9; ECOMP 7.1 vs. 5.3; PSIE 9.9 vs. 9.2.

3. This is further reflected in the rank order correlations between test performance on the measure of language acquisition and classroom behaviors in that area, which were higher for English (.86) than for Spanish (.69), (Appendix W ).

4. While there was a high correlation between test results and observed classroom behavior related to English comprehension, there appears to be little relationship between those Spanish comprehension behaviors observed in the classroom and those sampled by the tests (see Appendix W for correlation coefficients).

5. The lack of practice in Spanish concept development by the end of the preschool year is reflected in the differences in the correlations of test results and classroom observations between English (.96) and Spanish (.02) concept development.

6. Teachers and aides at Site I received a site visit from the model developers in September of the evaluation year during which the goals of the model were reviewed and they obtained AMANECER materials. This was followed up with a one-day workshop in November, a materials workshop in December, and a two-day training workshop for the new teachers in January. Those at Site II received only one two-day training workshop on parent participation in February, 1970.

# VI

## TEACHERS COLLEGE: ALERTA

The ALERTA curriculum model was developed by the staff of Teachers College, Columbia University. This model is based on the assumption that a child's learning capacities develop in an orderly and sequential manner as the child engages in more complex ways of thinking, feeling, and acting. As the total environment is central to the learning process, the home, family, and community are incorporated into the learning context. Parents are strongly encouraged to participate in the child's preschool through materials development and/or as volunteers. Bilingual development is achieved through planned, teacher-directed activities. Teacher language patterns are such that children are encouraged to associate one language with a single instructor.

This chapter presents the results of the evaluation of the ALERTA curriculum model. The chapter is divided into three sections. The first section provides the findings related to the impact of the model on children, parents, and teachers over the Head Start year. The second section deals with the implementation of the model at the two evaluation sites. The third section summarizes and integrates the impact and implementation findings.

### A. Impact of the Model

The focus of this section is on the outcomes of participation in the ALERTA model. Child outcomes include a discussion of the characteristics of the sample and the results of both standardized tests and classroom observations. This is followed by a discussion of parent outcomes. The findings for teachers conclude this section.

#### 1. Child Outcomes

##### a. Child Sample

The two ALERTA sites were located in New York City. Site I, where 25 experimental group children experienced the ALERTA curriculum model, was in the South Bronx. At Site II in the lower East Side, the experimental group was composed of 15 children. A high transiency rate, recruitment, and administrative problems, combined with the presence of a large number of control children on the Head Start waiting list, reduced the control groups at the South Bronx and Lower East Side

sites to eight and four, respectively. Consequently, the test results of the experimental children at the two ALERTA sites are presented in terms of descriptive statistics.

Site I children were predominantly Hispanic (16); all but one of the remaining children were Black. Sixteen of the experimental children were English preferring. There were 17 females and 12 males in the experimental group.

The Site II experimental sample was also predominantly Hispanic (9) with Blacks (6) comprising the rest of the experimental group. There was a similar distribution of males (7) and females (8) in the experimental group. The majority (12) of the experimental children was English preferring.

b. Test Results

(1) Spanish-preferring Children. The results presented here cannot be interpreted in the same way as those presented for the other models. They do, however, tend to reflect the ALERTA model's emphasis on developing the English skills of Spanish-preferring children. At both sites, Spanish-preferring experimental children improved their test scores on all English measures at posttest (See Table 49). Children at ALERTA I also improved their performance on all of the posttest measures in Spanish. Site II children increased their test scores on six of the seven Spanish measures.[1] An examination of Spanish-preferring children by entry-level ability suggests a trend consistent with the classroom observations and similar to that found for other experimental programs. Experimental children at Site I who entered the program with no demonstrated ability in English showed far greater mean gains in English than comparison children ($EMLU_{\bar{x}}$ = 3.1 vs. 0; $ECOMP_{\bar{x}}$ = 7.0 vs. 0; $PSIE_{\bar{x}}$ = 16.0 vs. 0). Experimental children at both sites with demonstrated ability at pretest performed similarly to comparison children ($EMLU_{\bar{x}}$ = 3.9 vs. 3.6; $ECOMP_{\bar{x}}$ = 9.4 vs. 6.5; $PSIE_{\bar{x}}$ = 14.5 vs. 15.3) with the greatest mean difference in the area of English comprehension.

(2) English-preferring Children. English-preferring experimental children at Site I made posttest gains on all seven English language measures (see Table 50). At Site II, English-preferring children improved their performance on three of the seven English measures. English-preferring experimental children at both sites improved their performance on all posttest Spanish measures.[2]

c. Classroom Observations

Site I was selected by the ALERTA curriculum developers as most representative of their model. The subsample grouping at this site selected for intensive observation at three points in time over the

Table 49. ALERTA mean scores on six constructs at pre and posttest for Spanish-preferring experimental children.

ALERTA I

| | N | (Pre) X | (Pre) SD | (Post) X | (Post) SD |
|---|---|---|---|---|---|
| 1. Language Acquisition-Bilingual Syntax Measure | | | | | |
| Spanish Mean Length of Utterance | 7 | 3.77 | .97 | 4.29 | .64 |
| English Mean Length of Utterance | 7 | 1.26 | 1.05 | 3.46 | 1.45 |
| 2. Language Comprehension- Receptive Vocabulary (Listen to the Story) | | | | | |
| Spanish | 7 | 7.86 | 3.80 | 9.29 | 2.69 |
| English | 6 | 6.00 | 4.43 | 8.83 | 3.13 |
| 3. Language Production- Picture Tu | | | | | |
| Quantity of Spanish Words | 6 | 32.67 | 29.32 | 38.67 | 45.50 |
| Object Description Scale | 6 | 2.83 | 1.83 | 5.00 | 2.66 |
| Narration Description Scale | 5 | 9.00 | 5.86 | 11.20 | 7.79 |
| 4. Concept Development-Preschool Inventory | | | | | |
| Spanish | 7 | 13.86 | 6.26 | 17.57 | 5.02 |
| English | 7 | 7.57 | 7.82 | 16.57 | 3.60 |
| 5. Perceptual Motor Development | | | | | |
| Spanish Scale | 7 | 3.29 | 1.25 | 4.00 | 0.00 |
| English Scale | 7 | 1.29 | 1.70 | 3.86 | .38 |
| 6. Sociemotional Behavior-Teacher Checklist | | | | | |
| Sociemotional Functioning | 7 | 19.14 | 3.39 | 24.14 | 1.57 |

ALERTA II

| | N | (Pre) X | (Pre) SD | (Post) X | (Post) X |
|---|---|---|---|---|---|
| 1. Language Acquisition-Bilingual Syntax Measure | | | | | |
| Spanish Mean Length of Utterance | 4 | 4.05 | .04 | 4.30 | .36 |
| English Mean Length of Utterance | 4 | 1.47 | .03 | 3.87 | 1.56 |
| 2. Language Comprehension- Receptive Vocabulary (Listen to the Story) | | | | | |
| Spanish | 4 | 5.75 | 1.26 | 8.25 | 3.09 |
| English | 4 | 5.25 | .50 | 9.00 | 1.41 |
| 3. Language Production- Picture Tu | | | | | |
| Quantity of Spanish Words | 2 | 52.50 | 20.51 | 25.50 | 16.26 |
| Object Description Scale | 3 | 2.33 | .58 | 5.67 | 1.15 |
| Narration Description Scale | 3 | 12.00 | 6.56 | 10.33 | 5.77 |
| 4. Concept Development-Preschool Inventory | | | | | |
| Spanish | 4 | 8.75 | 1.50 | 10.25 | 2.99 |
| English | 4 | 8.50 | 4.36 | 12.00 | 4.24 |
| 5. Perceptual Motor Development | | | | | |
| Spanish Scale | 4 | 3.75 | .50 | 3.75 | .96 |
| English Scale | 4 | 3.75 | .96 | 4.00 | 0.00 |
| 6. Sociemotional Behavior-Teacher Checklist | | | | | |
| Sociemotional Functioning | 4 | 20.75 | 1.50 | 21.25 | 1.71 |

Table 50. ALERTA mean scores on six constructs at pre and posttest for English-preferring experimental children.

ALERTA I

| | n | (Pre) X | (Pre) SD | (Post) X | (Post) SD |
|---|---|---|---|---|---|
| 1. Language Acquisition-Bilingual Syntax Battery | | | | | |
| Spanish Mean Length of Utterance | 16 | .81 | 1.46 | .90 | 2.36 |
| English Mean Length of Utterance | 16 | 2.79 | 1.51 | 4.19 | 1.87 |
| 2. Language Comprehension- Receptive Vocabulary - Peabody Picture Vocabulary Test | | | | | |
| Spanish | 16 | 4.31 | 4.21 | 5.69 | 3.79 |
| English | 16 | 7.69 | 3.88 | 8.56 | 2.84 |
| 3. Language Production- You Say It | | | | | |
| Quantity of English Words | 16 | 33.13 | 22.38 | 43.69 | 26.86 |
| Object Description Scale | 16 | 2.64 | 1.38 | 3.56 | 1.87 |
| Narration Description Scale | 16 | 7.79 | 4.77 | 10.44 | 5.66 |
| 4. Concept Development-Preschool Inventory | | | | | |
| Spanish | 17 | 3.94 | 6.89 | 6.59 | 7.69 |
| English | 17 | 13.65 | 5.39 | 16.47 | 3.59 |
| 5. Perceptual Motor Development | | | | | |
| Spanish Scale | 17 | 1.18 | 1.78 | 1.53 | 1.91 |
| English Scale | 17 | 3.35 | .93 | 4.00 | 0.00 |
| 6. Socioemotional Behavior-Teacher Checklist | | | | | |
| Socioemotional Functioning | 16 | 18.13 | 2.33 | 18.88 | 2.37 |

ALERTA II

| | n | (Pre) X | (Pre) SD | (Post) X | (Post) SD |
|---|---|---|---|---|---|
| 1. Language Acquisition-Bilingual Syntax Battery | | | | | |
| Spanish Mean Length of Utterance | 11 | .38 | 1.30 | .46 | 1.91 |
| English Mean Length of Utterance | 11 | 4.29 | .77 | 5.02 | .89 |
| 2. Language Comprehension- Receptive Vocabulary - Peabody Picture Vocabulary Test | | | | | |
| Spanish | 10 | 3.10 | 2.85 | 5.80 | 5.99 |
| English | 11 | 6.00 | 1.89 | 7.00 | 2.68 |
| 3. Language Production- You Say It | | | | | |
| Quantity of English Words | 10 | 40.00 | 28.21 | 54.00 | 37.38 |
| Object Description Scale | 11 | 3.18 | 1.60 | 3.36 | 1.80 |
| Narration Description Scale | 10 | 10.40 | 3.66 | 0.50 | 5.66 |
| 4. Concept Development-Preschool Inventory | | | | | |
| Spanish | 11 | 2.27 | 3.88 | 5.27 | 5.92 |
| English | 11 | 12.64 | 4.86 | 16.73 | 2.87 |
| 5. Perceptual Motor Development | | | | | |
| Spanish Scale | 11 | .91 | 1.64 | 1.09 | 1.45 |
| English Scale | 11 | 3.82 | .60 | 3.73 | .47 |
| 6. Socioemotional Behavior-Teacher Checklist | | | | | |
| Socioemotional Functioning | 11 | 18.82 | 1.94 | 19.30 | 2.79 |

evaluation year, was comprised of nine (9) Hispanics, five (5) Blacks, and one (1) Filipino. Language preference was fairly equally divided between eight (8) English-preferring and six (6) Spanish-preferring children. Patterns of the subsample children's observed behavior in the areas of language production, concept development, and socioemotional functioning generally support the test findings.

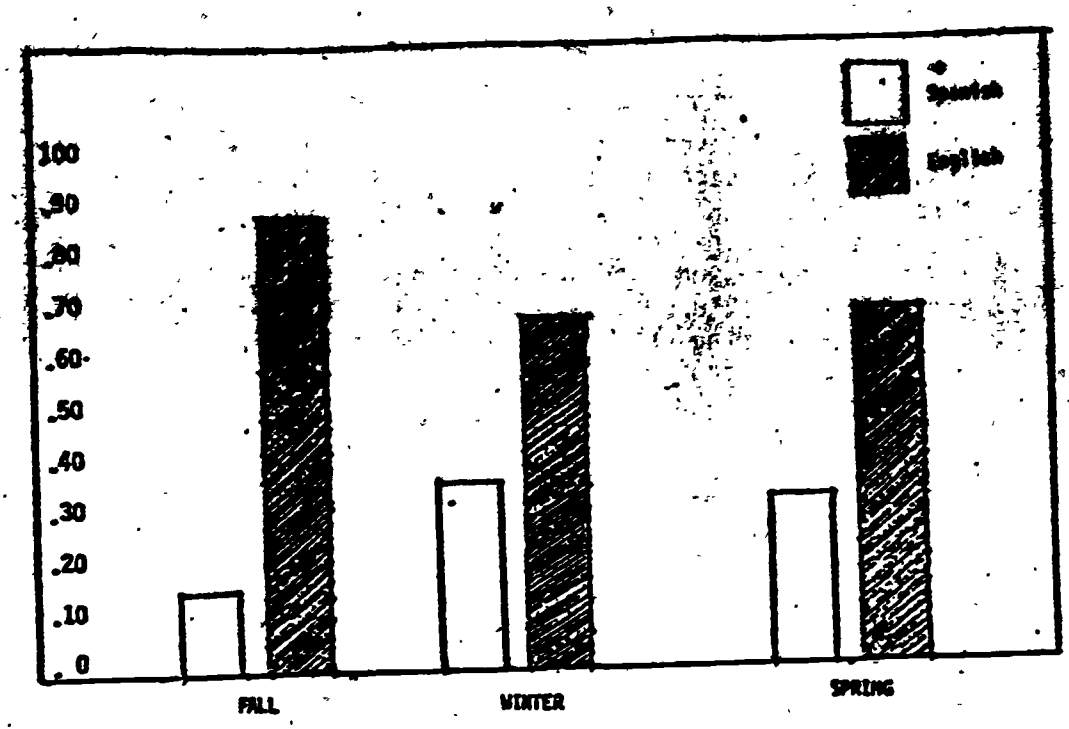
(1) Language Usage. The overall language use for the children of each language preference as a group is presented in Figure 6. As can be seen, even early in the year much of the Spanish-preferring children's language practice in the largely English language environments of the ALERTA classrooms was in their second language. The increasing tendency of these children to use their first language as the year progressed corresponds to an increased emphasis on Spanish by the teachers, especially during the midyear observation period. English-preferring children, on the other hand, received little practice with Spanish. Over 90% of their verbal interactions at any observation period were in English.

An examination of the individual experiences of the Spanish-preferring subsample children (Table 51) shows that practice in English during the initial observation period was limited to four of the subsample children. Of these children, the three who spoke entirely in English during the initial observation period -- Judith, Shirley, and Veronica -- had some verbal ability in English, and their comprehension of that language was near that of their English-preferring classmates (as measured by pretest scores) on entering school. A fourth Spanish-preferring child, Alicia, demonstrated an understanding of her second language similar to that of the other three children but was unable to produce the minimum of three utterances in English required to calculate an MLU at the pretest. In the classroom, however, this gregarious child was regularly observed speaking English, although she continued to prefer Spanish for ner verbal interactions throughout the year.

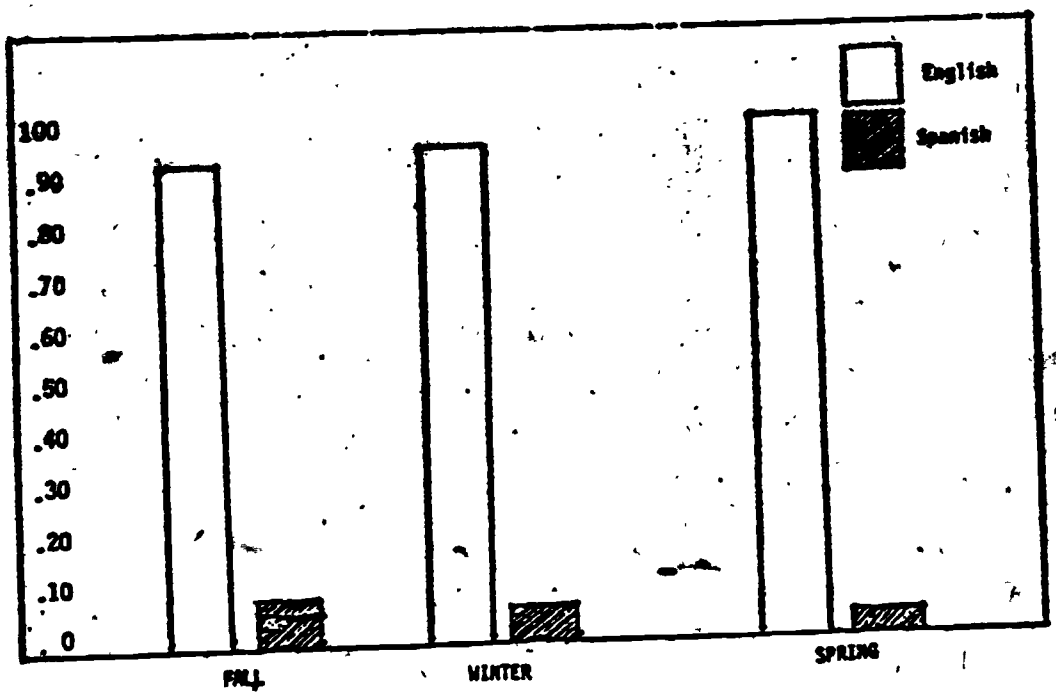
The final two Spanish-preferring children -- Francisco and Maria -- were not observed to use either language during the first observation period. Both children were somewhat shy early in the year. Maria had entered preschool slightly after the year began and appeared to need some time to accustom herself to the classroom, after which she became quite verbal. Francisco remained rather withdrawn throughout the year. Neither child demonstrated verbal ability in his and her second language, although Maria exhibited some understanding of English at the pretest.

The direct verbal input received by the children (Table 52) is reflected in their language use patterns over the preschool year. Shirley and Judith, the children who maintained the highest levels of English use throughout the year,[3] were addressed almost entirely in English by both their teachers and peers. Veronica, the only subsample child to show consistent increases in her use of Spanish over the year,

Figure 6. Classroom observations of child language use were obtained for a subsample of Spanish-preferring and English-preferring children during Fall, Winter, and Spring. The figure below shows the proportion of Spanish and English in ALERTA subsample children's language use over time.




Spanish-preferring children




English-preferring children

Table 51. Relative frequency of observed usage of Spanish and English by individual subsample children over three points in time: Alerta.

| | SPANISH | | | ENGLISH | | | LANGUAGE MIXING[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | I | II | III | I | II | III | I | II | III |
| | % | % | % | % | % | % | % | % | % |
| **Spanish-Preferring** | | | | | | | | | |
| Francisco | ND[3] | 100 | 63 | ND | 0 | 35 | ND | 0 | 2 |
| Alicia | 57 | 77 | 59 | 43 | 17 | 38 | 8 | 8 | 3 |
| Maria | ND | 26 | 20 | ND | 74 | 80 | ND | 0 | 0 |
| Judith | 0 | 23 | 1 | 100 | 63 | 98 | 0 | 14 | 1 |
| Veronica | 0 | 5 | 36 | 100 | 90 | 63 | 0 | 8 | 1 |
| Shirley | 0 | 0 | 0 | 100 | 100 | 99 | 0 | 0 | 1 |
| | % | % | % | % | % | % | % | % | % |
| **English-Preferring** | | | | | | | | | |
| Kum'jani | 0 | 0 | 0 | 100 | 100 | 100 | 0 | 0 | 0 |
| Kurt | ND | 0 | 0 | ND | 97 | 99 | ND | 3 | 1 |
| Wanda | 0 | 0 | 2 | 100 | 100 | 98 | 0 | 0 | 0 |
| Donald | 0 | 0 | 3 | 100 | 100 | 97 | 0 | 0 | 0 |
| Elizabeth | 0 | 0 | 5 | 100 | 100 | 95 | 0 | 0 | 0 |
| Harold | 17 | 0 | 1 | 83 | 100 | 99 | 0 | 0 | 0 |
| Jaime | 0 | 3 | 6 | 100 | 97 | 94 | 0 | 0 | 0 |
| Judy | 24 | 22 | 6 | 76 | 75 | 93 | 0 | 3 | 1 |

[1] Percentage totals may not equal 100% due to rounding.

[2] Indicates switching of languages within a single sentence or phrase (e.g. Yo doy un yellow).

[3] ND = not observed

Table 52. Proportion of observed Spanish and English input directed to individual subsample children by teachers and peers over three points in time: ALBERTA

| CHILD'S NAME | | Francine | | Alicia | | Marie | | Judith | | Veronica | | Shirley | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. |
| TIME ONE | TEACHER | 0 | 0 | 60 | 20 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 100 |
| | PEER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | OVERALL | 0 | 0 | 60 | 20 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 100 |
| TIME TWO | TEACHER | 50 | 50 | 0 | 0 | 50 | 50 | 29 | 71 | 60 | 20 | 0 | 100 |
| | PEER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 |
| | OVERALL | 50 | 50 | 0 | 0 | 50 | 50 | 22 | 89 | 60 | 20 | 0 | 100 |
| TIME THREE | TEACHER | 45 | 55 | 67 | 33 | 50 | 50 | 29 | 71 | 78 | 22 | 0 | 100 |
| | PEER | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 100 |
| | OVERALL | 44 | 56 | 25 | 75 | 50 | 50 | 22 | 89 | 86 | 14 | 0 | 100 |

| CHILD'S NAME | | Ann Jane | | Mary | | Wendy | | Sandra | | Elizabeth | | Sylvia | | Helen | | Judy | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. |
| TIME ONE | TEACHER | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 20 | 80 |
| | PEER | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | OVERALL | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 20 | 80 |
| TIME TWO | TEACHER | 11 | 89 | 0 | 100 | 33 | 67 | 0 | 100 | 29 | 57 | 43 | 57 | 11 | 89 | 0 | 100 |
| | PEER | 0 | 100 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | OVERALL | 0 | 89 | 0 | 100 | 33 | 67 | 0 | 100 | 29 | 57 | 43 | 57 | 11 | 89 | 0 | 100 |
| TIME THREE | TEACHER | 0 | 100 | 0 | 100 | 17 | 83 | 0 | 100 | 0 | 67 | 0 | 86 | 0 | 100 | 0 | 0 |
| | PEER | 0 | 100 | 0 | 0 | 0 | 0 | 29 | 57 | 50 | 50 | 17 | 83 | 100 | 0 | 33 | 100 |
| | OVERALL | 0 | 100 | 0 | 100 | 17 | 83 | 17 | 83 | 38 | 63 | 22 | 78 | 33 | 67 | 33 | 100 |

Percentage totals may not equal 100% due to rounding.

was also the only Spanish-preferring child who received direct input from both teachers and peers primarily in Spanish. Maria, whose use of English increased at each observation period, was observed to receive input primarily in Spanish during initial observations. Subsequently, her teachers addressed her equally in Spanish and English and, when peer input was observed, it was entirely in English. Francisco, who also increased his English usage by the final observation period, received input from teachers in both Spanish and English during his infrequent direct classroom interactions. Alicia's input from teachers remained primarily in Spanish as did her own utterances. She was, however, observed to receive input from peers only in English at the end of the year.

As might be expected, given the amount of English used by the Spanish-preferring subsample children, their practice with English grammatical forms increased over the year (see Appendix R). All of the children practiced a greater variety of forms and by the end of the year those three children who had exhibited the most ability in English on entering school were afforded the opportunity to practice all the linguistic competences listed as cross-model objectives. The most general patterns were in the use of the negative form, where all children increased their practice, and use of the future tense, where all but Francisco showed gains. The use of incomplete sentences also increased for four of the six children as practice in English often came as the result of a short answer to a structured drill. All children were observed to use more grammatically incorrect structures as they experimented with their second language. Functionally, although the majority of all children's practice was in the area of verbal instruction throughout the year, five of the six children diversified their experience.

Despite the large amount of English used by the Spanish-preferring subsample, these children also demonstrated greater linguistic competence in their preferred language. All of the children increased the diversity of the competencies practiced. As in the second language, incomplete sentences increased for all but one of the children and all but one had relatively more practice with the interrogative as the year progressed. Those receiving the most general practice were the three children who continued to speak the greatest proportion of Spanish at each observation. As in English, the functional competencies practiced by the children were largely limited to the area of verbal instruction.

The English-preferring subsample children appeared to have had similar experiences in the ALERTA I classrooms over the preschool year. Only one child, Jody, was observed to use her second language with any consistency over the three observation periods and even her usage decreased. Both she and Jaime, who also exhibited a slight tendency to use Spanish, were the only children to have measurable productive ability at the pretest. The other six English-preferring subsample children's (Kurt, Wanda, Kunjani, Donald, Elizabeth, and

Harold) use of Spanish was largely confined to structured Spanish lessons in which isolated lexical items in the second language were practiced.

Direct input from teachers and peers to individual children generally paralleled the children's language use. Children who never used Spanish (Kunjani and Kurt) were also never observed to be spoken to individually in that language (Table 52 ). Other children who increased their use of Spanish were addressed more often in Spanish over the year than they had been at the initial observation period. Jody, who decreased her Spanish use, received input entirely in English after the first observation, whereas Harold was seldom observed receiving input during early observations.

The English-preferring children's use of Spanish was principally in the form of incomplete sentences. Grammatically incorrect utterances were also common in those few instances when the children used Spanish. One child, Jody, showed more diverse practice with Spanish grammatical forms. This practice occurred primarily at the second observation period when the child increased her use of complete sentences, the present tense, and the interrogative form (Appendix O ). Similarly, practice with functional competencies was largely limited to this child and occurred only in the area of providing verbal instruction.

In their preferred language all but one English-preferring child were observed to use more diverse grammatical forms as the year progressed. The most general patterns were the use of the negative form where seven out of eight children showed relative increases and use of the interrogative form and the future tense where six of the eight children increased their practice. As with the Spanish-preferring children, most of the practice observed in the area of functional competence was in the category of verbal instruction. Five of the eight children did, however, exhibit a slight tendency to diversify their practice in this area.

Patterns of observed behavior related to language comprehension and recall for children of both language preferences were similar to those observed for language use in general. The children's practice was principally in recalling or providing details about the classroom or home (Appendix Q ). The observations of children identifying common sounds or spoken phrases with pictures reflects the use of songs and rhymes in both Spanish and English at this site. While the practice of the English-preferring children was almost completely in their preferred language, the three Spanish-preferring children who generally spoke English in the classroom had most of their practice in their second language.

The greatest amount of language production for both English- and Spanish-preferring subsample children occurred, as would be expected, during small group activities. This is consistent with

the implementation data which show that teachers at Site I carried out structured language activities aimed at providing children with an opportunity to expand their language, especially English. The following examples taken from the observations of two subsample children over the year illustrate how the general trends reported above are reflected in the experiences of individual children.

• Maria, a rather small "canela"-complexioned girl with long wavy hair, was described as being one of the more intelligent children at this ALERTA site. Although at the beginning of the year she exhibited a reluctance to relate to her classmates, by midyear the teachers had successfully drawn her into greater classroom participation. Maria was a Spanish-preferring child who exhibited some understanding of English but no productive ability in English at the pretest.

Maria was typical of many of the Spanish-preferring children in the ALERTA program model, however, as her interaction throughout the year was primarily in English. This reflected on her posttest scores where she scored slightly higher on the comprehension and production measures in her second language than she did in her first. The following speech sample is taken from an exchange with her teacher when she was engaged in one of her favorite activities -- putting together puzzles by herself in the manipulative toy area.

Maria : This is the father and this is the mother.
(Pointing to a puzzle of the Three Bears.)
This is cabeza, the mano.
(Correctly identifying the animal's body parts.)
Ese, yo lo sé poner. This mine. This go over there, not over there. This for the mother, this for the father.

Teacher: What is this?
(Pointing to the animal's trousers and shoes.)

Maria : El pantalón y los zapatos . . .
This is the mother clothes, this over there. I did it, I did it, Mrs.
(Upon successfully positioning the piece in the puzzle and then placing more pieces.)
This over there, too. This for the nenito.
(Finishing with the Three Bears puzzle, she goes to the cupboard for still another puzzle.)

let me find more puzzle -- another puzzle.
(Returns with a puzzle featuring people in many occupations.)
This face go over there. I found the face.
(After fetching still another puzzle, the teacher asks in English for the names of the figures. Pointing to them she correctly identifies the following:)
Pe-ca-o (Pescado), a cat, apple, silla rocon . . . this go click.
(When the teacher asks what it is, she correctly answers:)
Clock.
(She continues with the identification:)
A gato es cat . . . y casa es house . . . pe-ca-o es fish.

Maria's English exhibited many of the typical characteristics of Spanish speakers at an early age of English second language development. She still had not mastered the copula and third person "-s" morphemes and thus produced such grammatically imperfect utterances as "This for the father" and "This face go over there." Similarly, she had not yet acquired the possessive "-s" form, referring to "mother clothes" and "This for the nenito." Although still in the process of mastering some of the more basic English morphemes, she successfully utilized the past tense of two irregular verbs "did" and "found." In spite of the general grammatical incorrectness of her speech, she ably communicated her meaning by supplementing her second language with movements such as pointing and use of her first language in a form of language-switching to substitute for unknown lexical items. In her first language she spoke in complete sentences, except when merely responding to the teacher's questions, used the copula, and successfully pluralized nouns ("los zapatos").

At this point, Maria tended to make most of her identifications in her preferred language -- e.g., "This is cabeza and mano," although she knew a number of common lexical items for animals, foods, and family, as well as the more difficult English concept of the noise produced by a clock. Also, the teacher, requesting information limited to basic visual discrimination, asked WH questions in English so as to encourage Maria's use of her second language. Finally, the speech sample also provides evidence of Maria's metalinguistic awareness of the distinction between the two languages, as she pointed out "a gato es cat . . . y casa es house."

By the end of the year, Maria appeared to make some use of her preferred language in the classroom, while maintaining her communicative competence in English (speaking English 80% of the time). The following language sample was taken from a lesson on identification of animals.

Teacher: León.
(Showing a picture of a lion and modeling.)
Maria : León.
Teacher: (Showing a picture of a giraffe.)
Maria : Giraffe.
Teacher: En español.
Maria : (No response.)
Teacher: Girafa.
Maria : Girafa.
Teacher: (Asks if one could have a giraffe in the house.)
Maria : (Shakes head.)
Teacher: Why?
Maria : E(s) muy grande. Mi prima tiene un perro y tumbó la cosa de la estufa.
Teacher: (Asks if you could have a gorilla in the house.)
Maria : Porque rompe la casa.
(Group activity ends and Maria goes to the manipulative toy area where she pulls out a puzzle with giraffes.)
Maria : Look, Miss____, giraffes.
Teacher: ¿De qué color?
Maria : Yellow, blanco, green.
Teacher: (Reviews colors in Spanish.)

Unlike the beginning of the year, the teacher was now eliciting information in Spanish, as evidenced by her more frequent questions in that language (en español, ¿De qué color?). When the teacher asked a WH-Why question in English, involving a more complex verbal response than a simple yes/no question of What-identification, Maria responded in Spanish with the reason and spontaneously recalled a happening in the home correctly using the past tense in her preferred language. Certain concepts, however, such as those of colors, seem to be internalized in her second language, as witnessed by her response primarily in English to the teacher's question about colors. She may have resorted to Spanish to meet more cognitively complex demands, maintaining her English for concrete classroom needs.

Francisco was a Spanish-preferring child who exhibited no receptive or productive abilities in his second language on the pretest measures. His light brown complexion matched the color of his

eyes. As mentioned, Francisco was shy, withdrawn, and reluctant to speak at the beginning of the year. He was slow in socializing to the classroom environment and only took part in classroom activiti under duress, as shown by the following classroom excerpt:

> All the children are gathered around Mrs. ____ as she discusses the different vegetables they will be drawing later that day. Francisco sits in the rug area playing with blocks. He does not appear to be listening to the teacher even though she's speaking Spanish (his preferred language). Moving to a corner, he kneels and touches the heater. Still kneeling he looks around the room to observe the classroom activity without speaking. The other teacher walks over to him and takes him by the arm in order to bring him back to the group where Mrs. ____ is now weighing the vegetables. He sits with the group but says nothing.

By midyear the child began to take part in some classroom activities. Francisco still seemed reluctant to speak but would seek out Spanish-preferring playmates and at times use his preferred language spontaneously with both peers and his teachers. In the instance presented below, Francisco uses both the past tense and interrogative form correctly in his preferred language. His speech, however, is still somewhat egocentric in that he fails to wait for a response to his question, and instead answers it himself. Francisco and several classmates are busily making puppets from brown paper bags, construction paper, and bits of plastic and string.

> Francisco: (Pointing to Judy's puppet, he says excitedly:)
> Mira que hizo. Mira que hizo.
> (Grasping the bag and a piece of construction paper, he asks the aide:)
> ¿A dónde le pongo e'to?
> (Without waiting for her answer, he remarks to no one in particular:)
> Le voy pegar e'to.

By the end of the school year, the child exhibited sufficient English mastery to be able to interact with his English-preferring classmates. Francisco and Harold each take a wooden vehicle from the shelf.

> Francisco: (Holding a toy gasoline pump which is sitting on the rug area and pretending to fill the car.)

Gasoline, no take that car, gasoline.
(Indicating he wanted Harold to play with him he continues:)
Take this, all right, come on . . .
want gasoline?
(Pretending to pour gas from the hose into the car he makes a "sshing" noise.)
Le voy dar gasolina.
(Harold accidentally runs his car over Francisco's hand.)

Francisco: Ouch, I tell my mother.
Harold : (Harold apologizes and Francisco smiles.)
Francisco: All right.

In contrast to his isolation and silence at the beginning of the year, Francisco communicated effectively in English with his playmates. The form of his new second language was not always grammatical. Francisco had not yet acquired the difficult auxiliary "do," as evident from his command "no take that car" and his question "want gasoline?". He also substituted the simplified form, "I tell my mother," to express the future ("I'm gonna tell" or "I will tell"). His playmate, however, understood Francisco's warning as he proceeded to apologize. Unlike his behavior at the beginning of the year, Francisco appeared to be more aware of the speakers around him as he listened to the apology and then acknowledged "all right." Francisco reverted spontaneously to his preferred language when talking to himself as he played the role of gasoline attendant in filling his toy car with gas. Thus, by the end of the year Francisco could call on his second language when communicative needs of the situation demanded. In the test situation at the end of the year, however, he failed to exhibit this productive ability.

The following speech samples illustrate the general experience of the English-preferring children at ALERTA I.

• Harold, a small boy who always wore his long wavy hair in two braids, following the custom of his native West Indian country, was an enthusiastic and avid student. He was a very verbal English-preferring child who exhibited no productive ability in Spanish at the pretest.

Harold was always attentive during his small group, language-focused session and early in the year was observed eagerly repeating Spanish after the teacher during a lesson on the identification of vegetables. The teacher described the sweet potato in Spanish and Harold repeated after her, "Batata, duro, batata, comida." Amused by the shape of the vegetable she held up next, he exclaimed, "Let me feel it!" He then dutifully repeated after the teacher, "Yautía, flame."

His use of Spanish, however, was limited to the modeling of teachers during the second language-oriented activities, as he spoke totally in English to his peers, having been observed showing off to his classmate, "I got a necklace. This is for Mommy." Even at the beginning of the year he exhibited a special enthusiasm for counting in English, frequently volunteering and successfully identifying the correct sequence of 11 beads on his necklace.

By midyear, Harold's still-developing English was evident in the language sample below in which he used language and nonverbal communication to enact fantasy play with plastic pieces which he attached to form an imaginary train:

Harold : I finish, we finish, now let's go . . .
All aboard now. No I under the mountain. Don't miss me . . . see you later . . . have a good time.
Frankie: Come here.
Harold : I'm under here.
Frankie: (Knocks off some plastic pieces from Harold's string.)
Harold : Why you doing that? I step on something under here. Will you help me? There he is. He's after us again. He coming after me.
Frankie: (Makes noises like a motor.)
Harold : (Moving his string of plastic pieces in the air and repeating:)
I'm flying . . . I'm flying . . .
You miss me? I better get off the bridge.

Grammatically, his speech exhibited characteristics of Black English, the use of which is not discouraged by ALERTA, with the variable dropping of the "be" form in "he coming after me" and "I under the mountain." He failed, however, to use the past tense in seemingly obligatory contexts -- "I step on something under"; "I finish." Even so, the meaning of his utterances were clear as he successfully made requests, described his actions, and expressed spatial relationships.

At the end of the year, Harold continued to maintain his interest in the learning of a new second language, still repeating isolated lexical items during language-focused activities. He was observed imitating the Spanish of his peers, repeating the semi-correct marte for Tuesday after a Spanish-speaking classmate. Although his Spanish was still very limited, he could engage in one of his favorite activities -- counting -- in Spanish.

His English continued to maintain features of dialectical English, but he now used more varied tenses, as exhibited in this sample of his speech taken while working on a puzzle with an English-speaking companion:

Harold: Me too, hurry, Janie! Who don't got time? I finishing. I did it!
(Upon successfully completing the puzzle:)
We did it! We did it!
(Reacting to the teacher's announcement of an excursion to the park:)
Let's go, let's go . . . , Janie, wanna be my partner only this week? Then you could be Ralph's partner.

Harold made appropriate use of the past tense in his native language and even expressed the conditional state, "Then you could be Ralph's partner." Harold's language development was typical of that of many monolingual English speakers in the ALERTA model who exhibited an expanding complexity and linguistic repertoire in their first language, while gaining a limited lexicon in their second language.

(2) Concept Development. The ALERTA model aims at developing various problem-solving strategies and abilities to make statements about the world and at developing greater linguistic competence. As with language use there was a tendency on the part of teachers to provide the children with experiences relating to concept development in English throughout the year. Practice with concepts occurred most often during teacher-directed activities such as those which took place in the small group sessions, but concept development was also incorporated into most of the daily activities.[4]

The trends observed in the subsample children's concept development were consistent with those observed in individual language use. Although little behavior related to concept development was observed during the first observation, over the course of the year two of the six Spanish-preferring subsample children were observed using only English with concepts while two others increased their relative use of that language in the area of concept development (Table 53). The two children who did not increase their English usage were those who tended to use Spanish throughout the year. Four of the children had most of their practice with concepts in their first language at the second observation period. This is consistent with the teachers' emphasis on Spanish in the classroom at that time. English-preferring subsample children received practice in concepts largely in English and/or nonlanguage-specific activities. Reflective of the teachers' increased

Table 53. Relative frequency of observed practice with concepts by language for individual subsample children over three points in time: ALERTA[1]

| | SPANISH | | | ENGLISH | | | NON-LANGUAGE SPECIFIC | | |
|---|---|---|---|---|---|---|---|---|---|
| | I | II | III | I | II | III | I | II | III |
| **Spanish-Preferring** | % | % | % | % | % | % | % | % | % |
| Francisco | NO[2] | 67 | 29 | NO | 0 | 43 | NO | 38 | 29 |
| Alicia | 0 | 33 | 32 | 67 | 0 | 18 | 33 | 67 | 50 |
| Maria | NO | 0 | 0 | NO | 37 | 29 | NO | 64 | 71 |
| Judith | NO | 63 | 3 | NO | 25 | 57 | NO | 12 | 40 |
| Veronica | NO | 82 | 41 | NO | 9 | 6 | NO | 9 | 53 |
| Shirley | NO | 0 | 0 | NO | 9 | 50 | NO | 91 | 50 |
| **English-Preferring** | % | % | % | % | % | % | % | % | % |
| Kum'jani | 0 | 15 | 0 | 71 | 45 | 80 | 29 | 40 | 20 |
| Kurt | NO | 9 | 0 | NO | 82 | 0 | NO | 9 | 100 |
| Wanda | 0 | 0 | 20 | 67 | 100 | 20 | 33 | 0 | 60 |
| Donald | 0 | 0 | 0 | 0 | 100 | 17 | 100 | 0 | 83 |
| Elizabeth | 0 | 20 | 0 | 50 | 30 | 64 | 50 | 50 | 36 |
| Harold | 0 | 13 | 0 | 100 | 53 | 52 | 0 | 33 | 48 |
| Jaime | 0 | 15 | 0 | 71 | 55 | 0 | 29 | 30 | 100 |
| Jody | 0 | 20 | 0 | 50 | 80 | 0 | 50 | 0 | 100 |

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed.

emphasis on both languages during the second observation period is the practice six of the seven children received in Spanish at that time.

The few observed behaviors in the area of concept development during the first observation period were principally in the category of visual discrimination for both groups of children (see Appendix S ). This is understandable given the emphasis on familiarizing the children with the classroom environment early in the year. At the first observation, English-preferring children exhibited a greater diversity in their use of concepts than their Spanish-preferring counterparts. Both groups, however, showed increased diversity over the year in their use of concepts in Spanish, English, and nonlanguage-specific behaviors. Whereas, with the exception of the second observation period, the English-preferring children's increased diversity was largely limited to their first language, the Spanish-preferring children tended to diversify in their second language throughout the year. The one exception was the child whose relative English use decreased at each observation period. In terms of specific categories in which the children were observed to increase their practice, consistent trends for Spanish-preferring children were in the areas of seriation/sequencing and symbolic representation where four of the six children and all of the subsample, respectively, showed relative increases. The only consistent trend for English-preferring children was in the category of matching/classification where six of the eight children increased their practice over the year.

Alicia and Jaime typify the experience in learning concepts of a Spanish-preferring and English-preferring child, respectively, over the course of the school year.

• Alicia, as was typical of many of the Spanish-preferring children at the beginning of the year, often identified objects in English. During the early morning greeting session which took place daily in the rug area, Alicia was observed pointing to her peers and correctly identifying "girl, girl, boy, boy." When the English-dominant aide conducting the calendar review asked the children what month it was, Alicia correctly replied, "November," demonstrating her understanding of time relations.

By the second observation period, Alicia had progressed to more difficult conceptual relations, identifying the correct sequence of numbers in both Spanish and English and demonstrating an understanding of likeness by pointing out similar shapes. The following language sample was taken from a small group activity at midyear when Alicia was sitting at a table in the manipulative toy area with two of her peers, cutting out pictures numbered one to four from a magazine and pasting them on construction paper in the form of a house:

Alicia: Uno, dos, tres.
(Counting the pegs in a peg board and then turning her attention to the assignment.)
Estoy haciendo una casita.
(Turning to one of the other children at the table:)
Eso no va ahí. Esto(s) no son los mi(s)-mos. A round circle. Míralo aquí. Ya e(s)to están hecho. Tú ve lo mismo -- el mismo color. Yo e(s)toy ayudando a é(s)te porque él no sabe. This one there, you see.

Here Alicia demonstrated her counting ability in Spanish, an activity in which she had engaged earlier the same day in English when she correctly counted the children for the teacher taking attendance. She also exhibited her mastery of the curricular objective for that day, understanding of the concept of "the same" -- mismo in Spanish. Evidence of a pattern of balanced concept development in both languages is her correct identification of a shape in English -- "a round circle."

Alicia's progress toward recognition of comparisons in her preferred language is evident from this language sample taken during a watercolor painting activity late in the school year:

Alicia: (To an English-speaking classmate:)
I'm not playing with you.
I'm bigger than him.
I'm bigger than you.
Stand up, stand up.
Tú no más grande que yo.
Yo soy más grande que tú.
(To another English dominant classmate:)
And I got this color. You got the same color. You got all of them.
(To a Spanish speaker, who was painting circular shapes:)
Tú'tá 'ciendo una bola. Look it what you did me.
(Referring to her painted fingers.)
Eddie, tú no tiene(s) ésto, ésto, ésto.

In addition to correctly identifying the round shapes in Spanish, Alicia successfully expressed a comparison of size in both languages, having acquired a mastery of the difficult linguistic contrast between the formation of the English comparative "adjective + -er" form and the Spanish "más + adjective" form. She also identified the likeness of objects, using "the same" in English as she had done in the earlier observation when she expressed similarity in her preferred language. The result of Alicia's practice is reflected in her test scores, scoring near maximum on both the English and Spanish measures of concepts at the posttest, despite receiving a relatively low score in English at the pretest.

Jaime, unlike the Spanish-preferring children who exhibited considerable progress in their understanding of concepts in both languages, tended to demonstrate greater ability in understanding of concepts in his preferred language, as did the other English-preferring children. Jaime, a very sociable child who generally would rather play (drama) than work on small group assignments and who had some knowledge of Spanish, was considered to have achieved average concept development in his first language by the end of the year.

Early in the year, the following exchange was witnessed during a period in which the children threaded cut-up straws and a variety of small paper shapes with a hole in the middle onto a string of yarn to form a necklace.

Jaime : I want some straw. This is one straw right here. I'm gonna use some of this.
Teacher: What color?
Jaime : This white one.
Teacher: Show me what you're using.
Jaime : Purple, Mrs.____. Purple.
(He then holds up a piece of red yarn and says:)
Black.
Teacher: (Picks up and shows the young boy other pieces of red yarn and asks:)
Is that the same?
Jaime : (Nods.)
Red, Mrs.____, what color is that?
(Holds up light purple piece.)
Teacher: Light purple.
Jaime : Mrs.____, this is the same thing like this.
(Matching two yellow pieces of yarn.)

At this early stage of the year, Jaime's performance in identifying the color characteristics of objects was still variable as he correctly identified yellow, purple, and white but missed red.

The teacher used the art activity not only to explore the concepts of color but to begin to give the child practice in identifying similarities and differences. The boy seemed to have a good grasp of this concept; he was able to match two yellow pieces and recognize the similarity between the two red pieces. The teacher addressed all questions to him in his preferred language and at this point in his development made no attempt to introduce him to Spanish concepts.

By mid-March, the teacher had begun to try to introduce Jaime to Spanish concepts, although he proved somewhat unreceptive to her attempts, as is evident from this verbal interaction recorded when the children were painting with multishaped sponges:

Teacher: What shape is this?
(Referring to triangular sponge.)
Jaime : Shape.
(Self-corrects:)
Square.
(Another distracted by the action of another child:)
Look [illegible].
Teacher: Triángulo.
Jaime : Triángulo.
Teacher: ¿Qué color es éste?
(Referring to red paint.)
Jaime : Orange.
(Self-corrects:)
Red.
Teacher: (Asks where one of the other children has gone.)
Jaime : She went to get some papers.
Teacher: Vamos a contar . . .
Jaime : Uno . . .
(Counts with other children, and then disputes with a classmate:)
No, you get that, you get that one over there.
Sally : I get this one.
(Grabbing a sponge.)
Jaime : (To Sally:)
Okay me too.
(To teacher:)
Mrs.____, I wanna do another one.
(Repeats four times.)
Jaime : Oh, make a triangle. I wanna make another one. I get that one, gimme. One, two, three, four, five, six, seven, eight.
(Counting paints, and then to classmates:)

Gimme, I get that sponge. You get this one. I'm getting all of it. (Repeats twice, in reference to the paint.

Gerry : (Counts the numbers 1 to 9 in English.)

Jaime : Ten.

Although Jaime continued to have problems identifying colors and shapes even in his first language, he demonstrated progress in other concept areas by spontaneously identifying the correct sequence of numbers from one to 10 and the property of "bigness" in his native language. When the teacher probed his knowledge of concepts in his second language, he understood the question, although he failed to produce the proper response for colors. He did, however, exhibit a limited knowledge of Spanish numbers, as did a number of the English-preferring children at this site.

(3) Socioemotional Behavior. Observed behaviors in this area were related to three categories: school readiness, self-esteem, and motivation. As can be seen from Table 54, at the beginning of the school year 100% appropriate behaviors were recorded for four of the six Spanish-preferring children and five of the eight English-preferring children. In the case of the first group, Francisco and Maria refused to participate in group activities and had difficulty relating to other children. Both improved at midyear as they became better socialized to the classroom environment, but Maria reverted to moodiness and whining at the end of the school year. Teachers hypothesized that she needed a vacation.

Of the English-preferring children, Kurt and Jody exhibited some inappropriate classroom behaviors. Kurt was one of the youngest children in the classroom and had difficulty maintaining interest in group activities. He had greatly improved by the end of the year. Jody seemed to interact well with children and adults but sometimes defied teachers by refusing to eat. Overall inappropriate behavior for subsample children in both groups increased over time. The rise in behavior reflecting lack of adaptation to the classroom context for English-preferring children during period 2 stemmed principally from their tendency to refrain from participation to group activities. This was due in part to the children's failure to respond to the increasing use of Spanish by the teachers. The remaining instances were attributable to a few children who persistently refused to participate in specific activities; this was indicated by an observer's remarks such as "G, as usual, would not participate even when he was called to attention repeatedly."

The increase in the failure to follow directions, which became evident in the Spanish-preferring group during period 3, appeared to be a result of the approach of summer. The marked increase in

Table 54. Relative frequency of observed appropriate and inappropriate socioemotional behavior for individual subsample children over three points in time: ALERTA.[1]

| | APPROPRIATE | | | INAPPROPRIATE | | |
|---|---|---|---|---|---|---|
| | I | II | III | I | II | III |
| **Spanish-Preferring** | % | % | % | % | % | % |
| Francisco | 0 | 55 | 75 | 100 | 44 | 25 |
| Alicia | 100 | 100 | 60 | 0 | 0 | 40 |
| Maria | 0 | 100 | 50 | 100 | 0 | 50 |
| Judith | 100 | 67 | 73 | 0 | 33 | 25 |
| Veronica | 100 | 100 | 100 | 0 | 0 | 0 |
| Shirley | 100 | 100 | 100 | 0 | 0 | 0 |
| **English-Preferring** | % | % | % | % | % | % |
| Kunjani | 100 | 50 | 50 | 0 | 50 | 50 |
| Kurt | 0 | 17 | 100 | 100 | 83 | 0 |
| Wanda | 99 | 100 | 50 | 0 | 0 | 50 |
| Donald | 100 | 55 | 50 | 0 | 44 | 50 |
| Elizabeth | 100 | 100 | 100 | 0 | 0 | 0 |
| Harold | 100 | 100 | 100 | 0 | 0 | 0 |
| Jaime | NO | NO | 76 | NO | NO | 25 |
| Jody | 60 | 50 | 0 | 40 | 50 | 0 |

[1] Percentage totals may not equal 100% due to rounding.

appropriate behavior for both English- and Spanish-preferring groups in the area of "motivation" during the final observation period was attributed to the teachers' more frequent complimenting of the students on their work, which served to encourage the child's self-acceptance -- a stated model objective.

Especially at the beginning of the year and probably due to the novelty of the classroom context, the children expressed enthusiastic interest in group activities. Situations such as the following were common:

> Student: Mrs.____, I did it!
> (After successfully drawing a vegetable.)
> Like to do banana!
> (Student takes a green banana from nearby table, sits down with green crayon in hand, and begins drawing the fruit.)

The observer often made notations such as "The teacher instructed her to put water in the cup from the pitcher, which she did," reflecting the increasing frequency with which the children successfully followed instructions.

## 2. Parent Outcomes

### a. Parent Sample

Twenty experimental mothers and six control mothers comprised the parent sample at Site I. Ten experimental and four control mothers were interviewed at Site II.

Characteristics of parents of both experimental and control children at the two sites were similar and appear to reflect those of the community as a whole. The ethnicity of 70% of the parents at both sites was Hispanic; 26 % were Black and the remainder West Indian. ALERTA I parents had been in the continental United States an average of 19 years and ALERTA II parents averaged 23 years in the United States; several of the latter were recent immigrants. Mean family size, number of children, and age of children were similar for experimental and control groups at each site. (For complete parent background characteristics see Appendix L).

b. Mothers' Attitudes and Perceptions

ALERTA parental perceptions and attitudes are discussed in terms of trends in the mean responses of these individuals; the means themselves are found in Appendix X. Concerning language usage, both English and Spanish were used at home in all groups, although English was more likely for teaching. Parents of both experimental groups rated themselves and their children as higher in English ability. They did, however, perceive a slight gain in their children's ability to speak both languages at the end of the year, a perception which was not shared by control parents.

Parental aspirations for their children were high for all groups. A majority of parents desired professional-level careers for their children, and 15 or more years was the level of schooling that parents reported as desirable. Experimental and control group parents at both sites held a positive view of education in general and bilingual bicultural education in particular, and saw a positive self-concept as contributing to school success at both the pre- and posttests.

ALERTA control children did not spend their time on instructional activities which might have provided them with preschool-related skills. As would be expected, the major difference between experimental and control children at both sites in how they spent their day was in school-related activities. Between the hours of 9:00 A.M. and 3:00 P.M. the primary activity of all experimental children was school (see Appendix V). Some play and television watching were reported during these hours because of the half-day preschool schedule. Control children at the two sites differed somewhat in that those at Site I were reported to spend their time primarily in play activities and secondarily watching television while the reverse was true for their Site II counterparts.

3. Teacher Outcomes

a. Teacher Sample

The sample was comprised of three members of the ALERTA teaching staff at Site I and two at Site II. Except for the ALERTA II aide, the teachers and aides at the two ALERTA sites were female. ALERTA I personnel ranged in age from mid-20s to mid-40s. Both teachers were bilingual, island-born Puerto Ricans. One aide was a bilingual Puerto Rican from New York, and the other aide, who served only part of the year, was a West Indian who spoke English, French, and some Spanish. All staff members who worked the entire year at Site I reported speaking Spanish and English in equal proportion in their interactions with others.

All but one of the staff had had at least three years of aide experience, and the teachers an additional one to three years as teachers. At least three of the staff began as voluneers and two had been Head Start parents themselves. Except for the one new aide who held a high school diploma, each of the staff had had some college-level education ranging from course work to a B.A. degree. One staff member held a CDA certificate.

At ALERTA II, the teacher was a monolingual woman in her 50s and the aide a bilingual Panamanian man in his 30s. Both had worked over five years as aides, and the teacher had been at the Head Start center for its full 15 years. Both teacher and aide had university degrees and both lived in the Head Start neighborhood. (For complete teacher background characteristics see Appendix M.)

b. Teachers' Attitudes

Teachers at both sites supported the model's multicultural emphasis and liked the physical division of the room into learning centers and the use of a wide range of materials. However, the "paperwork" associated with observing individual children was seen to complicate a rapidly paced daily routine with its double sessions, active children, and (at least for ALERTA II) frequently busy lunch hours. The ALERTA I staff was in general receptive to the philosophical tenets of the model, including bilingualism. However, at ALERTA II, questions were voiced regarding Spanish instruction and the practicality of language separation and groupings as called for by the model. Teachers and aides at both sites consistently viewed cultural awareness and communication as the major benefits, indicating an integrative orientation.

Both groups of teachers also exhibited fairly consistent attitudes over time toward the type of language which should be used by Spanish- or English-speaking children. The three teachers at Site I expressed unanimous support of textbooks as models for language use for Spanish- and English-preferring children at both pre- and posttest. The two staff members at Site II differed at both pre- and posttest in their attitudes toward the importance of various language models. One staff member viewed home and community languages as important models for language use whereas the other did not.

The attitudes of teachers and aides toward parent involvement in education changed slightly during the evaluation year (Table 55). Both groups of teachers consistently believed that parents should be involved in the classroom and that teachers should keep frequent contact with parents. All teachers, especially those at Site II, felt they should attempt to involve seemingly uninterested parents in their program. Site II teachers also expressed confidence in the quality of information received from parents, while Site I teachers were neutral about such information.

Table 55. Attitudes toward parent involvement of experimental Head Start teachers: ALERTA.

| | VERY POSITIVE | | POSITIVE | | NEUTRAL | | NEGATIVE | |
|---|---|---|---|---|---|---|---|---|
| SITE I N = 3 | PRE | POST | PRE | POST | PRE | POST | PRE | POST |
| Parents should be involved in the classroom | 100 | 67 | | 33 | | | | |
| If parents cannot be in the classroom, teacher should have frequent contact with them | 67 | 67 | 33 | 33 | | | | |
| Teacher should attempt to involve seemingly uninterested parents | 67 | 67 | | | 33 | 33 | | |
| Teacher personal success in involving parents | 67 | 33 | | 67 | 33 | | | |
| Teacher could do a better job with more parent participation | 67 | 67 | | 33 | 33 | | | |
| Parents provide accurate information to teachers | 67 | | | 33 | 33 | 67 | | |
| SITE II N = 2 | | | | | | | | |
| Parents should be involved in the classroom | 50 | 50 | 50 | | | 50 | | |
| If parents cannot be in the classroom, teacher should have frequent contact with them | 50 | 50 | | | 50 | | | 50 |
| Teacher should attempt to involve seemingly uninterested parents | 100 | 100 | | | | | | |
| Teacher personal success in involving parents | 50 | | | | 50 | 100 | | |
| Teacher could do a better job with more parent participation | 50 | | | | | 100 | 50 | |
| Parents provide accurate information to teachers | 50 | 100 | 50 | | | | | |

Teachers' and aides' opinions at Site II with respect to what should be included in a curriculum tended to remain consistent over the year while Site I teachers had a dramatic change. At the pretest, two of the three respondents at Site I considered teaching children Hispanic lifeways, objects, dress, songs, and dance as of little importance. By posttest these were identified as very important by all respondents. This change may be related to the teachers' additional familiarity with the ALERTA model and their experience with attempting to implement its multicultural goals. The teaching staff at Site II viewed introduction of cultural items as important in their program.

## B. Implementation

This section provides the results of the evaluation related to the factors affecting the implementation of the ALERTA curriculum. The discussion is augmented by Appendix Y, which contains descriptions of (1) the sociocultural environment of the communities, (2) the administrative aspects of each site, and (3) the Head Start settings. A discussion of the principal features of the ALERTA curriculum initiates the section. The success of both experimental sites and the individual classrooms within each site in meeting the goals of the model in five areas -- schedule and organization, physical setting, instructional materials, individual behaviors, and instructional strategies -- is described in the remainder of the section.

### 1. Principal Features

The model developers consider ALERTA to be a process for developing a curriculum based on continuity between children's life experiences and classroom learning activities. The model outlines goals and objectives by which connections are drawn between learning and the total social context, rather than presenting a concrete set of materials and detailed activities which may or may not relate to a child's sense of reality. The teacher's manual does present a sample of activities, each of which is related to a general goal and several specific objectives. This format allows adaptation of the curriculum to any population, although it was designed for an urban environment that includes both Hispanic and Black children and in which at least 50% of the children speak Spanish as a first language. Parents and community resources are integral to the multicultural emphasis, and bilingualism is embedded within all aspects of the program.

a. Model Goals and Strategies

Assumptions about how children learn are stated clearly in the teacher's manual: growth proceeds as an individual engages in progressively more complex thoughts, feelings, and actions, while the environment plays an influential role in determining that growth process. Emphasis on bilingual and multicultural programming extends this understanding of the role of the environment (including home, family, community, and language) to the child's development.

Goals and objectives are presented in the three domains of socioemotional, cognitive/language, and psychomotor development. Goals under the socioemotional domain include realization of capabilities and worth of self and others, coping with emotions, group participation, independence, and cultural awareness. Under language and cognition are goals relating to problem-solving strategies, making statements about the world, reproducing sound and language patterns, and developing more complex linguistic structures. Psychomotor development goals relate to body control, movement, and spatial relations.

Language learning for ALERTA is distinguished by language separation through the association of one language with one teacher and through large and small groupings. Corresponding to the two languages spoken in the community, at least one teacher is to use English and another to use Spanish during the teacher-directed portions of the schedule.

In addition to keeping the two languages distinct, ALERTA is based on a premise of reinforcing a child's primary language before supplementing with a second language. Classifying children by their language dominance, small groups (of five to six children) are alternated so that children receive first language instruction one day and second language instruction the next. Language instruction also occurs during large group periods, one or two of which are scheduled daily. Presentation of languages is to be alternated each week, but an introduction in the other language is recommended to capture the attention of the other children.

The model calls for a balance in content of activities: child-adult, child-child, and child-material relations. Both small and large group activities comprise the teacher-directed parts of the day. Child-initiated or "free play" activities involve the relatively unrestricted movement of children between areas. Teachers may interact with children during these periods or use them to informally observe children's behavior. Particular skills to be learned, such as writing and reading readiness, are not specified by the curriculum. In addition, although it is oriented to reflect the life experiences of the children within the program, the manual makes no detailed reference to parents, home visits, or supportive resources.

ALERTA calls for regularly formulating plans through a series of linked goals, the specifics of which are based on direct observations of children. The teacher's manual suggests certain objectives to be used flexibly, as a framework to which teachers fit needs of individual children. A set of observation guides enables teachers to track and record each child's progress, "balancing out" the manual with activities that are relevant to individual needs and interests. In addition to this comprehensive assessment, teachers keep anecdotal records of individual children's achievements over time and in different parts of the daily schedule. In a continuous process, then, teachers observe to determine a child's needs and interests, design activities to meet those needs, and reobserve after the child has been introduced to the activity.

b. Classroom Structure

The ALERTA teacher's manual details the set-up of learning/activity centers in the classroom and the development of a daily schedule. Classrooms are to be divided into housekeeping, block-building, sand, water, art, table materials, woodworking (optinal), music and movement, and science areas. Each area is to be accessible to several children at a time, and the particular placement of areas (e.g., blockbuilding and housekeeping adjacent) is recommended to encourage certain interactions. All areas contain appropriate materials which can be manipulated and which relate to children's home and cultural backgrounds. Although the curriculum itself provides no materials for children's use, the importance of having a variety of materials and of making or acquiring progressively more complex items that represent a higher level of learning difficulty is stressed by ALERTA.

The teacher's manual provides sample schedules for both full- and half-day sessions. Modeled after Head Start guidelines, they provide for a balance between large and small groups, teacher-directed and child-initiated activities, "active" and "quiet" periods, and meals and preparation time.

3. Model Level Implementation

Figure 7 presents the relative frequencies for the various implementation categories for each site over time whereas Table 56 furnishes a summary of the individual scores in each category. There is a relatively similar overall implementation score at both sites during the initial observation period. Site I appears to have the highest implementation at midyear while at Site II there is a rise late in the year. The pattern observed at Site I may be related to the training which was received primarily during the first part of the year. In-service was rarely conducted at Site II until the latter half of the year, which helps to account for the higher score during the third

observation period. The overall moderate scores at both sites were probably affected most critically by the work schedule of the staff. Conducting two three-hour sessions a day with few breaks, five days a week, teachers became physically and emotionally drained. There was generally insufficient time for preparing materials or for carefully and creatively planning activities according to model objectives.

Although staff structure was similar and no turnover was experienced at either site, particular attitudes and compatibility of staff members may have differentially affected implementation at the two centers. There was some ambivalence about Spanish instruction at Site II which led to underutilization of the Spanish-speaking aide in instructional activities. At both sites, however, the multicultural aims of ALERTA were supported.

Schedule and organization reflects teachers' familiarity with the model at Site I as most planned activities occurred during each day of observation across the time periods. The pressures of time relating to the twice-daily sessions and the lack of adequate prior planning led to the deletion of some planned activities at Site II. These factors, combined with infrequent second language activities, led to the lower schedule scores at Site II. Attrition relating to the mobility of the population at Site I does not appear to have affected scheduling, while the tardiness and absenteeism resulting from harsh environmental conditions (especially during the winter months) appears to have negatively impacted on scheduling at Site II but not at Site I.

The use of classroom physical setting was similar at both sites in that most of the centers prescribed by the model were present and in use throughout the year. Differences in scores reflect an increasing prevalence of large group activities at Site I as the year progressed and poor heating which sometimes forced this center to close and otherwise impinged on the use of some colder areas. At Site II, the incremental rise in setting scores relates to children's increasing familiarity with and use of a diversity of classroom areas during child-initiated play activities.

Increasing reliance on instructional materials, which are central to ALERTA, is suggested by the increase in scores at both sites from the first observational period to the third. Less than optimal scores relate to the general lack of culturally specific materials and to their infrequent use, in addition to the absence of labeling of utilized materials in both languages.

Under the category of individual behaviors, Site I exhibits a pattern of gradual decline over the year while Site II scores are initially lower and rise at the end of the year. These scores appear to relate to the willingness of Site I teachers to interact with children in their preferred language, followed by a tendency during the

FIGURE 7

ALERTA DEGREE OF IMPLEMENTATION BY SITE OVER TIME

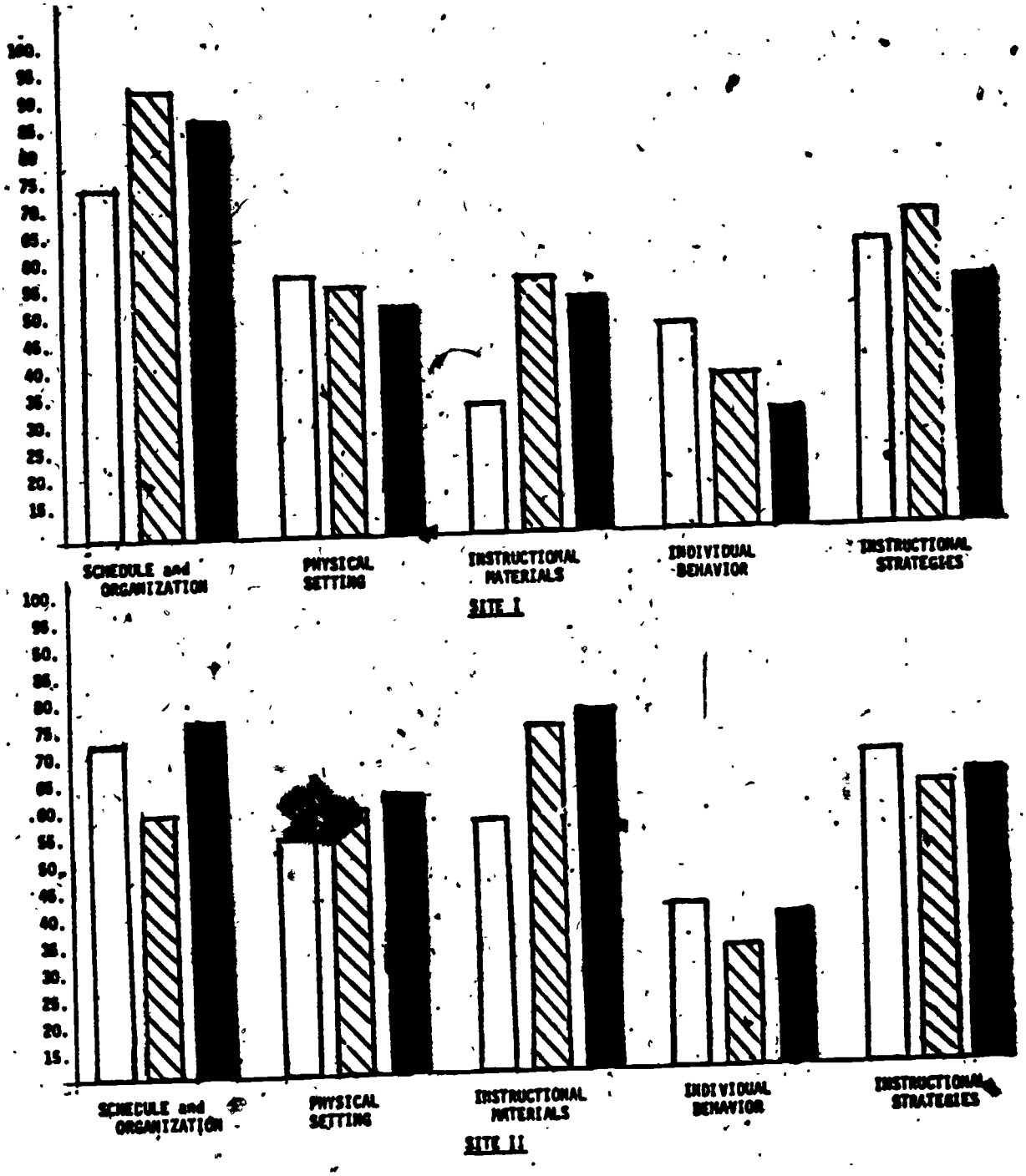


Table 56. ALERTA implementation scores by site over time.

| Implementation Categories | Maximum Possible Score | Site I | | | Site II | | |
|---|---|---|---|---|---|---|---|
| | | $T_1$ | $T_2$ | $T_3$ | $T_1$ | $T_2$ | $T_3$ |
| Schedule/ Organization | 12.16 | 8.99 | 11.15 | 10.39 | 8.74 | 7.22 | 9.31 |
| Physical Setting | 24.90 | 14.41 | 13.82 | 13.07 | 13.60 | 14.95 | 15.78 |
| Instructional Materials | 8.76 | 2.92 | 4.87 | 4.62 | 4.93 | 6.57 | 6.76 |
| Individual Behavior | 31.15 | 14.53 | 11.99 | 9.94 | 12.35 | 10.68 | 11.57 |
| Instructional Strategies | 18.90 | 11.85 | 12.45 | 9.92 | 13.06 | 11.70 | 11.93 |
| TOTAL | 95.87 | 52.70 | 54.28 | 47.94 | 52.68 | 51.12 | 55.35 |

third observational period to have large group activities that were directed by a single adult or by children themselves (e.g., outdoor exercise). The relatively consistent scores at Site II reflect the English-predominant adult-child relations throughout the year, given the lesser bilingual ability of the staff compared with Site I. Parent participation in the classroom was rare at both sites; parents took instructional roles only when a staff member was absent. Parents were actively involved in policy formulation and decisions of the center through committee participation, although this situation is not reflected by the checklist items.

There are similar scores at both sites concerning instructional strategies. The decrease between the first and third observation periods relates to an energetic start at the beginning of the school year and increasing staff fatigue thereafter. There were fewer adult-directed activities and language groupings later in the year and more child-initiated and large group activities.

As the following section suggests, the checklist results for these two sites may be strongly affected by single variables and may not reflect all of the factors that are critical to implementation of a curriculum.

4. Classroom Implementation Factors (Site I)

As can be seen from Table 57, each of the classrooms within the South Bronx site has a pattern of implementation similar to that found at the site level. Implementation for each classroom reaches its peak during the second observation period with some dropoff occurring in each at the end of the year. This decrease can be attributed to an increase in time spent in large group and individual activities at the expense of small group activiites at the end of the year. At that time, the teachers felt that the children were tired and needed a respite from the structured classroom activities. All classes often went to a local park, cutting down the frequency and the amount of time spent in other activities.

Although all classrooms exhibit similar overall patterns of implementation, variation exists within individual implementation categories. What follows is a discussion of such differences across the five categories of implementation.

a. Schedule and Organization

The daily schedule varied somewhat among the morning and afternoon classes implementing the ALERTA model, although the same activities were generally carried out in each classroom. The schedule was as follows:

Table 57. ALERTA I implementation scores by classroom over time.

| Implementation Categories | Maximum Possible Score | Classroom A | | | Classroom B | | | Classroom C | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 |
| Schedule/ Organization | 12.16 | 9.12 | 10.64 | 10.26 | 9.12 | 12.16 | 10.26 | 8.72 | 10.64 | 10.64 |
| Physical Setting | 24.90 | 14.32 | 13.40 | 12.66 | 14.12 | 13.28 | 12.66 | 14.78 | 14.78 | 13.90 |
| Instructional Materials | 8.76 | 2.92 | 5.11 | 4.38 | 3.28 | 5.11 | 4.38 | 2.55 | 4.38 | 5.11 |
| Individual Behavior | 31.15 | 14.24 | 14.68 | 10.23 | 15.57 | 10.68 | 11.57 | 13.79 | 10.62 | 8.01 |
| Instructional Strategies | 18.90 | 12.15 | 10.35 | 9.95 | 9.90 | 13.95 | 9.00 | 13.50 | 13.05 | 10.80 |
| TOTAL | 95.87 | 52.75 | 54.18 | 47.48 | 51.99 | 55.18 | 47.87 | 53.34 | 53.47 | 48.46 |

| | |
|---|---|
| Breakfast | 15-30 minutes |
| Large Group | 15-30 minutes |
| Gym | 45 minutes |
| Combination (language/free play) | 60 minutes |
| Lunch | 30 minutes |
| Dismissal | 5-10 minutes |

Breakfast was the first activity in the morning, whereas large group began the afternoon sessions. The afternoon classes also alternated use of the gym; one class engaged in large-muscle activities in that locale while the other had its combination period.

Activities were usually carried out as planned in all classrooms. The duration of activities was affected by such factors as short excursions and inclement weather which forced children or teachers to stay at home. The generally lower scores in this implementation category at the first observation period appear to be a result of extended transition times as children adapted to the classroom routine. In addition, although the hour-long combination group was usually carried out during the observation periods, all of the activities to be included in that period (language groups, learning center free play, and teacher-directed nonlanguage lessons) did not always occur, accounting in part for the generally less than maximum scores.

b. Physical Setting

The areas available and their use remained fairly consistent over time for all of the classrooms at ALERTA I. The classrooms all had sufficient space for all of the learning centers prescribed by the model and ample room for large-muscle activity in the upstairs gym. The lower scores recorded during the second observation period reflect the lack of a water area at that time and the infrequent use of the sand area in classrooms A and B. The water area was not made available during the winter months, at the request of the parents who felt that the children would get their clothes wet and consequently be subject to illness and colds. While the sand area did exist in all three classrooms, in classrooms A and B it served more as a storage area and was generally covered with other classroom materials. In classroom C, however, this area was used throughout the year. Lower scores across all classrooms during the third observation period are related to the increased time spent outside the classroom. As mentioned previously, in the spring when the teachers perceived that the children were tired of the classroom routine, almost daily field trips were made to local parks, cutting down on the time available to use the various areas, especially during combination activities.

While not directly reflected in the implementation forms, two factors in the physical setting outside the classroom itself did relate to the use of the prescribed classroom areas. The cold weather coupled with the breakdown of heating facilities caused the building to close on several occasions. The cold conditions also limited the use of the gym which was most affected by the lack of heating. The teachers generally improvised by using the parents' room or the classrooms for dancing and mild exercising. However, both the time involved and the types of activities carried out varied from those allowed by the gym and its furnishings.

c. Instructional Materials

The three classrooms differed in their patterns of implementation in this category. Classrooms A and B account for the patterns of the site as a whole by reaching their highest level of implementation at the midyear observation, then tailing off somewhat at the end of the year. Classroom C, on the other hand, shows steady gains throughout the year. The less than maximum scores in all classrooms are a result of a general lack of labeled materials and of pictures of famous historical figures called for by the model. The increases recorded during the midyear observation may be related to the new furniture and materials such as puzzles and manipulative toys which were added to all classrooms at this time.

Pictures and posters in all classrooms represented a variety of ethnic groups working and living in urban environments. Actual culturally specific materials, however, were generally those found among Hispanic groups of Caribbean origin. These were concentrated in the housekeeping and music areas and included such items as pavas (straw hats), maracas, and tostoneras (plantain presses). Regional foods were regularly served at mealtime and were occasionally used for lessons in the housekeeping center.

d. Individual Behaviors

Only classroom A follows the general pattern found in the other implementation categories. Rather than reaching its highest degree of implementation at the second observation period, classroom B has its lowest implementation of the category at that point, and classroom C shows a steady decrease over all three observation periods. Although this category has in general the lowest level of implementation, this is to some extent a result of including parent participation in the classroom as an implementation item even though such participation is not explicitly called for by the model. The level of implementation in this category also relates to the teacher's tendency to use both languages in the classroom despite model directives which suggest separate adult models for each language.

As can be seen from Table 58, although teachers were to serve as Spanish language models in all of the classrooms studied, they tended to use both languages in the classroom, even in those teacher-directed activities which called for the use of Spanish only, largely because the Spanish-preferring children in the classrooms were bilingual. With the exception of classroom B during the midyear observation, English tended to be the predominant language in all classrooms throughout the year. Teachers were generally involved in a greater number of language interactions than were aides, with the single exception of classroom C during the first observation period. In classroom C, the aide was the English language model, and a large number of activities during that period, especially those of large group, focused on familiarizing the children with the English lexicon for classroom materials.

In all classrooms informational statements, which made up more than half of the total, formed the principal mode of interaction. These occurred most often during combination-period language groups and during circle time. Questions, which made up more than 30% of the total verbal interactions, occurred most frequently in language groups, as it was during this activity that teachers concentrated on exploring the children's knowledge of concepts and lexicon. Commands generally occurred during transition periods and meals, whereas verbal reinforcement either in the form of praise or discipline was the least used verbal interaction mode.

Parental participation was almost nonexistent within the classroom. The lone exception was a mother who helped out several times in each classroom when a teacher or aide was absent. This individual did not, however, take an instructional role but performed custodial duties, served food, and occasionally assisted individual children. A number of parents did contribute their time to make materials in the parents' room and to attend centerwide activities such as workshops and trips. Also, several parents were on the Center Policy Committee.

e. Instructional Strategies

As Table 57 indicates, the three classrooms at ALERTA Site I had different patterns of success in carrying out the instructional activities outlined by the model. Classroom B follows the pattern of the site as a whole, achieving its highest score at the midyear observation. Classroom C is relatively consistent over the first two observation periods but shows a decline at year end. Clasroom A shows a steady decrease for the category over the evaluation year. As previously mentioned, the general decrease across all classrooms at the third observation period is attributable to the larger amount of time toward the end of the year spent in large group or individual activities.

Table 58. ALERTA I classroom language production by teaching unit.

| CLASSROOM A INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 42 | 23 | 0 | 2 | 67 | 32 | 41 | 2 | 3 | 78 | 33 | 29 | 0 | 1 | 63 |
| Aide | 31 | 2 | 0 | 0 | 33 | 15 | 7 | 0 | 0 | 22 | 26 | 11 | 0 | 0 | 37 |
| TOTAL | 73 | 25 | 0 | 2 | 100 | 47 | 48 | 2 | 3 | 100 | 59 | 40 | 0 | 1 | 100 |

| CLASSROOM B INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 67 | 5 | 0 | 0 | 72 | 36 | 39 | 0 | 2 | 77 | 28 | 27 | 0 | 0 | 55 |
| Aide | 28 | 0 | 0 | 0 | 28 | 20 | 3 | 0 | 0 | 23 | 32 | 13 | 0 | 0 | 45 |
| TOTAL | 95 | 5 | 0 | 0 | 100 | 56 | 42 | 0 | 2 | 100 | 60 | 40 | 0 | 0 | 100 |

| CLASSROOM C INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 11 | 21 | 0 | 0 | 32 | 15 | 39 | 5 | 1 | 60 | 22 | 41 | 1 | 0 | 64 |
| Aide | 99 | 9 | 0 | 0 | 68 | 38 | 2 | 0 | 0 | 40 | 34 | 2 | 0 | 0 | 36 |
| TOTAL | 70 | 30 | 0 | 0 | 100 | 53 | 41 | 5 | 1 | 100 | 56 | 43 | 1 | 0 | 100 |

The less than maximum scores received in this category are a result of the variability in the way in which language activities were carried out. Often such activities were integrated with other activities such as art or occurred with children other than those within the scheduled group. In classrooms A and B, teachers at times functioned as English language models although they had been ascribed the Spanish model role. The generally higher scores in classroom C are a reflection of the instructional team's ability to maintain their separate language model roles.

The following excerpt is from an evaluation researcher's field notes. It illustrates various aspects of the implementation process at ALERTA I reflected in the preceding discussion.

> The children are divided by language preference into two groups, sitting at two small tables in the center of the room. On each table are scissors, paste, and colored construction paper circles. The teacher who serves as the Spanish model sits with the Spanish-preferring children. She begins the activity by asking the children what they are going to do: ¿Qué es lo que vamos a hacer?" Juanita responds, "light," and her classmate, Wanda, chimes in with the colors, "rojo, verde, y amarillo." When the teacher repeats the question, Juanita repeats her answer, but this time in Spanish. The teacher expands on the youngster's answer, saying, "la luz del tráfico" and Juanita automatically repeats "tráfico." Wanda and Juanita then begin to talk among themselves. When Wanda asks her if she has all of her colored circles, Juanita responds, "Yeah, I have." Then, checking her materials more closely, she points to the red circle and says, "My red. You have two red. Ana took my red."
>
> Meanwhile, at the other table, the English-preferring group is involved in the same activity. Karen remarks, "We need them traffic lights." When the teacher inquires, "Why do we need them?" Karen replies simply, "Cuz." The teacher then asks a simpler question: "On what light will the cars go?" Karen responds correctly, "Green." Then, moving the lesson to the children's own experience, the teacher asks, "What color do we go?" Karen answers, "green."

Here the ALERTA I classroom was successfully following the posted schedule, where small group language sessions for both English- and Spanish-preferring children had been planned. As happened frequently, the language activities were integrated with art activities. This

session, related to the week's topic of transportation and traffic signs, encouraged the children to work with a variety of materials. It brought into the classroom a topic of relevance to the community and the home -- safety. The lesson also provided a natural context in which the teacher could review concepts of color and help develop the children's language. By asking "why?" for example, the teacher in the English group gave Karen the opportunity to expand her first language by using a variety of vocabulary and structures. Finally, following ALERTA's directives, the teacher who was the Spanish model asked all her questions in Spanish. As happened frequently, however, even the Spanish-preferring children tended to answer spontaneously in English. As mentioned earlier, this occurred naturally as a result of the bilingual ability of many of the Site I Spanish-preferring children.

## 5. Classroom Implementation Factors (Site II)

As is evident from Table 59, the ALERTA II site experienced a moderate increase in implementation in classroom A as the year progressed. There was a more varied pattern in classroom B, including both a leveling off and a moderate increase in implementation in that classroom following some midyear decline. The general increase in the former classroom probably relates to growing familiarity by staff and children with model goals and appropriate routine. The generally lower scores in classroom A are a result of greater absenteeism and behavioral problems. Higher year-end scores reflect increased understanding of the curriculum as a result of training late in the year. Factors affecting the variation in degree of implementation between classrooms and within areas of implementation at different times are considered in the remainder of this subsection.

### a. Schedule and Organization

The daily routine was similar for both the morning and afternoon sessions. There was a schedule posted near the main doorway which remained unchanged but which approximated the observed schedule. The morning sequence was as follows:

| | |
|---|---|
| Free play (including art, table toys, looking at books, blocks, housekeeping, etc.) | 55 minutes |
| Clean-up time | 10 minutes |
| Juice time | 10 minutes |
| Circle time | 15 minutes |
| Outdoor play time | 45 minutes |
| Toileting | 10 minutes |

Table 59. ALERTA II implementation scores by classroom over time.

| Implementation Categories | Maximum Possible Score | Classroom A | | | Classroom B | | |
|---|---|---|---|---|---|---|---|
| | | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 |
| Schedule/ Organization | 12.16 | 8.36 | 7.22 | 9.12 | 9.12 | 7.22 | 9.50 |
| Physical Setting | 24.90 | 14.32 | 15.36 | 15.57 | 12.87 | 14.53 | 15.98 |
| Instructional Materials | 8.76 | 5.11 | 6.57 | 6.94 | 4.75 | 6.57 | 6.57 |
| Individual Behavior | 31.16 | 9.79 | 10.68 | 11.57 | 14.91 | 10.68 | 11.57 |
| Instructional Strategies | 18.90 | 12.38 | 9.90 | 12.60 | 13.73 | 13.60 | 11.25 |
| TOTAL | 95.87 | 49.96 | 49.73 | 55.80 | 55.38 | 52.50 | 54.87 |

| | |
|---|---|
| Quiet time | 5 minutes |
| Lunch time and dismissal | 30 minutes |

The posted afternoon schedule varied in that juice time preceded free play, and circle and outdoor play times followed lunch and immediately preceded dismissal.

Not all activities required by the model were executed in either morning or afternoon class. Generally absent were second language activities. In addition, aide-directed activities and combined first and second language activities were missing during the second observation period. Omission of most language activities was the result of unfamiliarity with the demands of the model with respect to groupings and team teaching responsibilities (one language, one teacher).

The slightly lower scores in classroom A may be related to the greater tardiness for the morning starting time, with some children arriving up to 30 minutes late. This produced a longer free play period and sometimes a cancellation of one of the later activities. In the afternoon, on the other hand, some parents regularly picked up their children 15 to 30 minutes before scheduled dismissal time. Scheduling curtailment was most noticeable during the winter months and this, along with cancellation of outdoor play, helps account for the lower scores of the second observation period. Full-day excursions to museums, the beach, a pumpkin or apple farm, and an arboretum also led to cancellation of regularly scheduled classroom activities.

b. Physical Setting

Both sessions used the same classroom so all children experienced a similar environment. While the room was relatively small and therefore somewhat crowded with materials and furniture, all eight areas outlined by the ALERTA teacher's manual were present: blockbuilding, large muscle/music, sand, library, table materials, art, water table, and housekeeping.

Both classrooms show an increase in the use of the areas over time. There is, however, some variation in the use of the different areas, especially during the free play period. Early in the year, classroom B tended to have more activities involving all of the children in one area, which accounts for its lower scores at this period. The housekeeping and manipulative toy areas were those most likely to be used by all children during the course of the day. The sand and music areas were used less than the other areas, while the water table was never observed in use, which in part explains the less than optimum scores in this category. The block area was frequented primarily by active boys and the manipulative area by

boys and girls who were generally quiet. There was usually a representative ratio of English, Spanish, and bilingual children in each area. Both teacher-directed and child-initiated activities occurred, corresponding to the model guidelines. Teacher-direction occurred on an individual basis or in activities (e.g., some art activities designed for participation and completion by all children). Teachers often divided large and noisy groups. Otherwise, children did what they liked best and could move freely from one area to another. Some, particularly Spanish monolingual children, tended to play by themselves or sit out these activities.

c. Instructional Materials

The ALERTA model stresses the development of cognitive and motor skills associated with children's use of materials, and consequently materials were very much in evidence at Site II. There were many differently sized and shaped wooden blocks, cars, trucks, boats, trains and tracks, road signs, and boxes in the block area, in addition to several dozen wooden figures and plastic hand puppets representing ethnic and professional backgrounds. The housekeeping area included such items as a miniature stove, refrigerator, food containers, dress-up clothes, and multiethnic dolls. The sand table contained implements for digging and pouring. The art area had a variety of paper, markers, clay, and playdough. A "science" area roughly corresponded to the shelves holding plants, an aquarium, and items collected during field trips. The library corner housed 10 to 20 books at a time, as well as a small blackboard. The table materials area held a proliferation of manipulative toys. Large-muscle equipment included large wooden blocks for indoor use and climbing bars, wagons, tricycles, and rockers for outside. Music and movement, while frequently occurring outside the classroom, could make use in class of a record player and box of musical instruments, which included tambourines, a thumb piano, maracas, and a steel drum.

With the exception of the instruments, which were usually kept in a locked cabinet, the materials were accessible to the children and appropriate to the area in which they were found. Figures and props were found in the block-building area to suggest themes for play, as the model recommends. The multicultural curriculum was reflected in multiethnic figures and dolls and multicultural musical instruments, puzzles, and books in Spanish and in English/Spanish.

The moderately high scores are bolstered by the appropriate placement of areas and materials but are deflated by the relative absence of multicultural and labeled display materials. ALERTA calls for a "total social context" which enables a child to experience a variety of other cultures. Field trips into the neighborhood and local environment facilitated the achievement of this aim. However, children's family experiences and cultural backgrounds were not

systematically drawn upon in developing program materials and activities. Teachers' own ideas about materials sometimes complemented ALERTA in this regard. There was a relative underutilization of books and writing implements, compared with the plethora of manipulative, block, and housekeeping materials.

The general increase in scores over the year reflects the introduction of progressively more difficult manipulative toys, the periodic changing of books in the library corner, the labeling of some manipulative toys late in the year, and an increase in displays in both Spanish and English.

d. Individual Behaviors

A critical aspect of implementation involves the types of interactions in which children are engaged, teachers' use of language with children, and the participation of other adults in the program. Scores in this category were generally low, never reaching half of the maximum number of points possible. This is a result of predominance of English in teacher-child classroom interactions and a lack of parent participation in the classrooms. There is some evidence of an increase in implementation in this area as the year progressed, with both classes attaining similar scores for the second and third observation periods. Such change appears to be the result of teachers attempting to use some of the ideas presented in training sessions which took place at this time. These sessions were of extended duration, providing teachers with an opportunity to receive feedback from trainers before implementing new techniques in the classroom. The low score in classroom A for the first implementation period may relate to adverse effects on classroom activities of children who were not yet socialized into the classroom routine and its acceptable behaviors and required particular attention or discipline. The initially high score in classroom B is associated with parental participation and a relatively active involvement of the aide in working with Spanish-speaking children in particular.

With respect to teachers' language usage, the model goals were generally not met, as can be seen in Table 60. ALERTA identifies one teacher with one language in order to keep the two languages distinct. This ideal was met with the teacher, who spoke English almost exclusively but was not met with the aide, who was the Spanish language model but who generally spoke less Spanish than English. For none of the implementation periods in either class did the ratio of adults' English to Spanish approach the balance suggested by the ALERTA model. A number of factors affected the predominance of English as the language of the classroom (Table 60): (1) the teacher was dominant by position and in verbal interactions, while the aide had low visibility and little encouragement to actively interact with children in Spanish or reinforce their use of Spanish; (2) other staff (including the director and education director) were

Table 60. ALERTA II classroom language production by teaching unit.

| CLASSROOM A INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 40 | 0 | 0 | 0 | 40 | 63 | 0 | 0 | 0 | 63 | 63 | 0 | 0 | 0 | 63 |
| Aide | 26 | 26 | 4 | 4 | 60 | 27 | 4 | 4 | 2 | 37 | 25 | 12 | 0 | 0 | 37 |
| TOTAL | 66 | 26 | 4 | 4 | 100 | 90 | 4 | 4 | 2 | 100 | 88 | 12 | 0 | 0 | 100 |

| CLASSROOM B INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 40 | 0 | 0 | 0 | 40 | 53 | 0 | 0 | 0 | 53 | 50 | 1 | 0 | 0 | 51 |
| Aide | 10 | 37 | 13 | 0 | 60 | 12 | 35 | 0 | 0 | 47 | 46 | 2 | 0 | 1 | 49 |
| TOTAL | 50 | 37 | 13 | 0 | 100 | 65 | 35 | 0 | 0 | 100 | 96 | 3 | 0 | 1 | 100 |

English monolingual; and (3) English was the "majority" language of the wider community.

The greater use of Spanish in classroom B is associated with the presence of more Spanish-speaking children in that class. English was used in all activities, while the context of Spanish use was more restricted and came about primarily in directed large group and language group activities and, to lesser extent, on a one-to-one basis during meals and free play. The large groups were most often conducted only in English; however, since all children were included, these could be considered combined first and second language activities. As such activities included all children, quiet children who also tended to be the monolingual Spanish speakers were sometimes "lost" during the activities by not being attended to or called on. Little concurrent translation occurred as this was not important for the model, which was supposed to involve groupings according to children's language preference.

Informational statements were the principal mode of verbal interaction in both classes regardless of the language of instruction. These accounted for about 40% of all adult utterances, while direct commands and questions each comprised 25-30% of the remaining interactions. Verbal reinforcement accounted for less than 10% of all interactions; the teacher tended to use more negative reinforcement while the aide used similar amounts of positive and negative reinforcement.

The teacher and aide were observed to give an approximately equal number of commands, despite the greater number of teacher utterances overall. This suggests the importance of the aide during transitions and meals and in regulating free play. Some differences between the classes are evident, as in the greater use of commands and reinforcement in classroom A related to the greater classroom management problems with certain more active children in that class.

Adults at Site II included parents who were active in contributing to policy, education, and health questions through several parent and parent-staff committees. They were infrequently present in class, although the incorporation of parents into in-class activities is not specified by ALERTA as a necessary means by which the goals of multiculturalism and community-school links are to be achieved.

e. Instructional Strategies

The instructional strategies employed at ALERTA Site II remained relatively the same during the school year. The overall moderate scores reveal a greater emphasis on child-initiated activities compared with adult-directed instruction, an absence of second language activities, and sometimes an omission of large group activity. A midyear dip in classroom A and a steady decline in classroom B are evidence that

teachers tended to "let things slide" after a more energetic start when the school year began. By the end of the year, the "fatigue" factor appears to have been operating especially in classroom B.

On most days there was a mix of group and individual, active and quiet, and child-initiated and adult-directed activities. The predominant teaching strategy was one-to-one or informal small group work with some children while others pursued activities of their own choice. Adult interactions with children included some question-and-answer and open-ended discussion techniques but not on a regular basis. Review of activities was infrequent. Language development was thus relegated primarily to informal child-child and child-adult interactions in addition to large group interactions. Stories and some discussion during large group activities were augmented by songs.

Since free play was often extended to 75 minutes or more, socioemotional development was encouraged through independence and cooperation as children circulated on their own initiative and learned to share space and materials with others. Psychomotor skills, which comprise one of the three major goal domains of ALERTA, were prominent in manipulative, fantasy, dance, and outdoor activities play. Areas were arranged so that activities could be continued in different settings. There was no regular reinforcement or formal assessment of children's knowledge of numbers, infrequent clarifications of colors, and little emphasis on writing and reading readiness. The absence of preliteracy training corresponds to the lack of emphasis in ALERTA and the teacher's belief that this was inappropriate at the preschool level.

ALERTA calls for instruction primarily in the child's first language and for structured periods of both first and second language activities. At Site II, children were provided opportunity for first language retention and second language acquisition for English, but not for Spanish. Language activities are to be embedded in a general scheme of experimentation, observation, and review of what was tried. Observations were not done systematically, however, because teachers were not allotted time free from classroom obligations to concentrate on these. In addition, there was teacher resistance to setting up distinct language groups, relating to the above-mentioned reluctance to share equal instruction responsibility with the aide.

The following excerpt is from an evaluation researcher's field-notes. It illustrates various aspects of the implementation process at ALERTA II reflected in the preceding discussion.

Nicole, a Spanish-preferring bilingual child, and her English-preferring classmate Ernie are constructing an elaborate high-rise building with 2 x 4 blocks in the block area. Toy cars are in an imaginary ground-floor parking garage. Light and dark colored wooden figures of people stand and lie on three upper floors. The teacher who serves as the English language model enters the block area to observe. Ernie asks Nicole, "Is that the parking garage?" Nicole tells him, "No, that's the room for them to sleep in." She then identifies the standing figures, "You know what? They're having a meeting." When the teacher asks what kind of meeting, Nicole gives the location, saying it's in "Far Rockaway" (the nearest beach). Ernie explains that the people are having a meeting because there was a fire in the building. The teacher asks what the people will do. Nicole responds, "Put water." When the teacher asks what they would do about a fire at the Head Start center, Nicole repeats the same answer, "Put water." The teacher explains that first they would all walk outside. Nicole nods and adds, "And all of dem come, all the fire engines." She begins to move some figures and tells Ernie, "Come on. The peoples have to go to the meeting." She explains again to the teacher, "It was fire in the building, but we fixed it."

This sequence is typical of the way the model worked during independent play activities, which became quite extended at ALERTA II by the end of the year. Here the children were engaged in the manipulation of differently sized and shaped materials in the block area, in accordance with the model's goals for psychomotor development. The children used the multiethnic figures, appropriate to the multicultural make-up of the children. The predominant teaching strategy employed at ALERTA II was one-to-one work in an informal small group rather than planned adult-directed groupings. The teacher tried to reinforce the link between school and community by relating the child's experience at school to her symbolic creation. She did not, however, utilize the child-created situation to review concepts with the two children. As called for by the model, the activity provided the opportunity for children of different language preferences to interact informally. All speech, however, occurred in English; even the Spanish-preferring child addressed the teacher in English. As the English language model, the teacher responded appropriately in that language. In ways such as this, an imbalance of Spanish and English usage occurred naturally.

## C. Summary and Feasibility of Transfer

Owing to the inability of the two New York sites to identify sufficient numbers of comparison children, only descriptive statistics could be used in the analyses of the ALERTA sites. Descriptive statistics used to investigate the trends for Spanish-preferring children with different English entry-level abilities showed results similar to those found for other models; that is, the greatest mean gains were made by those children with little or no entry-level abilities when contrasted with comparison children. As the observational data show, the bilingual nature of the classroom allowed such children access to classroom learning situations in English.

In classroom observations, both groups exhibited an expanding grammatical repertoire in English. The Spanish-preferring groups also showed a pattern of expanded linguistic performance in their preferred language. The progress of English-preferring children in Spanish, however, due to limited practice in their second language, was limited to memorizing isolated lexical items, songs, and numbers, which was minimally reflected in qualitative and quantitative child measures.

Bilingual education was generally considered favorably by community residents and parents at both ALERTA sites. However, given the status of English as the national language and its association with higher-paying employment, some parents, both English-speaking and Spanish-speaking, expressed the desire for only English instruction in the classroom.

Teachers, like parents, were found to be supportive of ALERTA's goals. Teachers favored parental involvement and expressed confidence in the information parents provided to them. Instructors also viewed teaching children about Hispanic life, dress, songs, and dances as important and favored their incorporation into the curriculum.

Both sites were relatively successful in implementing the ALERTA model, especially in the areas of scheduling and organization, physical setting, and instructional materials. The experience of the evaluation suggests that it is possible to implement the ALERTA program in half-day sessions as was done at both sites. Double sessions, however, inhibited planning time and the individually based observations called for by the model, and at times led to teacher and student fatigue late in the year.

Overall implementation generally improved as a function of training in the model. This was especially true where training was of more than one day's duration. As the ALERTA II experience revealed, failure to provide such training and advice can lead to a situation where the staff is unclear about various aspects of the model, particularly the relation of their own ideas to model objectives.

The maintenance of separate language models called for by the model appears to be the most difficult aspect of the curriculum to implement. At both sites there was a predominance of the majority language (in this case English) being spoken even by teachers whose first language was Spanish. English generally predominated in all formal group activities, even those designated by the model to be conducted in Spanish, whereas informal child-adult interactions were usually carried out in the preferred language of the monolingual children and in English with bilinguals. This explains the finding of better performance on the English measures for the ALERTA children.

The location of both sites within churches, which allowed for space within the building but outside the classroom for such features as a large-muscle area, kitchen facilites, a parents' room, and a teachers' room, may not be readily available in many urban Head Start settings. Involving parents, furnishing an environment for teachers to plan, and adjusting for inclement weather may prove difficult in other settings.

## FOOTNOTES

[1]The four Spanish-preferring control children at Site I exhibited increased posttest scores on three of the four English measures and four of seven Spanish measures. The two Spanish-preferring children showed increases on one of the four English measures and five of seven Spanish measures (see Appendix C).

[2]The four English-preferring children at Site I increased their posttest scores on four of the seven English measure and all four Spanish measures (see Appendix C).

[3]The extensive use of English by Judith in the classroom combined with the talkativeness of one English-preferring girl -- Elizabeth -- is a prime factor in the unexpectedly low correlation between classroom observations and test results in EMLU (see Appendix X). Their rankings of first and second, respectively, in the classroom observations were not reflected in their fairly low performance, ninth and eighth, respectively, on the tests in this area, suggesting that the test situation for these two children may have been an inhibiting factor.

[4]High correlations between test results and classroom observations on the measures of English and Spanish concept development suggest the similarity of concept skills being tapped in the two contexts.

# VII

## UNIVERSITY OF CALIFORNIA, SANTA CRUZ: NUEVAS FRONTERAS

The Nuevas Fronteras curriculum model was developed at the University of California, Santa Cruz. This model is based on the assumption that children from different cultures develop different learning styles as a function of their varied cultural experiences. The principal objective of the model is to help preschool children develop learning styles that are compatible with learning in more than one cultural or linguistic setting. To aid children in becoming bilingual, concurrent use of both languages is employed in the classroom. However, experiences or concepts are first introduced and discussed in the child's primary language. Children receive structured experiences in the second language through daily English as a second language and Spanish as a second language small group sessions. Informal second language experiences occur through situations in which Spanish-preferring children interact with their English-preferring peers. Basic preliteracy skills are developed in conjunction with language and concept learning through number, letter, and name recognition, looking at books, and writing practice.

The results of the evaluation of the Nuevas Fronteras model are the subject of this chapter. The findings of the study are presented in three sections. In the first section, the impact of the model on children, parents, and teachers is discussed. The second section describes the implementation findings. The third section is an integration of the impact and implementation findings.

### A. Impact of the Model

This section discusses the children's test performance and observed behaviors within the classroom and the attitudinal changes of parents and teachers over the course of the evaluation year. Each of the outcome subsections is introduced by a short discussion of the basic characteristics of the sample. This is followed by an extensive explanation of the results.

#### 1. Child Outcomes

##### a. Child Sample

The Nuevas Fronteras evaluation sample was drawn from Rio Grande City, Texas (Site I), and Corona, California (Site II). The Site I sample consisted of 32 experimental children and a regular

Head Start comparison group of 35 children. Site II had 32 experimental and 36 regular Head Start comparison children.

At Site I, the children were primarily Spanish preferring (31 of 32 experimental children and 34 of 35 comparison children). At Site II, 22 of 32 experimental children and 20 out of 36 comparison children preferred English. All children at Site I were of Hispanic background. At Site II, nine of the experimental children and eight of the comparison children were non-Hispanic. At Site I, 19 of the experimental and 18 of the 35 comparison children were females. At Site II, 17 of the 32 experimental and 19 of the 36 comparison children were males.

b. Test Results

(1) Spanish-preferring Children. At the beginning and end of the Head Start year, the children were administered a series of standardized tests to assess their linguistic, cognitive, and perceptual motor development. In addition, the children's socioemotional behavior during testing was assessed by a tester's rating form. Cell size was sufficient to allow a comparison of Spanish-preferring Nuevas Fronteras children to comparison children across the two sites. The analyses, presented in Table 61, revealed a single significant difference favoring the experimental children on the construct of Concept Development in Spanish. When analyses were conducted at the level of the individual sites, results showed that at Site I the experimental children significantly outperformed the comparison children on the measure of Spanish Language Acquisition and were favored over the comparison group at the .1 level of significance on the measure of English Comprehension. No significant differences favoring either the Spanish-preferring experimental or comparison groups were found at Site II.

At Site I, Spanish-preferring experimental children who had limited or no English abilities when they entered Head Start were contrasted with a similar sample of comparison children. As shown in Table 62, significant differences favored the experimental children on measures of Spanish acquisition and English comprehension. A lack of variance in the comparison group precluded analyzing the scores on English acquisition through the use of analysis of variance or covariance. Contingency tables, however, revealed significant change favoring the experimental children on this measure. Fifteen (15) of 28 experimental children had posttest scores of greater than zero with a mean of 1.33 on this measure. By comparison only five (5) of 31 comparison children had scores greater than zero ($\bar{x}$ = .63). Although the children at Rio Grande City were observed to use mostly Spanish throughout the year, the multiple language input provided by the bilingual bicultural curriculum to children who entered the program with some understanding of English is reflected in these children's significantly better performance in English comprehension. Likewise,

Table 61. Nuevas Fronteras Model-level ANCOVA and ANOVA results for Spanish-preferring children. Experimental and comparison Head Start children at both sites were compared on six constructs controlling for the effect of site.[1]

| CHILD MEASURES | SIGNIFICANCE[2] Treatment | Site | Interaction | COVARIATES[3] | POSTTEST MEANS[4] (STD. ERROR OF MEAN) N = NUMBER OF SUBJECTS: EXPERIMENTAL HEAD START-SITES I & II | COMPARISON HEAD START-SITES I & II | EXPERIMENTAL & COMPARISON HEAD START SITE II | EXPERIMENTAL & COMPARISON HEAD START SITE |
|---|---|---|---|---|---|---|---|---|
| 1. LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE | | | | | | | | |
| Spanish Mean Length of Utterance | ns | ns | ns | PRETEST | 3.98(0.13) N = 40 | 4.01(0.12) N = 48 | | |
| English Mean Length of Utterance | □ | | | | 1.15(0.23) N = 38 | 0.70(0.19) N = 49 | | |
| 2. LANGUAGE COMPREHENSION-ESCUCHEN ESTE CUENTO -LISTEN TO THE STORY | | | | | | | | |
| Spanish | ns | ns | ns | INC. | 8.69(0.44) N = 27 | 8.50(0.36) N = 41 | | |
| English[5] | △ | ns | ns | PTCH | 8.68(0.56) N = 31 | 7.38(0.47) N = 42 | | |
| 3. LANGUAGE PRODUCTION-DIMELO TU | | | | | | | | |
| Quantity of Spanish Words | ns | ns | ns | | 51.50(4.02) N = 40 | 45.69(3.31) N = 49 | | |
| Object Description Scale | ns | ns | ns | AGE | 4.61(0.19) N = 40 | 4.36(0.17) N = 49 | | |
| Narration Description Scale | ns | ns | ns | PRETEST | 12.26(0.49) N = 40 | 12.42(0.44) N = 49 | | |
| 4. CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY | | | | | | | | |
| Spanish Scale | * | ns | * | PRETEST, PTCH | 19.36(0.62) N = 31 | 16.88(0.52) N = 42 | 18.39(0.65) N = 25 | 17.85(0.47) N = 48 |
| English Scale | * | * | ns | FAC,INC | 11.36(1.17) N = 27 | 10.03(0.84) N = 41 | 14.00(1.28) N = 22 | 7.38(0.79) N = 46 |
| 5. PERCEPTUAL MOTOR DEVELOPMENT | | | | | | | | |
| Spanish Scale | □ | | | | 3.82(0.06) N = 40 | 3.92(0.05) N = 49 | | |
| English Scale | ns | ns | ns | FAC,INC | 2.04(0.28) N = 27 | 2.12(0.23) N = 41 | | |
| 6. SOCIOEMOTIONAL BEHAVIOR-TESTER CHECKLIST | | | | | | | | |
| Socioemotional Functioning | ns | ns | ns | | 18.87(0.65) N = 39 | 18.53(0.43) N = 49 | | |

[1] Statistical comparisons were either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; no entry in this column indicates that the statistical test employed was ANOVA. Test measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a □ mark in the "significance" columns.

[2] The following symbols are used to depict significance:
* $p \leq .0500$
△ $.0500 < p < .1000$
ns $.1000 < p$
□ significance not computed

[3] Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income), 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

[4] Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

[5] Covariates initially selected to adjust posttest scores on this dependent variable were dropped because their regression slopes were heterogeneous within cells of the model. Where possible other covariates were selected.

Table 62. Nuevas Fronteras Site I comparison of Spanish-preferring children grouped by English entry level ability. Experimental[1] and comparison Head Start children were compared on selected constructs.

| CHILD MEASURES | SIGNIFICANCE[2] Treatment | COVARIATES[3] | POSTTEST MEANS[4] (STD. ERROR OF MEAN) n = NUMBER OF SUBJECTS EXPERIMENTAL HEAD START | COMPARISON HEAD START |
|---|---|---|---|---|
| | | | SPANISH-PREFERRING GROUP$_1$ | |
| LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE | | | | |
| Spanish Mean Length of Utterance | ● | EDASP | 4.18 (0.14) n = 20 | 3.70 (0.13) n = 24 |
| English Mean Length of Utterance | □ | | 0.64 (0.19) n = 28 | 0.12 (0.07) n = 31 |
| CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY | | | | |
| Spanish Scale | NS | PRETEST | 18.05 (0.72) n = 20 | 17.09 (0.66) n = 29 |
| English Scale | NS | PRETEST, FAC | 6.86 (0.96) n = 19 | 5.86 (0.89) n = 22 |
| | | | SPANISH-PREFERRING GROUP$_2$ | |
| LANGUAGE COMPREHENSION-ENCUENTRE ESTE CUENTO ESCUCHE LA HISTORIA / LISTEN TO THE STORY | | | | |
| Spanish | NS | AGE, PRESENT | 8.64 (0.58) n = 23 | 8.32 (0.47) n = 28 |
| English | ● | AGE, PTCH | 8.28 (0.68) n = 18 | 6.43 (0.56) n = 21 |

[1]Statistical comparisons used either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; no entry in this column indicates that the statistical test employed was ANOVA. Eight measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a □ mark in the "significance" columns. Children were grouped by English entry level ability as follows: Spanish-preferring Group includes all children who showed little or no ability on the English pretest measures (ENLB = 0, PSIE ≤ 3, ECOMP ≤ 3). Spanish-preferring Group includes all children who demonstrated some ability in English on the pretest measures (ENLB > 0, PSIE > 3, ECOMP > 3).

[2]The following symbols are used to depict significance

● $p \leq .0500$
△ $.0500 < p \leq .1000$
NS $.1000 < p$
□ significance not computed

[3]Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income), 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

[4]Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

the consistent practice the largely Spanish monolingual children at Rio Grande City were observed to receive in their second language can be related to the significant number of such children who were able to demonstrate some linguistic competence in English at posttest. Surprisingly, the extensive practice that these children were observed to receive with concepts was not reflected on the outcome measures. This may be a result of the fact that preliteracy and premath skills stressed by the model were not directly related to those developmental abilities tapped by the tests. Such an interpretation is supported by the low rank order correlations (Appendix W) found between children's posttest scores and their observed behavior related to this construct.

(2) English-preferring Children. Due to the limited number of English-preferring children at Site I, statistical comparisons for English-preferring children were limited to Site II. As can be seen from Table 63, English-preferring experimental children at this site outperformed the comparison group on the measure of English Comprehension. No significant differences were found favoring the comparison children. This suggests that not only were there no negative effects in terms of first language development for English-preferring children who participated in the bilingual bicultural model but that the emphasis given to recitation and recall by the Nuevas Fronteras model contributed to development of comprehension abilities beyond those developed in a Head Start program without such a model. With the exception of Spanish Comprehension, posttest scores for both groups of children on the Spanish measures remained at or near zero.

c. Classroom Observations

The subset of 12 experimental children at Nuevas Fronteras I, which was the object of focused ethnographic observations at three times during the course of the preschool year, was composed of nine Spanish-preferring children and three English-preferring youngsters. The three cognitive styles recognized by the model -- field sensitive, field independent, and balanced -- were equally represented among the seven male and five female subsample children. Frequency counts of their classroom behavior in the areas of language usage, concept development, and socioemotional functioning provide a qualitative base against which to view test results.

(1) Language Usage. Figure 8 depicts the overall classroom language usage patterns for subsample children during each of the three observation periods. Throughout the year all children received extensive practice with Spanish. There was, however, a consistent trend toward decreased use of Spanish in the classroom for both Spanish-preferring children (98% to 77% Spanish interactions) and their English-preferring peers (81% to 65% Spanish interactions). Children's language

Table 63. Nuevas Fronteras Site II ANCOVA and ANOVA results for English-preferring children. Experimental and comparison Head Start children were compared on six constructs. [1]

| CHILD MEASURES | SIGNIFICANCE[2] Treatment | COVARIATES[3] | POSTTEST MEANS[4] (STD. ERROR OF MEAN) N = NUMBER OF SUBJECTS EXPERIMENTAL HEAD START | COMPARISON HEAD START |
|---|---|---|---|---|
| **1. LANGUAGE ACQUISITION-BILINGUAL SYNTAX MEASURE** | | | | |
| Spanish Mean Length of Utterance | □ | | 0.00 (0.00) N=21 | 0.01 (0.01) N = 20 |
| English Mean Length of Utterance | ns | PRETEST | 3.70 (0.20) N = 21 | 3.30 (0.21) N = 20 |
| **2. LANGUAGE COMPREHENSION-[illegible]** | | | | |
| Spanish | ns | PRETEST INC | 6.30 (0.73) N = 19 | 6.25 (0.76) N = 18 |
| English | ● | PRETEST, AGE | 9.67 (0.67) N = 21 | 7.74 (0.69) N = 20 |
| **3. LANGUAGE PRODUCTION-YOU SAY IT** | | | | |
| Quantity of English Words[5] | ns | PRETEST | 30.35 (4.12) N = 21 | 40.63 (4.22) N = 20 |
| Object Description Scale | ns | PRETEST | 3.05 (0.19) N = 21 | 3.05 (0.20) N = 20 |
| Narration Description Scale | ns | PRETEST | 12.13 (0.68) N = 21 | 11.65 (0.70) N = 20 |
| **4. CONCEPT DEVELOPMENT-PRESCHOOL INVENTORY** | | | | |
| Spanish Scale | □ | | 1.05 (1.08) N = 20 | 2.90 (1.13) N = 20 |
| English Scale[5] | ns | AGE | 21.36 (0.70) N = 21 | 20.27 (0.72) N = 20 |
| **5. PERCEPTUAL MOTOR DEVELOPMENT** | | | | |
| Spanish Scale | □ | | 0.19 (0.19) N = 21 | 1.00 (0.36) N = 20 |
| English Scale | □ | | 3.05 (0.00) N = 21 | 3.00 (0.00) N = 20 |
| **6. SOCIOEMOTIONAL BEHAVIOR-TESTER CHECKLIST** | | | | |
| Socioemotional Functioning | ns | PTCH | 19.01 (0.92) N = 21 | 20.20 (.94) N = 20 |

[1] Statistical comparisons were either ANOVA or ANCOVA. Covariates used in ANCOVAs are listed in the column "covariates"; an entry in this column indicates that the statistical test employed was ANCOVA. Test measures for which no statistical comparisons were made because distributions did not allow for parametric tests are indicated by a ns mark in the "significance" columns.

[2] The following symbols are used to depict significance

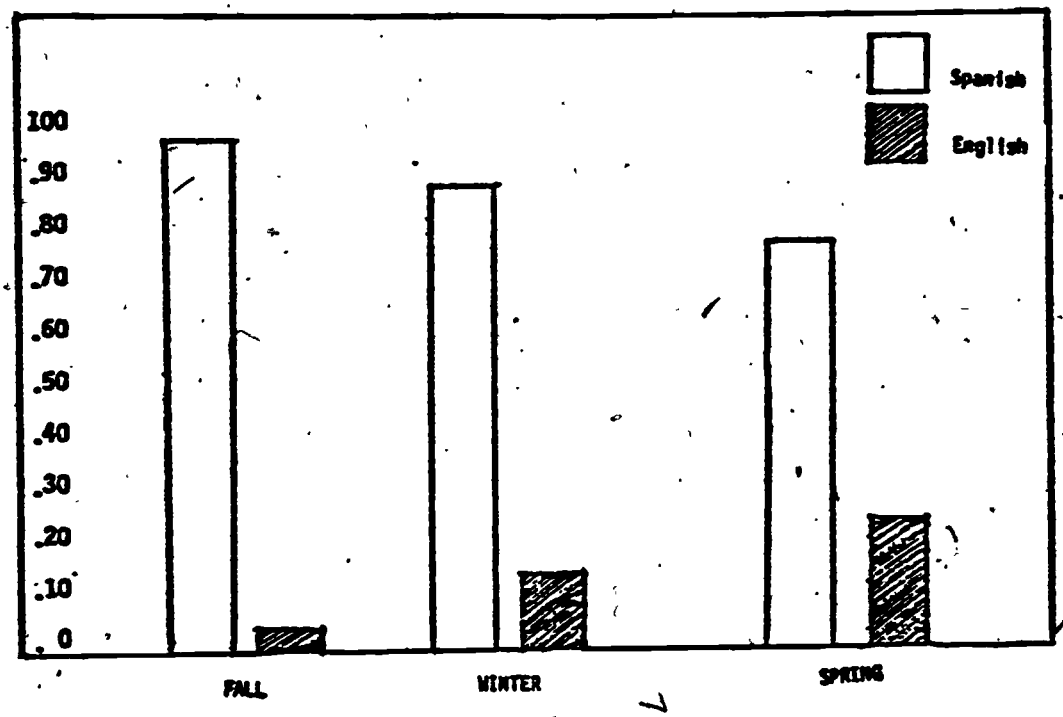
● $p \leq .0500$
Δ $.0500 < p \leq .1000$
ns $.1000 < p$
□ significance not computed

[3] Covariates are identified by the following numbers: 1. AGE (Child Age), 2. FAC (Language Environment Factor), 3. INC (Income), 4. EDASP (Education Aspirations of Parent), 5. PRESENT (Attendance Record of Child), 6. PTCH (Teaching by Parent at Home), 7. PRETEST (Score on Individual Pretest Measure).

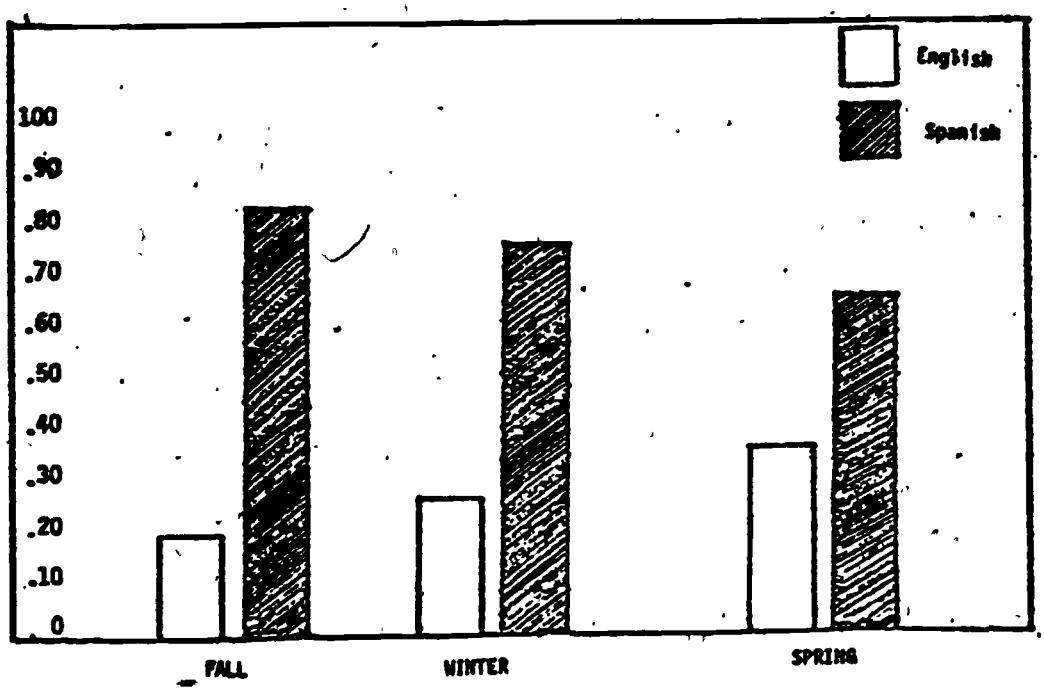
[4] Means are adjusted for covariates if the ANCOVA technique was used; unadjusted otherwise.

[5] Covariates initially selected to adjust posttest scores on this dependent variable were dropped because their regression slopes were heterogeneous within cells of the model. Where possible other covariates were selected.

Figure 8, Classroom observations of child language use were obtained for a subsample of Spanish-preferring and English-preferring children during Fall, Winter, and Spring. The figure below shows the proportion of Spanish and English in Nuevas Fronteras subsample children's language use over time.




Spanish-preferring children




English-preferring children

usage patterns reflected here correspond to findings presented in the implementation section which show that the language environment of the Nuevas Fronteras classroom and community of Rio Grande City was primarily Spanish.[2]

An analysis of the experiences of individual children, presented in Table 64, reveals that all of the Spanish-preferring children increased their proportion of English usage over the year. There were, however, considerable differences ranging from 31% to 1% in the amount of increase.

The general case at Nuevas Fronteras I was represented by the seven children -- Linda, Arturo, Ray, Juan, Odon, Nelda, and Evelyn -- who did not begin to interact in English to any significant degree (11 to 25%) until the latter part of the year. The two remaining Spanish-preferring subsample children -- Bonita and Miguel -- varied from this general pattern in contrasting ways. Bonita was the only child of the group who was observed to interact a significant amount of time (29%) in English by the second observation period. She also showed the greatest increase in English use (31%) from the beginning to the end of the preschool year. At the other extreme was Miguel, who throughout the year interacted almost totally in his preferred language.

The pattern of variability in children's classroom language use appeared to be related to the level of linguistic development at which the children entered school and to the frequency of individual input directed to the children at an early stage. Bonita was the only Spanish-preferring child to begin the preschool year with pretest scores indicating productive abilities in English. The eight remaining Spanish-preferring children were unable to meet the minimum criterion for scoring on the english acquisition measure. All, however, received a score in english comprehension on the pretest, indicating some receptive ability in that language. Given the lack of English-preferring children in the Site I classrooms, the amount of direct English input received by the children was mainly dependent on the teachers. As evident from Table 65, only three of the Spanish-preferring subsample children were addressed in English with any frequency by the teachers at the beginning of the year. It was these same children -- Bonita, Linda, and Arturo -- who underwent the greatest change in classroom language use patterns over the course of the year. Most other subsample children began receiving input addressed directly to them by teachers or peers in English only at the second observation period. Miguel, one of two children for whom this was not the case, was rarely addressed in English by his peers throughout the entire year and had the lowest percentage of English addressed to him by the teachers (16%) at the last observation period. He also had a somewhat irregular attendance pattern and tended to interact more frequently with adults than with his peers in the classroom.

Examination of language interaction data shows that the increase in English language use was primarily in the form of incomplete

Table 64. Relative frequency of observed usage of Spanish and English by individual subsample children over three points in time: Nuevas Fronteras[1].

| | SPANISH | | | ENGLISH | | | LANGUAGE MIXING[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | I | II | III | I | II | III | I | II | III |
| | % | % | % | % | % | % | % | % | % |
| **Spanish-Preferring** | | | | | | | | | |
| Miguel | 87 | 99 | 93 | 0 | 0 | 1 | 13 | 1 | 6 |
| Evelyn | 100 | 91 | 85 | 0 | 1 | 11 | 0 | 7 | 4 |
| Nalda | 100 | 100 | 82 | 0 | 0 | 12 | 0 | 0 | 6 |
| Odon | 100 | 100 | 83 | 0 | 0 | 13 | 0 | 0 | 4 |
| Juan | 100 | 100 | 82 | 0 | 0 | 15 | 0 | 0 | 3 |
| Ray | 100 | 90 | 76 | 0 | 5 | 27 | 0 | 5 | 7 |
| Arturo | 100 | 84 | 79 | 0 | 8 | 21 | 0 | 8 | 0 |
| Linda | 96 | 92 | 71 | 0 | 0 | 24 | 4 | 8 | 5 |
| Bonita | 97 | 62 | 62 | 0 | 29 | 31 | 3 | 9 | 7 |
| **English-Preferring** | % | % | % | % | % | % | % | % | % |
| Alberto | 55 | 27 | 30 | 45 | 73 | 61 | 0 | 0 | 9 |
| Janet | 87 | 91 | 64 | 5 | 5 | 30 | 0 | 5 | 6 |
| Tommy | 40 | 80 | 66 | 60 | 20 | 30 | 0 | 0 | 4 |

[1]Percentage totals may not equal 100% due to rounding.

[2]Indicates switching of languages within a single sentence or phrase (e.g. No das un millon).

Table 65. Proportion of observed Spanish and English input directed to individual subsample children by teachers and peers over three points in time: Nuevas Fronteras.[1]

SPANISH-PREFERRING

| CHILD'S NAME | | MIGUEL | | EVELYN | | HILDA | | ROSA | | JUAN | | RAY | | ARTURO | | LIDIA | | BONITA | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. |
| TIME ONE | TEACHER | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 67 | 33 | 80 | 20 | 93 | 7 |
| | PEER | 100 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 90 | 10 | 100 | 0 |
| | OVERALL | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 84 | 16 | 87 | 13 | 96 | 4 |
| TIME TWO | TEACHER | 100 | 0 | 91 | 9 | 90 | 10 | 76 | 24 | 100 | 0 | 32 | 68 | 67 | 33 | 73 | 27 | 33 | 67 |
| | PEER | 100 | 0 | 100 | 0 | 100 | 0 | 71 | 29 | 100 | 0 | 86 | 14 | 86 | 6 | 88 | 12 | 88 | 12 |
| | OVERALL | 100 | 0 | 94 | 6 | 94 | 6 | 74 | 26 | 100 | 0 | 56 | 44 | 87 | 13 | 83 | 17 | 44 | 56 |
| TIME THREE | TEACHER | 89 | 16 | 83 | 17 | 76 | 24 | 89 | 31 | 89 | 20 | 48 | 52 | 48 | 52 | 71 | 29 | 37 | 63 |
| | PEER | 100 | 0 | 88 | 12 | 97 | 3 | 100 | 0 | 100 | 0 | 96 | 4 | 89 | 12 | 85 | 15 | 83 | 17 |
| | OVERALL | 87 | 13 | 85 | 15 | 85 | 15 | 85 | 15 | 86 | 14 | 69 | 31 | 84 | 16 | 79 | 21 | 49 | 51 |

ENGLISH-PREFERRING

| ALBERTO | | JANET | | TONY | |
|---|---|---|---|---|---|
| % SP. | % ENG. | % SP. | % ENG. | % SP. | % ENG. |
| 50 | 50 | 50 | 50 | 50 | 50 |
| 75 | 25 | 73 | 27 | 100 | 0 |
| 67 | 33 | 64 | 36 | 83 | 17 |
| 30 | 70 | 84 | 16 | 46 | 54 |
| 86 | 14 | 86 | 14 | 100 | 0 |
| 44 | 56 | 86 | 36 | 52 | 48 |
| 43 | 57 | 31 | 69 | 58 | 42 |
| 27 | 73 | 79 | 21 | 94 | 6 |
| 36 | 64 | 60 | 40 | 69 | 31 |

[1] Percentage totals may not equal 100% due to rounding.

utterances (see Appendix P). This probably indicates the effect of the children's expanded lexical repertoire in their second language. In addition, an increase in language mixing by seven of the nine subsample children supports the idea that the children were using isolated loan words in English in their basically Spanish sentences. Almost half of the children increased their practice with plural nouns in English also. Remaining gains, however, were made mainly by one or two children. Similarly, indications that the children were acquiring functional competence in their second language were limited to two children who were on two occasions observed using English to give verbal instructions.

The Spanish-preferring children's progress in Spanish, however, was more generalized. Over the course of the year, all subsample children exhibited use of a greater variety of grammatical structures such that by the third observation period, most of the children had increased their verbal output in the majority of observational categories in the area of linguistic competence.. These included more extensive use of the negative and interrogative forms, the present, past, and future tenses, and complete sentences.

Data in the area of functional competence, presented in Appendix O, show that generally the children did not receive extensive practice in this area. The category in which most children expanded their practice was in giving verbal instructions; only a few children diversified their experience to include descriptions of themselves or others.

Observational data for the three English-preferring subsample children indicated that each of the children had acquired a substantial amount of Spanish prior to entering preschool (see Table 64). The functional competence of Janet, for example, was attested to by her use of Spanish for both descriptions and directives at the first observation period (see Appendix P).

Over the course of the year, the direct input provided by teachers to each of the English-preferring subsample children was relatively uniform (approximately equal totals of Spanish and English). The direct language input provided to them by peers was largely in Spanish and appeared to be crucial in determining language use. Observational data in Table 65 show that Tommy was the only one of the three English-preferring subsample children who had almost totally Spanish input directed to him by his peers. Alberto, on the other hand, was the only one of the group who had another English- (non-subsample) preferring peer in his classroom. The effect of a growing friendship with his English-preferring classmate is evident in the fact that by the third observation period 73% of the peer input directed to him was in English.

An examination of the types of language interactions engaged in by individual children (Appendix P) suggests that except for Janet, who exhibited diversified grammatical and functional abilities in her second

language at the beginning of the year, the English-preferring group by the end of the year was receiving more varied and frequent practice with the negative and interrogative forms and present tense in Spanish. In their preferred language, the English-preferring children exhibited a similar pattern. Two of three children expanded practice with a variety of grammatical forms -- including plural nouns, the interrogative form, and the past tense. The increase of two of the three children in practice with incomplete sentences corresponded to the trend with Spanish-preferring children. It was probably a result of more frequent questions in English by the teachers in the drills on number and letter or word recognition suggested by the model, to which the children appropriately responded with single words and phrases. Few instances of practice with functional competence in their preferred language were observed for these children at any time during the preschool year.

Although observations for individual children were limited, children's practice in the area of recall/comprehension, depicted in Appendix Q, corresponded to the general language usage patterns of the classroom. For both the Spanish- and English-preferring groups, the majority of children increased their practice in Spanish rather than in English. Recall and comprehension practice was largely limited to the areas of recalling outstanding events from a story and providing details about the classroom. A third frequent recall task undertaken by both groups was recitation of rhymes and singing of songs, a practice emphasized by the model. Despite the Spanish-preferring children's increase in the general use of English, discussed earlier, when the children were required to employ the complete syntax required by such processes as relating the sequence of events, they would resort to their preferred language. There was, however, some indication of the improved English comprehension of four of the nine Spanish-preferring children in the decrease in incorrect responses in terms of content in that language which occurred from the second to the third observation period.[3]

Verbal interaction of both groups of children was most frequent during the two morning small group activities aimed at specific curricular objectives. Lunch period, too, provided a context in which the children tended to converse in Spanish with their peers. A review of a sample of interactions for two Spanish-preferring children who developed distinct patterns of language usage illustrates the experiences of children of this language preference.

Arturo was typical of most Spanish-preferring children at Nuevas Fronteras. He adapted fairly quickly to the classroom environment and usually participated in most activities. In independent groups he showed his sociability by frequently conversing with his companions. At the beginning of the year Arturo performed like most of his Spanish-preferring peers on the standardized tests. He exhibited no productive ability in his second language, and scored minimally in English comprehension and concept development.

The conversation below was taken from a small group session at the beginning of the year. Arturo, together with five Spanish-preferring peers, was seated around a table in the art area cutting out pictures from catalogues.

Sara : (Finding a suitable picture in the catalogue.)
La voy a cortar.
Bonita: (Holding a picture of a car.)
Mira este car.
Ray : Un car mío.
Bonita: Y tú no vas a cortar.
Arturo: (Following up on the topic of cars, and addressing Robert.)
Tu papá compró un carro viejo.
Ray : ¿Mi papi?

Spontaneous conversation happened frequently during small group sessions such as this. The children spoke totally in Spanish except for use of the word "car," which was introduced by Bonita, the child who demonstrated the most productive ability in English. Arturo, however, unlike Ray, did not incorporate the English usage and spoke totally in Spanish which included correct use of past tense.

By the end of the year Arturo was using more English, but mainly in the form of isolated lexical items. This was exemplified in the following language sample which was taken from a large group story-telling session. The teacher was using the story about a Mother's Day visit as English vocabulary review and comprehension practice.

Teacher: (Models the names of the characters in the story.)
Arturo : (Repeating.)
Mrs. Rivas.
Joana's grandmother.
(Fidgets for a while without repeating and then continues.)
(Hos)pital.
Teacher: (Asks a question about when the visit occurs and calls on Arturo.)
Arturo : In the morning. In the morning.
Teacher: (Asks the group a question about what the children in the story gave to their mothers.)
Arturo : (With hands in his mouth.)
Cards.
Teacher: Quítate las manos de la boca . . .
(And continues to explain in Spanish why children should not put their hands in their mouths.

Arturo : (Folds his hands in front of him and then returns his attention to the continuing lesson.)
Bus. School bus.
Teacher: (Asks who rides the bus to raise their hands.)
Arturo : (Raises his hand.)
Teacher: . . . and Arturo rides the bus.

Here the teacher was using questions to help the children recall the events and characters of a story, in their second language. She also tried to relate the children's experience to the story. To discipline and give an explanation of health habits, however, the teacher addressed Arturo in Spanish. Arturo responded appropriately, indicating his comprehension of the story and the question. His answers, however, were limited to single words or short phrases.

On the same day, in lunchroom conversation with his peers, Arturo engaged totally in Spanish conversation, as he had done at the beginning of the year in small-group activities:

Arturo: (After talking in Spanish to the Spanish-preferring girl next to him, he sips milk from the carton which leaves a moustache of milk on his face. He asks a Spanish-preferring peer:)
¿Tengo bigote?
(Looking around at the other tables and then continuing to eat, he asks of the girl next to him who hasn't finished eating her meat:)
¿Tu quieres carne? . . . ¿no le gusta la carne?

Arturo's continued Spanish language preference is evident here. In spontaneous conversation, Arturo spoke Spanish, in which he used complete sentences to effectively request information from his companions. His language development was also reflected in his test results where he improved more dramatically in Spanish language measures. In English, he continued to show little or no productive ability on the language acquisition measure, although he made major gains in English comprehension and concept development.

Bonita, an attractive girl with stunning, large dark eyes, contrasted with Arturo and most Spanish-preferring children at Rio Grande. Although she was one of the younger children in her class, the teachers considered her to be one of the brighter children. She was attentive in all classroom activities and often spontaneously answered questions out

of turn in her eagerness to participate. Although she was Spanish-preferring, her mother and older siblings spoke to her in English at times, which perhaps explains in part why she entered the program with some productive ability in her second language as measured in the pre-test. She also had an English-preferring "boyfriend" in her class, the pronunciation of whose name by her classmates she periodically corrected.

Since the overwhelming majority of her classmates were Spanish preferring and the general language environment was Spanish, by the end of the year she continued to speak her preferred language most (62%) of the time. Unlike her classmates, however, she exhibited functional abilities in her second language. For example, one day while eating chicken at mealtime she asked her "boyfriend": "You like crispy, Tommy? Do you like that?" Although she omitted the noun referent for "crispy," her meaning was clear. She was able to talk in complete sentences and use yes-no questions in English.

A large group activity late in the year which involved the identification of vocabulary for colors and animals illustrates again her pattern of development:

| | |
|---|---|
| Teacher: | What color is the bat? |
| Bonita : | Black . . . vampiros . . . and gray . . . acá. (Pointing to her neck.) |
| Teacher: | (Continues the exercise by holding up colored animal cards and asking:) "What color . . .?" |
| Bonita : | (Continues with her rapid identification:) Baby cow. Brown and white . . . Donkey. Los ojos black. The corn es yellow. Boat, alligator, seal, shark, rooster . . . |
| Teacher: | (Finally, the teacher tires of Bonita's enthusiasm, which tends to intimidate the other children, and she complains:) No más, Bonita. Di Uds (sic) tambien. |

Here the teacher used a series of pictorial aids and WH questions to elicit short responses requiring knowledge of English concepts. Bonita exhibited mastery of a surprising number and variety of English lexical items. Even though her use of the article was variable (e.g., "red bird" versus "the corn"), she used correct word order, preceding the noun with the adjective. Although not required by the context, Bonita spontaneously used a complete sentence ("The corn es yellow"), mixing languages as she did so. Thus, by the end of the year, the child was able to respond to the varied and more complex English forms

being directed to her by the teachers, as well as meet her communicative needs. This was supported by her test scores at the end of the year, which indicated substantial increases in her productive and receptive abilities in English but still superior performance in her preferred language.

Given the limited number of English-preferring children at the Rio Grande site and the general similarity of their experiences, an example of one English-preferring child is sufficient to characterize classroom interactions.

Tommy was a short boy with curly, sandy hair and a medium build. Although at first he eagerly participated in class activities, being especially attentive when the activity was led by the teacher, toward the end of the year he became disinterested and apathetic, at times causing discipline problems in class. Despite Tommy's Spanish surname, his preferred language was English and he reportedly knew little Spanish when he returned to Texas from out of state shortly after the beginning of the school year.

When Tommy entered the classroom he exhibited a good receptive ability in Spanish. With his peers he tended to speak Spanish as he had no English-preferring classmates in his room. Given his growing bilingual ability, the teacher at the beginning of the year tended to speak an equal proportion of English and Spanish with him, as was recommended by the model. In these situations with teachers, Tommy's English language preference became evident. This was seen in the following example of his speech taken from a curriculum lesson on shapes early in the year:

Teacher: Esto, ¿qué es?
(Holds up a square.)
Tommy : Square.
Teacher: Muy bien. Cuadrado.
Tommy : Cuadrado.

Here the teacher reinforced in Spanish his correct answer in English. She provided him with a model for the correct lexical item in Spanish, which Tommy subsequently repeated. His tendency to engage in repetition was exhibited a few minutes later in conversation with a peer. When, upon finishing his lesson in shapes, he playfully took his young classmate's lipstick, she ordered "Dámelo, Tommy." Tommy tried to echo her, but produced only a partially successful "dámelo," accenting both the first and last syllables of the complex command. Although he preferred English in his speech with the teacher early in the year, he was observed communicating with his Spanish-preferring peers in Spanish and took advantage of the input of both adults and children in the classroom to practice his second language.

After seven months in the Nuevas Fronteras program, Tommy was willing and able to respond to the teacher's questions in Spanish, using

much more varied and advanced vocabulary. This trend was evident in his successful response to the teacher's WH questions checking comprehension of the story of "The Three Pigs" in Spanish. In this instance, Tommy was observed to utter such statements as "era de ladrillo" and "en la chimenea" when recalling the material of the house. Similarly, his Spanish with his peers manifested an increase in the number of complete statements in that language and in his ability to effectively give directives, describe the classroom environment, and ask questions:

Tommy : (Tommy is at a table with three classmates -- Richard, Orlando, and Alberto -- working with paper and clay. He looks up periodically from his work to watch Alberto roll clay.)
Mira, otra.
Richard: Oh, mía.
Tommy : . . . y tú también, Orlando.
(Tommy stands up to watch Alberto at work, then returns to his own work and asks Orlando:)
¿Qué?
(He hits the hand of Alberto, who was disturbing his clay.)
Richard: ¿Qué fué?
Tommy : (Takes Alberto's clay.)
. . . dale.
(Pulls apart one of Alberto's clay baskets, and teasingly announces:)
Allí está. Está bonita, ¿verdad?
(And then to Richard:)
Dame uno.
(He takes one of Richard's clay airplanes and imitates the roar of the engines.)
Mira, mira, Richard. Mira. Yo no . . .
(Takes apart and reconstructs the clay airplane.)
Mira el mío.
(Holds up clay airplane.)

While Tommy's Spanish was improving he maintained his receptive and productive abilities in English. As opposed to the beginning of the year, he now tended to respond to questions and directives of the teacher in the language in which he was addressed. The following exchange was observed during a curriculum lesson involving numbers:

Tommy : (Writing numbers:)
Five . . . y eight . . . nine . . .
eleven . . .
Mira.
(Asking the teacher to look as he wrote

some 7s. He then looks at the paper of a classmate who is drawing apples and indicates that he wants to do the same.)

Teacher: Finish this one first.
Tommy : (Writes a 7.)
Teacher: Hazlos bonitos.
Tommy : Asf, Miss?
Teacher: (Explains to him in English how to make 8s.)
Tommy : I know how make it.
Teacher: Make them pretty and neat.

Although his grammar had not improved markedly (as is evident from his omission of the infinitive "to"), he remained communicatively competent in English. He was also able to express number concepts in his preferred language, although he used Spanish to draw the teacher's attention to his work. At the end of the year the teacher continued to direct a fairly equal proportion of the two languages to him. Within the predominantly Spanish language environment of the classroom, however, his preferred language had changed by the end of the year to Spanish.

(2) Concept Development. One of the major concerns of the Nuevas Fronteras model is the development of prereading and premath skills through the integration of language and concept learning. At the Rio Grande site, as will be discussed in the section on implementation, teachers consistently carried out activities oriented toward concept development. Group songs and recitation of rhymes provided by the model developers in both English and Spanish were enthusiastically engaged in by children at the beginning of almost every school day. Prereading activities such as letter recognition and drills on concepts of shape, color, and size were also frequent.

As can be seen in Table 66, eight of the nine Spanish-preferring children dramatically increased their relative use of English in this area.[4] This was accompanied by an increase in nonlanguage-specific behaviors and a decrease for the majority of the children in first language use, which had predominated in the area of concept development at the beginning of the year.[5]

The experience of the English-preferring group differed somewhat. While two of the three children, like the Spanish-preferring group, decreased their use of Spanish, this was accompanied for all the group by an increase in behaviors which did not require the use of language. Thus, for the majority of all children, by the end of the year practice in concepts was occurring primarily either in English or the nonlanguage-specific area.

Table 66. Relative frequency of observed practice with concepts by language for individual subsample children over three points in time: Nuevas Fronteras [1]

| | SPANISH | | | ENGLISH | | | NON-LANGUAGE SPECIFIC | | |
|---|---|---|---|---|---|---|---|---|---|
| | I | II | III | I | II | III | I | II | III |
| **Spanish-Preferring** | % | % | % | % | % | % | % | % | % |
| Miguel | NO [2] | 40 | 13 | NO | 10 | 7 | NO | 50 | 80 |
| Evelyn | 100 | 14 | 46 | 0 | 0 | 46 | 0 | 86 | 8 |
| Nelda | NO | 25 | 18 | NO | 0 | 30 | NO | 75 | 53 |
| Odon | 17 | 0 | 30 | 50 | 0 | 20 | 33 | 100 | 50 |
| Juan | 50 | 83 | 29 | 0 | 0 | 43 | 50 | 17 | 29 |
| Ray | 100 | 39 | 20 | 0 | 8 | 47 | 0 | 54 | 33 |
| Arturo | 75 | 20 | 14 | 0 | 10 | 21 | 25 | 70 | 64 |
| Linda | 0 | 17 | 30 | 0 | 17 | 20 | 100 | 66 | 50 |
| Bonita | 100 | 10 | 1 | 0 | 60 | 79 | 0 | 30 | 20 |
| **English-Preferring** | % | % | % | % | % | % | % | % | % |
| Alberto | 0 | 0 | 0 | 100 | 14 | 36 | 0 | 86 | 64 |
| Janet | 67 | 0 | 0 | 33 | 9 | 62 | 0 | 91 | 38 |
| Tommy | 17 | 14 | 4 | 33 | 14 | 21 | 50 | 71 | 75 |

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed.

An examination of the distribution of observed behaviors by categories within the general area of concept development reveals that visual discrimination and symbolic representation were the categories in which all children consistently received the most practice (see Appendix S). Extensive practice in visual discrimination reflected the emphasis on identification of objects and their attributes such as size, shape, and color. By the end of the year, eight of the Spanish-preferring children had increased their use of English in the area of concept development. Emphasis on symbolic representation, a category which usually demanded little or no language usage, was related to the frequent imitation of actions and sounds, drawing in art activities, and practice in writing names and numbers.

There was a trend for most children of both language groups to diversify in concept use. Nine of the 12 subsample children expanded this trend. Generally, however, the Spanish-preferring children tended to diversify more than their English-preferring peers. Three of them, for example -- Nelda, Miguel, and Odon -- had expanded their experience to include at least three new areas (seriation/sequencing, classification/matching, and utilization of objects) by the end of the school year. Two of the three children of the English-preferring group, on the other hand, had at least 50% of their practice in concept development in the nonlanguage-specific category of symbolic representation throughout most of the year.

As called for by the model, the curricular lessons, which took place under the guidance of the teacher during small group periods, combined with routine classroom activities, which were exploited to emphasize specific areas of concept development, provided numerous opportunities for the children's practice in this area. The section that follows recreates the experiences of two subsample children, Linda and Janet, from two of the Site I classrooms. These typify the variety of activities which fostered the children's concept learning.

Linda was a quiet young girl with medium-long brown hair and dark eyes. Although she was soft-spoken, she usually answered questions asked by her teachers and participated in the frequent large group singing and dancing activities. Like many of the Nuevas Fronteras children at Site I, by the end of the year the frequent prereading activities employed in this model had fostered Linda's interest and skill in writing her own name.

Linda's progress in her mastery of a variety of concepts was typical of many of the Spanish-preferring children at this site. Although pretest scores in concept development showed her to be somewhat above the site average in English concept development, she registered no verbal ability in her second language and her understanding of concepts in her preferred language was superior. Activities such as that recounted below, designed to prepare the children for reading, took

place frequently at the beginning of the year:

Teacher: Let's review your names for a while . . .
(Choosing from a stack of name cards with large letters, she holds up a card with the name "Sharon.")
Sharon : Mío.
Teacher: Come and get it.
Sharon : (Takes card from teacher.)
¿Quién es el dueño de este nombre?
Linda : Yo.
(Stands up and retrieves card.)

Here the teacher was conducting an activity aimed at fostering the children's understanding of a few printed words relevant to their experiences. Following the model's recommendations that concepts be introduced in the preferred language of the child, she addressed the question in Spanish. Linda recognized her name, a nonlanguage-specific behavior in the area of symbolic representation. Some of her more advanced peers were even able to recognize names of their classmates in addition to their own, a stage at which Linda had not yet arrived.

By the end of the year, the teacher was focusing on prereading skills in both first and second languages. The following activity was recorded in May:

(The children are sitting in a circle on the rug, with the teacher showing a set of English alphabet cards. Linda sits cross-legged, her head propped on her left hand.)
Linda : A.
(In Spanish, identifying the letter "a" which the teacher holds up.)
Teacher : Ahora les voy a enseñar en inglés.
Estos son los sonidos en español..
(Teacher shows "r" with a picture of a ring on it and asks children what it is.)
Children: (In unison:)
Anillo.
Teacher : What is it in English?
Linda : Ring.
Teacher : Ring.
(And mentions rhyme that they have learned earlier.)

Linda : Erre con erre cigarro.
Erre con erre barril.
Rápido ruedan los carros.
Cargados de azúcar del ferrocarril.

Teacher : (Shows "c" card.)
Children: Car.

While the teacher continued to use the preferred language of the children, she drilled English symbols for the letters, which the children had now begun to master. The impact of the sound games employed by the teacher earlier in the year was evident. Rhymes such as the preceding, which were used to practice language and rhythm, also served to promote the children's understanding that words are made up of different sounds. Linda's spontaneous repetition of the "erre con erre" rhyme indicated her growing awareness of this, as she could relate the symbol "r" in English and Spanish. She also exhibited her ability to identify objects in her second language, such as "ring" -- a behavior indicating development in visual discrimination. By the end of the year, Linda's scores in both English and Spanish concept development were among the best in her class.

The examples which follow characterize the experience of the English-preferring students at Rio Grande.

•Janet was a fairly large girl for her age with an olive complexion and dark eyes accented by her long soft brown curls. Although at times she would fail to respond to questions addressed to her by the teacher, for the most part she participated in large group activities. Janet, like the other English-preferring subsample child who was tested at the beginning of the year, exhibited some knowledge of concepts in both English and Spanish.

One of the most common activities aimed at premath readiness, which frequently took place in Janet's classroom, was the participation of the students in counting their classmates. One child at a time would be designated to rise from his or her sitting position in a circle and, touching the heads of his or her peers, count the children present while skipping around the outside of the circle. Early in the year, Janet had already memorized the number sequence up to 12; she was observed successfully reaching that number in the attendance count before forgetting to count herself and one other child. She had not yet, however, reached the developmental stage in seriation and sequencing which enabled her to associate the number words with a set of objects; for example, she was unable to answer the teacher's question "How many toes do you have?" Although at this stage she could identify some of the basic colors in her second language, her performance was variable. She was observed mistakenly identifying the color of red pegs in a peg board as "verde."

By the end of the year, Janet had moved past the mere memorization stage in number learning and was generally able to relate a variety of concepts to her personal experience. The following interaction was recorded late in the year after a small group of children including Janet had been taken on a short field trip to the school parking lot:

Teacher: (Asks the children in English if they have tricycles.)
Janet : (Nods.)
I have one of that.
Teacher: (Asks how many wheels the cars they saw in the parking lot had.)
Janet : One, two, three, four.
Teacher: Were they round or square?
Janet : Round.
Teacher: How many trucks?
Janet : One, two, three, four, five.
Teacher: (Asks if there was a white truck.)
Janet : No.
Teacher: (Asks if there was a green truck.)
Janet : Yes.
Teacher: Uh huh.
(Asks if there was a black one.)
Janet : (Shakes head.)
Mi poppy trae una black.

In this example the teacher was exploring the concepts of shape, number, size, and color. She began the "lesson" with a question of relevance to the children and then moved to "how many" questions. Although Janet still exhibited a need to recite the sequence of numbers to arrive at the desired answer; she was now able to associate the number word with a set of objects she had just observed, as well as to identify their attributes of color, size, and shape in her first language. Here she appeared to show a tendency to express concepts in English as evidenced by her use of code-switching to the word "black" in her one Spanish utterance. On other occasions, however, she was observed successfully using Spanish to describe colors. Her test results in concept development supported the progress suggested by her classroom behaviors, as she made greater gains in concept development in her preferred language, English, rather than in her second language.

(3) Socioemotional Development. The most evident trend in socioemotional development among all subsample children, depicted in Table 67, is a substantial increase in inappropriate behavior from the first to the second observational periods. Most of this increase for both Spanish- and English-preferring groups is in the area of school readiness. This can be explained in part by the children's adaptation to change in teaching staff which occurred in one classroom at the beginning of the second observation period (see implementation section). At this time three of the four students in this classroom -- Ray, Arturo, and Tommy -- required readjustment into the routine of a new teaching team. This was further complicated by the fact that the two children -- Ray and Tommy -- who even at the beginning of the year had often failed to participate in group activities and distracted other children, were both members of this class.

Table 67. Relative frequency of observed appropriate and inappropriate socioemotional behavior for individual subsample children over three points in time: Nuevas Fronteras.[1]

| | APPROPRIATE | | | INAPPROPRIATE | | |
|---|---|---|---|---|---|---|
| | I | II | III | I | II | III |
| | % | % | % | % | % | % |
| **Spanish-Preferring** | | | | | | |
| Miguel | 0 | 28 | 63 | 0 | 72 | 36 |
| Evelyn | 17 | 67 | 59 | 83 | 33 | 41 |
| Nelda | 100 | 58 | 57 | 0 | 41 | 43 |
| Odon | 100 | 70 | 84 | 0 | 30 | 15 |
| Juan | 100 | 72 | 44 | 0 | 27 | 56 |
| Ray | 75 | 21 | 20 | 25 | 79 | 80 |
| Arturo | 67 | 42 | 70 | 33 | 57 | 30 |
| Linda | 66 | 64 | 78 | 33 | 36 | 22 |
| Bonita | 100 | 100 | 100 | 0 | 0 | 0 |
| | % | % | % | % | % | % |
| **English-Preferring** | | | | | | |
| Alberto | 55 | 41 | 60 | 44 | 60 | 40 |
| Janet | 100 | 38 | 43 | 0 | 61 | 57 |
| Tommy | 66 | 30 | 40 | 33 | 70 | 60 |

[1] Percentage totals may not equal 100% due to rounding.

By the end of the year the socioemotional behavior of the Spanish-preferring group had improved considerably, with seven of the nine children exhibiting mostly appropriate behavior. Six of the nine children had increased behavior indicating positive self-esteem. Even those children such as Odon and Miguel, who at the beginning of the year had been shy and at times refused to speak or interact with the other children, were now observed demonstrating pride in new accomplishments and in their ability to deal with new situations. The only area in which a trend continued toward more inappropriate behavior was in motivation, where some children by the end of the year appeared to become bored with the schedule of activities and required teacher intervention to maintain their interest.

The English-preferring children too had decreased the amount of inappropriate socioemotional behavior displayed. By the end of the year, however, two of the three -- Janet and Tommy -- still displayed inappropriate behavior. Still, there was a complete reversal of their inappropriate behavior in the area of school readiness, which accounted for a majority of their coded behaviors. By the end of the year they, like most of the Spanish-preferring children, exhibited a marked increase in sustaining interest in group activity and a decrease in the failure to share or take turns. At the beginning of the year such observations as "Andres asks a boy in a blue and red sweater, '¿me prestes el carrito?' The latter says 'No' and continues to play with it were common. By the end of the year, observer's comments such as the following were the norm:

> Sara marches as "Red, White, and Blue" is played on the record player. She sings, too. She watches the flag as it goes around the circle, from hand to hand, and takes it and passes it on when it is her turn. She sings and marches.

## 2. Parent Outcomes

### a. Parent Sample

The sample at Site I consisted of 21 experimental and 28 comparison group parents. At Site II, 29 experimental and 30 comparison group parents were interviewed. All of the respondents at Site I were of Hispanic background. At Site II, one third of the experimental parents and one seventh of the comparison groups were non-Hispanics. Income, family size, and average age of children were similar for experimental and comparison group parents at each of the sites. At both Site I and Site II, experimental parents averaged approximately two more years of schooling than their comparison group counterparts. (See Appendix L for all background characteristics.)

b. Mother's Attitudes and Perceptions

Experimental and comparison mothers at each site had similar perceptions of their children's language ability. Site I experimental and comparison parents considered their children's Spanish language ability to be better than their English language ability, while the reverse was true at Site II. Site I experimental and comparison mothers rated their own Spanish language ability as similar. However, experimental mothers saw themselves as having significantly more ability in English than did comparison mothers. Site II experimental mothers evaluated their Spanish ability significantly higher by year's end than did their comparison group counterparts. (See Table 68).

There were no significant differences in the attitudes of experimental and comparison mothers at either Nuevas Fronteras site over the course of the year. Both samples expressed a favorable attitude toward education in general and bilingual bicultural education in particular. Parents in all groups expected their children to attain 15 or more years of schooling. They also agreed that schools in the communities were doing a good job of educating their children, and felt that they were providing the children with the necessary experience to help them prepare for a career.

No differences were found between experimental and control mothers at either site in the amount of formal instruction that they provided to their offspring. Experimental mothers at Site II, however, reported providing significantly fewer playthings that might have an instructional function.

Parents were also asked to state their child's primary activity during distinct daily periods. The experimental and comparison children at Nuevas Fronteras I were involved in similar activities at pretest and posttest (Appendix Y). Both groups showed a decrease in time spent watching television and an increase in social play and school or school-related activities. It may be assumed, therefore, that changes in these children's test performance can be attributed to classroom treatment, rather than to instruction received outside of the preschool environment.

This was also the case with Nuevas Fronteras II, as no differences were found between the two groups over time, although experimental parents perceived their children's major activity to be school or school related, while comparison parents reported their children's principal activity as playing. At posttest, parents of experimental children reported a decrease in television watching as a primary activity, while comparison respondents perceived no differences in their children's daily activities over time.

Table 68. Comparison of the attitudes and perceptions of mothers of all sample children: Nuevas Fronteras

| | SITE I | | | | SITE II | | | |
|---|---|---|---|---|---|---|---|---|
| | Significance[1] | Experimental MEAN (Adjusted) | Group (N) | COMPARISON MEAN (Adjusted) | Group (N) | Significance | Experimental MEAN (Adjusted) | Group (N) | COMPARISON MEAN (Adjusted) | Group (N) |
| **Language Assessment of Child** | | | | | | | | | | |
| Spanish Ability | ns[2] | 2.48 | 21 | 2.4[illegible] | 28 | ns | 1.55 | 31 | 1.43 | 30 |
| English Ability | ns | 1.39 | 21 | 1.2[illegible] | 28 | ns | 2.30 | 31 | 2.18 | 30 |
| **Maternal Language Usage** | | | | | | | | | | |
| Spanish-Speaking Ability | ns | 2.58 | 21 | [illegible] | 27 | * | 2.05 | 31 | 1.68 | 30 |
| Instructs in Spanish | | | | | | | | | | |
| English-Speaking Ability | * | 1.58 | 21 | 1.20 | 28 | ns | 2.06 | 31 | 2.00 | 30 |
| Instructs in English | | | | | | | | | | |
| **Mother's Role as Teacher** | | | | | | | | | | |
| Provides Formal Instruction | ns | 0.81 | 20 | 0.79 | 28 | ns | 0.86 | 31 | 0.85 | 30 |
| Provides Instructional Playthings | ns | 0.70 | 20 | 0.64 | 28 | * | 0.60 | 31 | 0.70 | 30 |
| **Mother's Belief About Education** | | | | | | | | | | |
| Overall School Effectiveness | ns | 3.99 | 21 | 4.01 | 28 | ns | 3.61 | 31 | 3.57 | 30 |
| Career Preparation | ns | 2.72 | 18 | 3.25 | 24 | ns | 2.54 | [illegible] | 2.50 | 26 |
| Importance of Bilingual Education | ns | 4.22 | 21 | 4.14 | 27 | ns | 3.77 | 25 | 3.94 | 27 |
| Importance of Self-Concept | ns | 4.27 | 21 | 4.20 | 27 | ns | 4.12 | 25 | 4.15 | 27 |
| Educational Aspiration for Child | ns[2] | 15.53 | 21 | 16.10 | 28 | ns | 16.65 | 31 | 16.07 | 30 |
| **Socioeconomic Status** | | | | | | | | | | |
| Family Income | ns | 6.79 | 20 | 7.01 | 27 | ns | 8.09 | 28 | 7.87 | 28 |

[1]The following symbols are used to depict levels of significance

* $p \leq .0500$

▲ $.0500 < p \leq .1000$

ns $.1000 < p$

□ significance not computed

[2]Failed test of homogeneity of within cell regression slopes: $p \leq .0500$

## 3. Teacher Outcomes

### a. Teacher Sample

A total of 11 members of the classroom staff at both sites were administered questionnaires at the beginning and end of the school year. Two teachers and three aides at Site I remained with the program for the entire year. At Site II, three complete teacher-aide pairs responded to the questionnaire.

The classroom staff at both Nuevas Fronteras replication sites were women and all but one had children of their own. At Site I, all were Mexican American, either Spanish preferring or bilingual, and ranged in age from 19 to 61. With one exception, all teachers and aides were born in the county in which the Head Start center was located and resided in the community at the time of the study. Only one, however, lived in immediate proximity to the preschool. One teacher had a CDA credential and a second was in the process of being evaluated for such preschool certification. All aides had a high school diploma and some college training, and all but one, who was hired during the school year, had some prior work experience. Only one teacher-aide pair had taught at the center for more than one year before the evaluation. The other staff members (apart from the new aide) had worked at other Head Start centers for three or more years.

The Site II teachers and aides ranged in age from their late 20s to mid-40s. The three teachers were bilingual but considered themselves to be English preferring. Two were Mexican American. A Mexican American aide spoke some Spanish but the two Anglo aides were English monolinguals. Each of the teachers had taught at the center for 10 or more years and all began as community or teaching aides. Two had B.A. degrees and the third had some college experience and was in the process of obtaining the CDA credential. The aides held high school diplomas, had job experience in clerical and sales positions, and had served as volunteer parents and substitutes before being hired for aide positions. Staff turnover was limited to Site I where a teacher resigned and was replaced by an aide. (See Appendix M for all background characteristics.)

### b. Teachers' Attitudes

The teaching staffs of both centers were generally positive toward the Nuevas Fronteras curriculum model. Teachers liked certain aspects of the model, particularly the curriculum units, which were described by one teacher as "well done, with everything set out for you." They agreed that the management system of assessing cognitive styles and planning on an individual level was time consuming. However, they believed it could be helpful with proper training.

Over the evaluation year, the teachers in Nuevas Fronteras classrooms at both sites exhibited some change in their understanding of

bilingualism in the context of early childhood education programs. All teachers increased their feeling that the primary advantages of bilingualism for both English- and Spanish-preferring children were social. Whereas at the pretest at least one teacher at each site perceived the advantages of bilingualism as being primarily related to outside job benefits, by the end of the year teachers considered language acquisition for communication and socialization as the primary benefits of bilingualism.

The importance of a bilingual multicultural curriculum was viewed differently by the teachers at Site I and Site II both at the beginning and end of the preschool year. While at the beginning of the year teachers at Site I identified the advantages of bilingual education as communication skills and cultural awareness for English-preferring children and pragmatic benefits of better job and educational opportunities for Spanish-preferring children, after the experience of the Nuevas Fronteras curriculum they tended to show a more mixed integrative and instrumental orientation. At Site II, on the other hand, the opposite trend occurred. Teachers who originally viewed educational opportunities as an important advantage for both English- and Spanish-preferring children overwhelmingly identified cultural awareness, communication, socialization, and language acquisition for its own sake as the primary benefits of bilingual education by the end of the year. The general trend toward a greater integrative orientation exhibited overall by teachers at both sites may be due in part to the model's emphasis on flexibility and thinking ability as the two major benefits of bilingualism.

In the area of language attitudes, some differences were found between the two sites in trends in teachers' attitudes toward various language models. Over time, Site I teachers voiced slightly more positive attitudes about children speaking their first language as it is heard in the home and their second language as it is heard in the community, but commented more negatively on the first language as spoken in the community and first and second languages as presented in textbooks. Teachers at Site II, on the other hand, came to view more positively the use of textbooks as language models for first and second language learning for both Spanish- and English-preferring children. This may be related to the teachers' favorable experience with bilingual storybooks supplied by the model developers.

Table 69 shows that teachers at both sites felt that parent participation was very important. They were positive about having frequent contact with parents, their personal success in involving parents, and the accuracy of information parents provided teachers. Teachers at Site II appeared neutral with respect to whether teachers should attempt to involve seemingly uninterested parents, a feeling that can be traced to logistical problems they had faced in dealing with low parent participation. At posttest, Site I teachers were more favorable toward teachers' success in involving parents than they were at pretest. When asked what they considered to be the most important components of a

Table 69 . Attitudes toward parent involvement of experimental Head Start teachers: Nuevas Fronteras

| | VERY POSITIVE | | POSITIVE | | NEUTRAL | | NEGATIVE | |
|---|---|---|---|---|---|---|---|---|
| SITE I N = 5 | PRE | POST | PRE | POST | PRE | POST | PRE | POST |
| Parents should be involved in the classroom | 20 | 80 | 80 | 20 | | | | |
| If parents cannot be in the classroom, teacher should have frequent contact with them | 40 | 40 | 20 | 60 | 40 | | | |
| Teacher should attempt to involve seemingly uninterested parents | 100 | 60 | | 40 | | | | |
| Teacher personal success in involving parents | 20 | | 60 | 100 | | | 20 | |
| Teacher could do a better job with more parent participation | 20 | 40 | 20 | 20 | 20 | 20 | 40 | 20 |
| Parents provide accurate information to teachers | | 60 | 100 | 40 | | | | |
| SITE II N = 6 | | | | | | | | |
| Parents should be involved in the classroom | 33 | 83 | 50 | 17 | 17 | | | |
| If parents cannot be in the classroom, teacher should have frequent contact with them | 50 | 17 | 33 | 83 | 17 | | | |
| Teacher should attempt to involve seemingly uninterested parents | 33 | 17 | 17 | 17 | 50 | 67 | | |
| Teacher personal success in involving parents | | 17 | 50 | 67 | 50 | 17 | | |
| Teacher could do a better job with more parent participation | | 17 | | 67 | | 17 | | |
| Parents provide accurate information to teachers | | | | 67 | | 33 | | |

multicultural curriculum, teachers at both sites remained relatively consistent in their beliefs throughout the year.

## B. Implementation

This section presents the results of the evaluation related to the Nuevas Fronteras curriculum at the two replication sites. The discussion is complemented by Appendix Y, which provides descriptions of (1) the sociocultural environment of the communities, (2) the administrative aspects of each site, and (3) the Head Start settings. A description of the principal features of the Nuevas Fronteras curriculum model begins this section. The discussion then focuses on the success of each site and each classroom within a site in meeting the goals of the model in five areas -- schedule and organization, physical setting, instructional materials, individual behavior, and instructional strategies. A description of the comparison group at each site completes the section.

### 1. Principal Features

The Nuevas Fronteras curriculum is based on the assumption of cognitive variation and emphasizes the necessity of recognizing and using all of a child's abilities and experiences to enable each child to move toward his or her potential. In addition to shared experiences, children's unique strengths and qualities are incorporated into the design of the program. A respect for individual and cultural differences is built into a comprehensive range of developmental and learning goals.

#### a. Model Goals and Design of Activities

The primary goal of the Nuevas Fronteras model is to teach children in a way that is consonant with their own learning styles. These relate to home and socialization experiences as well as cultural values and modes of communication. At the same time, the model provides opportunity to practice skills that are functional in today's complex society. This includes emphasizing preliteracy training and the advantages of bilingualism. To achieve these goals, the program calls for structured learning settings and close teacher-child relations based on personalized incentives and modeling.

Individual differences among children are explained according to a cognitive styles dichotomy. Children are considered "field sensitive" if they exhibit group-oriented behavior and tend to seek guidance. "Field-independent" children rely more on their own resources. By initially encouraging the expression of the preferred style, teachers enhance a child's self-esteem. Subsequently, by purposefully reinforcing a child's "balance" of cognitive styles, they increase a child's development of cognitive flexibility.

A bilingual bicultural emphasis predominates in all aspects of the model. Based on a philosophy of "cultural democracy," the program maintains the rights of children to learn their own culture in their best-known language. Children thereby come to know that their own culture and language are valued. Learning that there are many ways to communicate also promotes intercultural understanding and flexibility in interacting with others.

The model is designed to enhance a child's ability to verbalize and conceptualize in both Spanish and English. The two languages are to be emphasized equally, making the model appropriate for use with English-speaking, Spanish-speaking, and bilingual children. Large and small groups should use both languages concurrently and the order of presentation should be altered. In addition to developing conceptual and small motor skills, the focus of small groups is on children's production and comprehension of an increasing variety of vocabulary and grammatical structures.

The model calls for using children's primary language when describing and discussing new experiences or introducing concepts. For groups with both English monolinguals and Spanish monolinguals, teachers are instructed to use a balance of both languages. For concept review or repetition of an activity, Nuevas Fronteras suggests use of the primary language followed by translation in the second language. In addition, second language learning is specifically encouraged through English as a second language and Spanish as a second language in small groups and situations where Spanish-dominant and monolingual children interact with English-dominant and monolingual children. It is recommended that the second language sessions be conducted daily for no longer than 10 minutes. Children, therefore, are to receive both informal and structured experiences in the second language. The model cautions that special stress may be needed on a language that is less predominant in the composition of the classroom or community. Presenting both languages in a positive way in turn engenders positive attitudes toward the respective cultures.

Concept learning goes together with language learning in the Nuevas Fronteras model, and the stress is on basic preliteracy skills. These include number, letter, and name recognition, writing practice, and looking at books, in addition to color and shape review, environmental awareness, and knowledge of community relations.

Psychomotor and socioemotional development are other parts of Nuevas Fronteras' comprehensive program. Large and small muscle coordination are developed through both indoor and outdoor activities. These skills are to be learned within a context appropriate for the learning of related concepts as well. Socioemotional learning includes relations with others, developing concepts of self and others, self-expression, and understanding feelings. In addition to interactions throughout the day in structured and transition times, socioemotional development comes through dramatic play, recall, and sharing time.

b. Classroom Structure

A full range of learning situations is designed to meet the language, conceptual, psychomotor, and socioemotional goals outlined above. Activities include group discussion, review, games, stories, music, fantasy, arts and crafts, cooking, and manipulation of materials. The program includes activities that are teacher-directed and child initiated, group and individual, large group and small group, and modeling/imitative and discovery/initiated.

Special centers in the room offer opportunities for both field-independent and field-sensitive learning to occur. Their set-up allows children to learn in the manner most comfortable to them and provides space for a mix of children.

The learning schedule proposed in Nuevas Fronteras is developmentally sequenced over the school year and inserts daily instructional activities between informal learning situations. Planning is required on a daily basis, as well as for a weekly period. Specific activities within each of the different learning situations (e.g., art, second language, language arts) are designed for the group, and work in a particular cognitive style may be arranged once or twice during the week for individual children.

Activities on an individual basis are to be conducted in a child's preferred cognitive style, with a gradual introduction to the less familiar style. Cognitive flexibility is to be achieved by first providing opportunities for expressing the preferred style and then reinforcing it, while gradually reinforcing behaviors that evidence the second cognitive style. Adjusting their reinforcement and teaching styles requires teachers to assess the field-sensitive and field-independent behaviors that children display in class. Children are to be diagnosed early in the year, with periodic updating to follow at three subsequent times. Ideally, this evaluation enables the teacher to orient his or her teaching styles to individual needs. While teachers may do this naturally, the structured assessments ensure comprehensive evaluation of each child over a similar set of criteria. However, it is possible to utilize the curriculum unit materials without doing all the assessments, although to less than full advantage than if units are geared to children's cognitive differences.

c. Curriculum Units

The Nuevas Fronteras curriculum is presented through 13 distinct units which are ordered seasonally and developmentally. The materials of each unit are clearly laid out and oriented around a central theme, including "Myself," "Family," "Corn," "Weather," and "Pets."

Each unit contains the following explanatory materials for teachers: (1) Index: a graphic summary of which (and to what degree)

language, conceptual, social, and motor skills are appropriate to each of the various activities of the unit; (2) Introduction: a synopsis of the focus of the unit and appropriate displays and areas in the room environment; (3) Parent, Family, and Community Participation Folder: ideas for incorporating family and community members into the program through particular activities of each unit; (4) Additional Ideas: suggestions for making and obtaining further materials for the classroom and for follow-up activities.

Instructional materials for each unit consists of between seven and 19 activity folders, each of which describes an activity or set of activities and their purpose, language development goals, encouragement of cognitive styles, second language aims, materials for display, materials for individual use by children, and procedures. Some of the activities have materials supplied by the model, including illustrated storybooks in Spanish and English, dittos for children's "mini-books," flannelboard patterns, and picture cards.

The curriculum units, therefore, are model-supplied materials which have a bilingual bicultural emphasis built into them and contain recommendations for developing flexibility in children's cognitive styles. They are viewed as sufficiently varied in subject area, cultural content, and activities in two languages as to not require many materials from other sources.

2. Model Level Implementation

Results of the implementation observations for the two replication sites of the Nuevas Fronteras model are presented in Table 70. Both sites showed relatively consistent overall implementation scores. However, their patterns of implementation varied (Figure 9). At all three observation periods the overall scores were higher at Site II, although this disparity was primarily in the categories of setting and organization and individual behaviors. The existence of a half-day program at Site II may have contributed to higher scores because teachers had a shorter work day, with more time for planning, and had to incorporate instructional activities into a more intensive period than was the case for the full-day sessions at Site I.

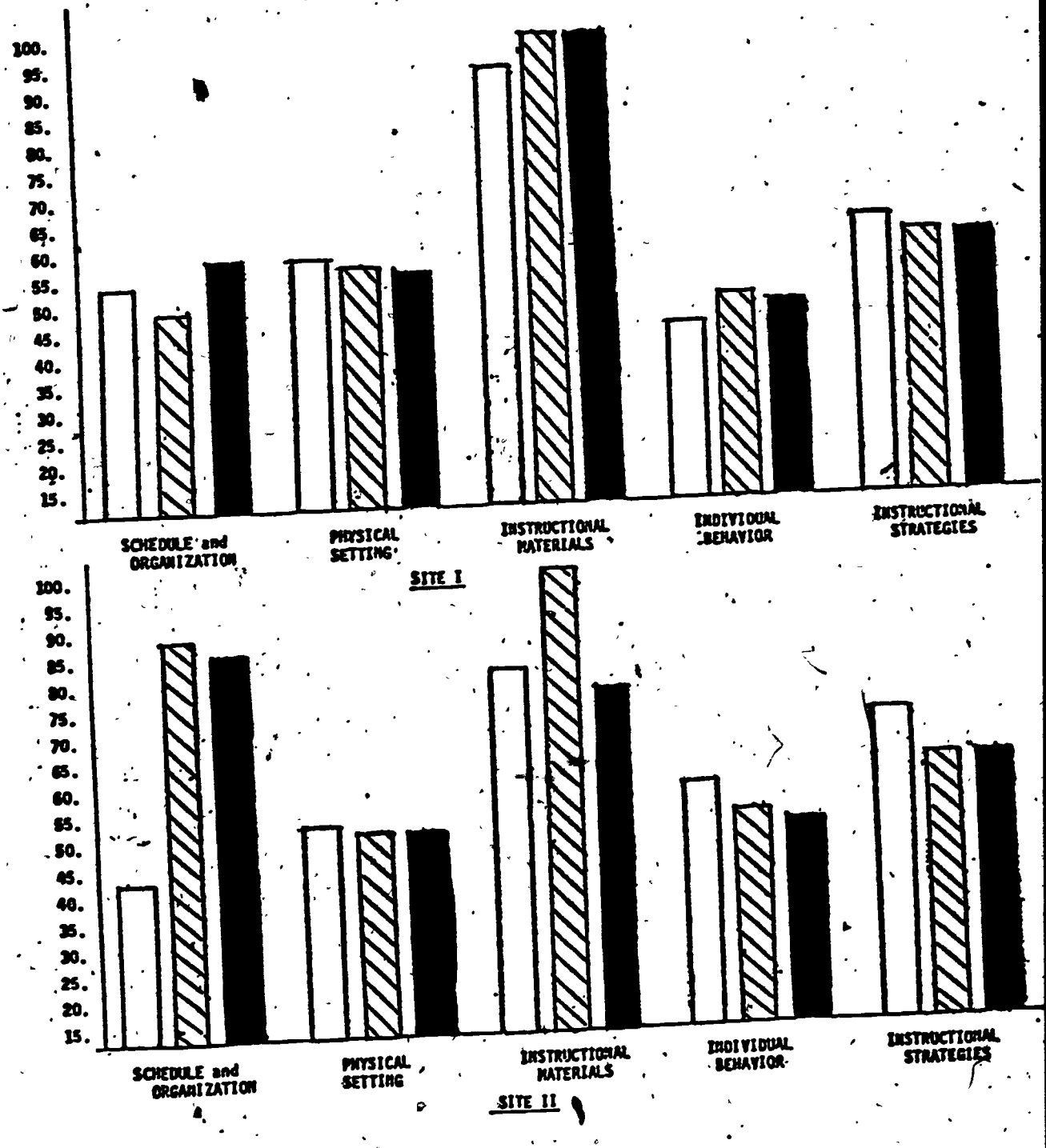
At both sites there was an increase in the degree to which established schedules were organized and followed. A marked rise in scores between the first and second observation periods at Site II corresponded to the posting of schedules, which was recommended during an in-service held in the second month of school. Thereafter, scores at Site II approached the maximum possible, evidence of a high degree of routinization of classroom activities. The generally higher scores at Site II reflected a situation where teachers were paid for five hours and taught for three, planning and preparing materials both before and after school. Planning time was more restricted at Site I, particularly after aides were required to ride buses after school.

Table70. Nuevas Fronteras implementation scores by site over time.

| Implementation Categories | Maximum Possible Score | Site I | | | Site II | | |
|---|---|---|---|---|---|---|---|
| | | $T_1$ | $T_2$ | $T_3$ | $T_1$ | $T_2$ | $T_3$ |
| Schedule/ Organization | 14.72 | 7.97 | 7.21 | 8.59 | 6.13 | 12.88 | 12.57 |
| Physical Setting | 15.93 | 9.39 | 9.05 | 8.90 | 8.36 | 8.19 | 8.11 |
| Instructional Materials | 4.20 | 3.90 | 4.20 | 4.20 | 3.40 | 4.20 | 3.30 |
| Individual Behavior | 29.52 | 13.39 | 14.08 | 13.94 | 17.22 | 15.31 | 15.03 |
| Instructional Strategies | 9.96 | 6.50 | 6.37 | 6.50 | 7.33 | 6.23 | 6.23 |
| TOTAL | 74.33 | 41.15 | 40.91 | 42.13 | 42.44 | 46.81 | 45.24 |

FIGURE 9

NUEVAS FRONTERAS DEGREE OF IMPLEMENTATION BY SITE OVER TIME



There was a slight decline at both sites in the degree of use of areas over the school year, related perhaps to the decrease in opportunities for independent play (including use of an area alone) as large group and movement activities were extended. The presence of a math area at Site I and its absence at Site II accounted for the difference in physical setting scores.

A general availability at both sites of instructional materials called for by the model was revealed in scores that reached the maximum twice at Site I and once at Site II. The greater number of culturally relevant materials and labeling at Site I was reflected in higher scores in this category at the first and third observation periods compared with Site II.

For the categories of individual behaviors and instructional strategies, convergent change was discernible; the year-end scores at both sites approached a similar level. The pattern of individual behavior scores at Site I exhibited relative stability following a rise between the first and second observation periods, while a relative stability in scores at Site II followed an initial drop between the first and second periods. A lack of funding for home visits and parent programs resulted in low parental participation at both sites. A single parent regularly assisted late in the year at Site I. Several parents attended occasionally at Site II, especially at the beginning of the year, contributing to the high score during the initial observation period.

Instructional strategy scores were consistently high over the year at both sites. Teachers at Site I carried out all of the language and concept development activities but generally did not organize outdoor activities. Scores at Site II stabilized after an initially high level, revealing an energetic start followed by a subsequent tendency to defer second language activities, particularly those in Spanish, if the class was running behind schedule.

These implementation findings in the area of instructional strategies are consistent with the results of significant gains in the constructs discussed earlier. Since teachers generally carried out the learning activities specified by the model, experimental children appear to have received more regular English instruction than did comparison children. This was in spite of the fact that Spanish was the predominant classroom language, as reflected in Site I children's significant gains on the measure of Spanish language acquisition. Furthermore, the greater consistency with which second language activities occurred at Site I may account for the gains of Rio Grande City children (with significant gains varying by the entry-level ability of the children in English language acquisition and comprehension) as compared with Site II children (with no significant differences for Spanish-preferring children).

## 3. Classroom Implementation Factors (Site I)

Beyond the general level of implementation some further trends can be noted through grouping implementation scores by classroom. The degree of overall implementation at Site I varied slightly by classroom, with the highest scores occurring in classroom A and the lowest in classroom C (Table 71). Teacher turnover in the latter classroom almost certainly accounted for this lower implementation score, as during the second observation period a new aide was adapting to the procedures of the model. The overall increase in implementation scores from Time 1 to Time 3 was largely due to the rise in classroom A of scores for both schedule/organization and instructional strategies and in classroom C of the latter category scores. However, it would seem that as teachers and staff became more familiar with the model, they inadvertently selected certain of its aspects to emphasize in their daily activities. This selectivity becomes apparent when considering each of the five categories in turn.

### a. Schedule and Organization

Of the categories assessed under implementation, schedule and organization was one of the least implemented at the Nuevas Fronteras experimental classrooms in Rio Grande City. Although the curriculum guide suggested a schedule of daily classroom activities, two of the teachers did not post their schedules and the third did so late in the school year.

The basic schedule was as follows:

| | |
|---|---|
| 8:30 - 9:00 | Breakfast |
| 9:00 - 9:30 | Wash hands, bathrooming, greeting, pledge of allegiance, etc. |
| 9:30 - 10:30 | Curriculum lessons (small groups) |
| 10:30 - 11:00 | Outdoor free play (supervised at all times) |
| 11:00 - 11:45 | Story time, art, and music |
| 11:45 - 12:00 | Free play or preparation (clean-up) for lunch |
| 12:50 - 1:20 | Outdoor free play (supervised) |
| 1:20 - 2:00 | Rest |

Table 71. Nuevas Fronteras I implementation scores by classroom over time.

| Implementation Categories | Maximum Possible Score | Classroom A | | | Classroom B | | | Classroom C | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 |
| Scheduled Organization | 14.72 | 5.98 | 6.44 | 8.74 | 11.04 | 6.90 | 10.58 | 6.90 | 8.28 | 6.44 |
| Physical Setting | 15.93 | 9.00 | 9.74 | 8.85 | 9.74 | 8.85 | 8.85 | 9.44 | 8.56 | 9.00 |
| Instructional Materials | 4.20 | 3.90 | 4.20 | 4.20 | 3.90 | 4.20 | 4.20 | 3.90 | 4.20 | 4.20 |
| Individual Behavior | 29.62 | 13.94 | 20.50 | 13.53 | 11.48 | 11.48 | 13.94 | 14.76 | 10.25 | 14.35 |
| Instructional Strategies | 9.96 | 5.40 | 7.06 | 6.23 | 7.47 | 5.81 | 5.81 | 6.64 | 6.23 | 7.47 |
| TOTAL | 74.33 | 38.22 | 47.94 | 41.55 | 43.63 | 37.24 | 43.38 | 41.64 | 37.52 | 41.46 |

2:00 - 2:15 Snack

2:15 - 2:35 Reinforcement of lessons taught that day

2:35 - 2:45 Children prepare to go home

3:00 - 3:40 Planning period for teachers

3:40 - 3:45 Sign out

In all classes there was variability in how much time was devoted to instructional activities and to noninstructional activities such as recess. Time spent at recess appeared to have increased during the year in one class, and though it was to be a teacher-supervised activity, recess became either a de facto break for the teachers or a time for planning. Of all the activities, review was typically the least implemented. Teachers would expand the nap period and eliminate review either because they had difficulty getting the children to sleep or because they needed time for planning. Often the model-prescribed periods of free time to play with available materials were not carried out, as classroom organization was such that activities frequently ran over the allotted time. When free time did occur it was largely the result of an activity period ending unexpectedly early.

Observations made in the experimental classrooms showed differences in degree of teacher planning, prior preparation, and general level of organization. These differences were not, however, reflected in the schedule and organization subscale of the implementation instrument. For example, the teacher who had the most difficulty actually carrying out lessons had the highest ratings for implementation of schedule and organization. Hence, it seems there is an important difference between adherence to the formal organizational schedule and the way in which actual classroom activity periods are carried out. As the classroom with the highest ratings in schedule and organization had the lowest overall ratings in individual behaviors and instructional strategies, these categories would seem to provide more information on the classroom interactions of the teaching staff.

b. Physical Setting

All classroom areas specified by the model were in place and, as can be seen in Table 70, settings were used extensively. With few exceptions the children used or were introduced to areas equally. The major exception, reflected in the less than maximum scores, was that girls were seldom to be found in the block area (in fact, they were occasionally sent away from there by the teachers), which seems in large part to have been due to stereotypical ideas the teachers had about appropriate activities for little girls.

The three classrooms were well equipped and sufficiently large for a number of people to use the space. There were tables and a chair for each of the children and each teacher had her own desk. Work centers were labeled in Spanish and English according to the provisions of the model. Some individual items within the centers were also labeled, although these were not necessarily the ones emphasized in the manual. Children's art work was placed around the room and labeled by teachers or aides based on the children's verbal descriptions.

In two of the classrooms, children's names were placed on individual chairs. In the remaining classroom, they were taped onto the tables, precluding flexibility in seating and placement as called for by the model. As the year progressed most of the name tags in the classroom disappeared and were not replaced.

c. Instructional Materials

Model developers furnished a variety of instructional materials and provided limited funds for the purchase of additional materials. This is reflected in the uniformly high scores in this category. Teachers and aides relied almost exclusively on the curriculum units and materials provided by the model developers. The main exception was in the music area where, although the model called for a music period, the developers provided no records.

Otherwise, the classrooms were well equipped. Each had a color television, record player, and filmstrip machine, in addition to artifacts from both Mexican and Mexican American culture. The playground was the only area with few materials; although the model specified that they be present, outdoor equipment was usually stored inside classrooms.

d. Individual Behavior

The relative stability in scores of individual behaviors between the first and third observation periods in the three Nuevas Fronteras I classrooms suggests that there was little change during the school year in teachers' language usage, overall involvement of adults, and types of activities in which children were engaged.

Spanish was the first language of all teachers and aides, but there was a great deal of variability in the degree to which either standard Spanish or dialectical variants were spoken. Staff literacy skills were more developed in English than in Spanish, as all had attended schools where English was the language of classroom use. One teacher, for example, took home the Spanish storybooks in order to prepare for storytelling sessions by reviewing the texts.

Given that the first spoken language of the teachers was Spanish and that the model explicitly specified that students should be addressed

in their first language, which for the great majority was Spanish, it is not surprising that language production of both teachers and aides was heavily Spanish across all time periods (Table 72). For all three classrooms there was also a slight rise from Time 1 to Time 3 in the use of English. This may account for the observed increase in English usage in the classroom by both Spanish- and English-preferring students. The large, but temporary, increase in English during Time 2 in classroom B may have resulted from efforts on the part of the teacher to have two English-preferring children pair off and speak to one another in English.

At the beginning of the school year, the teachers encouraged the students to count and to identify colors and shapes in both languages. As was reported in the results of the classroom observations, by the second observation period the children were more likely to do these tasks spontaneously in English; 28% of the Spanish-preferring children's behavior related to concept development was in their second language. Teachers' early emphasis on such activities may account for this trend. English was the primary vehicle in all classes for scolding and rewarding children and for giving them directions, all of which were important classroom control functions. The importance placed on English for specific functions is indicated by the fact that all children learned to ask to go to the bathroom in English.

As one might expect, most language production occurred during the periods of greatest instruction -- small and large groups. Commands, statements, and questions predominated as most frequent speech types, while verbal praise and discipline rarely occurred. Finally, even though teachers and their aides interacted well and status differences appeared minimal, teachers were clearly most responsible for the instructional aspects of classroom interaction and the major portion of speech production was theirs. The one exception was in classroom C during the initial implementation period when, prior to the resignation of the teacher, the aide accounted for a larger share of speech production.

There were, as with any group of teachers, variations in teaching styles among the teachers at Site I. The teacher in classroom A was conscientious in her lesson planning and meticulous in terms of classroom displays and art projects. She consistently provided times for children to talk, smooth transitions, activities for the children who finished tasks early, and one-to-one attention. She also saw to it that each child responded correctly when called upon. The aide's positive contribution to classroom functioning became apparent when, due to an inexperienced substitute assigned to the class during a lengthy illness of the regular teacher, she was forced to assume management of the classroom. The combination of these factors accounts for classroom A receiving the highest average score for individual behaviors across the three observation periods.

The teacher in classroom B was less structured in her approach, as is reflected in the relatively low average score across the observation

Table 72. Nuevas Fronteras I classroom language production by teaching unit

| CLASSROOM A INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Trans-lation | Lang. Switch | Individual Percent of Total | English | Spanish | Trans-lation | Lang. Switch | Individual Percent of Total | English | Spanish | Trans-lation | Lang. Switch | Individual Percent of Total |
| Teacher | 27 | 43 | 2 | 3 | 75 | 26 | 40 | 1 | 1 | 68 | 32 | 48 | 4 | 2 | 86 |
| Aide | 11 | 12 | 1 | 1 | 25 | 13 | 19 | 0 | 0 | 32 | 8 | 5 | 1 | 0 | 14 |
| TOTAL | 38 | 55 | 3 | 4 | 100 | 39 | 59 | 1 | 1 | 100 | 40 | 53 | 5 | 2 | 100 |

| CLASSROOM B INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Trans-lation | Lang. Switch | Individual Percent of Total | English | Spanish | Trans-lation | Lang. Switch | Individual Percent of Total | English | Spanish | Trans-lation | Lang. Switch | Individual Percent of Total |
| Teacher | 10 | 40 | 4 | 3 | 65 | 41 | 23 | 1 | 4 | 69 | 28 | 49 | 2 | 2 | 81 |
| Aide | 5 | 27 | 2 | 1 | 35 | 9 | 19 | 1 | 2 | 31 | 3 | 14 | 1 | 1 | 19 |
| TOTAL | 23 | 67 | 6 | 4 | 100 | 50 | 42 | 2 | 6 | 100 | 31 | 63 | 3 | 3 | 100 |

| CLASSROOM C INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Trans-lation | Lang. Switch | Individual Percent of Total | English | Spanish | Trans-lation | Lang. Switch | Individual Percent of Total | English | Spanish | Trans-lation | Lang. Switch | Individual Percent of Total |
| Teacher | 14 | 23 | 1 | 2 | 40 | 24 | 42 | 9 | 1 | 76 | 13 | 50 | 1 | 6 | 72 |
| Aide | 13 | 36 | 4 | 7 | 60 | 8 | 12 | 3 | 1 | 27 | 17 | 10 | 0 | 1 | 28 |
| TOTAL | 27 | 59 | 5 | 9 | 100 | 32 | 54 | 12 | 2 | 100 | 30 | 60 | 3 | 7 | 100 |

periods. She would sometimes accept answers from any child rather than wait for the called-upon child to respond and might ignore incorrect responses. Children finishing an activity early were not always directed elsewhere. Lesson plans were not always reviewed well in advance and periodic changes in classroom rules were not consistently enforced.

In classroom C, the first teacher seemed relatively uninterested in conducting lessons, although she was able to elicit responses to her questions from most children and would correct wrong answers. The replacement teacher and aide exercised a greater degree of control over the children to ensure their attention. They also used much repetition in lessons, made sure each child responded to questions, and usually corrected incorrect answers.

Although the model calls for involving parents in classroom instruction, such involvement was almost nonexistent, contributing to the relatively low overall scores. The higher score for classroom A during the third observation period reflects the only time a parent volunteer was present in the classrooms.

e. Instructional Strategies

This category shows a relatively high level of implementation in all classrooms throughout the year. Although the duration of the curriculum lessons and the style in which they were presented varied, as previously shown, all of the instructors consistently carried out both large and small group activities.

Within instructional periods, different teachers and aides had varying pedagogical strengths and interests. The teacher in classroom B, for example, emphasized language development and had the students talk in front of the group about their own experiences. By the end of the year, she was using large group time to accomplish this goal rather than activities like music which she enjoyed less. The teaching team in classroom C, on the other hand, had frequent music activities. They introduced new songs, music, and rhymes. By midyear, the replacement teacher in classroom C found the children organizing themselves to do the flag salute and song. Storytelling, which the model strongly recommends as a part of language acquisition, was also differentially emphasized. One teacher acted out her stories, while another teacher admitted to being ineffective in this activity. In all classes children put together puzzles on their own and received lessons in self-awareness as part of the curriculum units at the beginning of the year.

Reflecting the preliteracy goals of the model, children in all classes could read and write their own names and read the names of fellow students by the end of the year. The aide in classroom A enjoyed science and math and offered both throughout the year. Math and counting were also promoted in classroom C, and while math was deemphasized in classroom B, as the year progressed most of the students learned to count to at least 20.

The following excerpt is from an evaluation researcher's field-notes. It illustrates various aspects of the implementation process at Nuevas Fronteras I reflected in the preceding discussion.

> During the small group rotation five children are seated at a small round table in the math area. The aide is at a pink felt board to which are attached different sized circles numbered from 1 to 9. On the table are a number of little symbols such as arrows, balloons, doves, and chicks. Each symbol is of a distinct color and has a different total number of items. Miss Teresa (aide) calls Carmen to the board and tells her (all in Spanish) to put the yellow arrows on the board. Carmen begins to do as she was requested, putting an arrow under each circle and counting, "one arrow, two arrow . . . five arrow." The other children repeat after her "one arrow" through "five arrow." One boy begins to play with the little felt chicks on the table. Miss Teresa says "Felipe deja allí" and he drops the chicks but begins to finger the orange felt balloons on the table, absentmindedly counting "six balloons, seven balloons, eight balloons," in unison with the other children who are counting arrows. As Carmen sits down the aide picks up the blue dove-shaped pieces from the table and asks, "What are these?" Felipe answers first, saying, "birds." The aide holds up the felt stars and asks "¿Qué son estos?" Berta says "estrellas" and Felipe says "Yo también lo sé." Berta begins to put the stars on the felt board and the children count after her with a decidedly Spanish accent "one (e)star, two (e)star." Miss Teresa asks "What are these?" and the children respond "(e)stars." As the exercise continues Felipe plays absently with the different felt pieces and is again corrected by the aide who says "Felipe, no lo hagas." As Berta sits down, the aide points to one of the circles and says "What number is this?"

This sequence illustrates the type of small group activities focusing on concept development and, in particular, premath skills, at Nuevas Fronteras I. The teacher employed instructional materials supplied by the model developers for the math lesson, which took place in the designated area for that activity. English concepts were the main focus of the session, as the equal emphasis on both languages in

counting and the identification of numbers and shapes tended to decline after the first observation period. Following the directives of the model, the teacher did not correct the children's periodic failure to pluralize the noun "arrow" but did correct the improper behavior of Felipe. She did so, however, in Spanish, which was generally used for more complex communicative needs.

## 4. Classroom Implementation Factors (Site II)

Within each of the five implementation categories reported in Table 73, a similarity in the scores of Site II classrooms at each of the three observation periods is discernible, and is especially noticeable for physical setting and instructional materials. This reflects a close coordination in the classroom organization and the concurrent use of materials and activities of the same curriculum units. There was an increase in overall scores from the first to last observation period in all classrooms, which is accounted for largely by the rise in scores for scheduling following the posting of the daily schedule. Classroom A showed a gradual increase in overall implementation during the year, classroom B a rise followed by a noticeable decline, and classroom C the highest scores for every period in addition to a marked rise followed by a moderate decline. Results for classroom C can be related to teacher enthusiasm and classroom composition, as the teacher was most positive toward and cognizant of the cognitive-styles philosophy of the model and had the best balance of English-preferring and Spanish-preferring children in her class.

### a. Schedule and Organization.

The daily routine was similar in all three classes. The schedule, which was posted in late 1979, remained essentially unchanged during the year, and read as follows:

| | |
|---|---|
| Juice | 15 minutes |
| Circle time | 30 minutes |
| Table activities | 60 minutes |
| Outdoor play | 30 minutes |
| Rest time and wash hands | 15 minutes |
| Lunch and book time | 30 minutes |

Table 73. Nuevas Fronteras II implementation scores by classroom over time.

| Implementation Categories | Maximum Possible Score | Classroom A | | | Classroom B | | | Classroom C | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 | Time 1 | Time 2 | Time 3 |
| Schedule/ Organization | 14.72 | 5.98 | 12.88 | 11.96 | 6.44 | 12.88 | 11.96 | 5.98 | 12.88 | 13.80 |
| Physical Setting | 15.93 | 8.26 | 7.82 | 8.41 | 8.56 | 8.71 | 7.67 | 8.26 | 8.03 | 8.26 |
| Instructional Materials | 4.20 | 3.60 | 4.20 | 3.30 | 3.30 | 4.20 | 3.30 | 3.30 | 4.20 | 3.30 |
| Individual Behavior | 29.52 | 16.81 | 13.94 | 15.58 | 17.22 | 13.94 | 14.35 | 17.63 | 18.04 | 15.17 |
| Instructional Strategies | 9.96 | 6.64 | 5.81 | 6.23 | 7.47 | 6.64 | 5.81 | 7.89 | 6.23 | 6.64 |
| TOTAL | 74.33 | 41.29 | 44.65 | 45.48 | 42.99 | 46.37 | 43.09 | 43.06 | 49.38 | 47.17 |

The Head Start center operated two three-hour sessions daily, and Nuevas Fronteras was implemented in the morning classes between 9:15 A.M. and 12:15 P.M. Classes were similar in that most model-related activities were conducted regularly except for second language activities, which occurred in all classes only during the second period. This was largely a result of the limited knowledge of Spanish by some of the teaching staff and the pressures of fitting a variety of model-specific activities into a three-hour session.

Because they worked a single session, teachers had regular planning and preparation periods before and after class. However, little in-class time was available for individual observations of children to assess their preferred cognitive styles. Teachers indicated in informal interviews that they voluntarily put in extra time because they would otherwise not have had sufficient time to cover all planning, review, and preparation of materials that were required.[6] Staff meetings were not held regularly. The decrease at the third observation period in the scores of classroom A relates to the presence of a substitute teacher unfamiliar with the model, while the dip in classroom B scores reflects a tendency to vary from planned activities at the end of the year.

The stability of scores within an observation period across classrooms reveals a relative absence of variation in the schedule. Most children were bused and arrival and departure times were fairly dependable. The short transition between the morning and afternoon sessions also ensured schedule inflexibility.

b. Physical Setting

The Corona classrooms were roomy, well illuminated, and "warm" in tone. Each was of nearly identical size and spatial arrangement and included most of the areas suggested by the model: a large rug for large group activities, a music center, shelves of blocks, a small group table, a book area, a housekeeping corner, a "discovery" area of games and manipulative toys, and several tables for arts and crafts. Nuevas Fronteras also specifies a cooking area, which was absent except for a sink for washing and an electric frying pan. There also was no specific math area, although numbers and counting were regularly incorporated into the large group and art activities. Room arrangement was orderly and there was no variation in placement of areas over the year. The fact that the room was shared with an afternoon team contributed to the "sameness" of the rooms; individual teachers had less control over room arrangement than if they had had the classroom to themselves.

While number and placement of areas did not change, differences in degree of usage is reflected in the variation in scores. Classrooms A and C have similar first and third period scores with some midyear drop. Classroom B shows a contrasting pattern of a midyear

peak followed by a drop to less than half the maximum possible. Higher scores in this classroom during the first two observation periods relate to the regular use of areas for free play (housekeeping, blocks, discovery) and arts and crafts, while the subsequent drop is due to the teacher's tendency to extend outdoor play and shorten instructional activities late in the year. Free play was less frequent in the other classes, particularly at midyear, as the lower scores at this time reflect.

Scores do not approach the maximum possible in this category because certain daily model activities (such as large group) were restricted to a single area. In addition, the large group and art areas were frequented more consistently than other areas.

c. Instructional Materials

The Nuevas Fronteras Teacher's Manual does not discuss the importance of materials per se, but does stipulate that materials should be accessible and appropriate to each area of the room. There was greater abundance of materials in the art and library areas than in the discovery, block, and housekeeping sections, revealing the model's reliance on the teacher-directed activities that occur in these areas. All rooms had colorful wall displays which included children's work and murals that corresponded to the curriculum unit being presented at a particular time. In addition, labeled instructional charts of colors, numbers, weather, and mealtime tasks were used regularly during large group activities. The optimal midyear scores reflect the greatest use at that time of instructional and display materials that were labeled in both English and Spanish.

Central to Nuevas Fronteras are a set of bilingual bicultural materials referred to as the curriculum units. The stories and pictures in these units provided virtually all the bicultural materials used in the Site II classrooms. Concrete items related to Mexican or Mexican American culture were almost nonexistent.

d. Individual Behaviors

The types of interactions experienced by children, the language used by teaching staff, and the total involvement of adults in the classroom impinge heavily on the effective functioning of the Nuevas Fronteras program. Class interaction scores, which are a combination of these three components, averaged slightly greater than half the maximum possible and declined gradually between the first and third observation periods.

The relatively high scores for the initial implementation period reflect the regular participation of one or more parents in each classroom, although parental participation dropped markedly by midyear. Low participation relates to the absence of a parent

coordinator and parents' room, the lack of promised involvement of the curriculum developers, and the scattered residence pattern which prevented parents and children from identifying with the neighborhood of the school.

The model also suggests a variety of activities to promote children's expression of different cognitive styles. While there were many group activities, scores were to some extent lower for all periods because of the infrequency of solitary activities specified by the model.

Tabulations of teachers' language use are presented in Table 74. Across classrooms, the ratio between observed English utterances and Spanish utterances averaged about two to one during the first observation period and about four to one during the third period. The model ideal of alternating between the two languages was thus met only in part. Factors accounting for the predominance of English as the classroom language included (1) the presence of twice as many English-preferring as Spanish-preferring children in the program (for example, 26 of 39 children were tested in English at Corona); (2) the greater competence in English than Spanish by five of the six teaching staff members; (3) a lack of administrative support for a bilingual emphasis; (4) the lack of timely feedback by the model developers; and (5) the prevalence of English in a community in which the Spanish-speaking population was greatly outnumbered by monolingual English speakers. The imbalance of English-preferring and Spanish-preferring children was promoted by funding decisions regarding transportation of the scattered school population. Morning buses were routed to several predominantly English-speaking neighborhoods, while afternoon children came largely from heavily Spanish-speaking areas.

A number of patterns in teachers' language use can be identified. For all periods in all classes, the total number of language utterances of teachers was greater than that of aides. This reflects the greater frequency of teachers' interactions with children, especially during the teacher-led large group activities. Aides, on the other hand, were more involved in maintenance activities, materials preparation, and classroom set-up during class time. The only time that an aide's level of verbal interaction approached that of the teacher was during the final observation period in classroom A, when the regular teacher was absent and the aide took on teaching responsibilities because of the inexperience of the substitute teacher.

There was also a drop during the year in teachers' Spanish usage in all classes. Classroom B exhibited a steady decline and classroom A a noticeable drop in the final period, while classroom C maintained the greatest amount of Spanish usage at the end of the year. Accounting for this trend was an increasing proficiency in English by previously monolingual or Spanish-preferring children. Socioemotional factors were also involved, as each teacher was able to point out at least one previously Spanish-preferring child who by the end of the

Table 74. Nuevas Fronteras II classroom language production by teaching unit.

| CLASSROOM A INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 48 | 21 | 7 | 0 | 76 | 46 | 42 | 4 | 0 | 92 | 34 | 10 | 5 | 3 | 52 |
| Aide | 5 | 2 | 17 | 0 | 24 | 8 | 0 | 0 | 0 | 8 | 38 | 7 | 3 | 0 | 48 |
| TOTAL | 53 | 23 | 24 | 0 | 100 | 54 | 42 | 4 | 0 | 100 | 72 | 17 | 8 | 3 | 100 |

| CLASSROOM B INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 49 | 33 | 6 | 0 | 88 | 59 | 19 | 5 | 0 | 83 | 86 | 7 | 0 | 0 | 93 |
| Aide | 6 | 0 | 6 | 0 | 12 | 13 | 2 | 2 | 0 | 17 | 7 | 0 | 0 | 0 | 7 |
| TOTAL | 55 | 33 | 12 | 0 | 100 | 72 | 21 | 7 | 0 | 100 | 93 | 7 | 0 | 0 | 100 |

| CLASSROOM C INSTRUCTOR | TIME 1 | | | | | TIME 2 | | | | | TIME 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total | English | Spanish | Translation | Lang. Switch | Individual Percent of Total |
| Teacher | 60 | 28 | 1 | 0 | 89 | 30 | 50 | 7 | 0 | 87 | 52 | 29 | 4 | 2 | 87 |
| Aide | 9 | 1 | 1 | 0 | 11 | 2 | 0 | 11 | 0 | 13 | 9 | 2 | 1 | 1 | 13 |
| TOTAL | 69 | 29 | 2 | 0 | 100 | 32 | 50 | 18 | 0 | 100 | 61 | 31 | 5 | 3 | 100 |

year desired to speak only English in the classroom, even if his or her English ability was still limited. The greater use of Spanish in classroom C indicates the presence of the most Spanish-preferring children of the three classes, a fully bilingual teacher, and some knowledge of Spanish by the aide (the other aides were monolingual English speakers).

The context of language use differed for the two languages. While English was used by staff and children across all settings, Spanish was restricted primarily to large group events in classroom B and to large groups and on an individual basis during art rotation in classroom A. Only in classroom C did it appear that the teacher regularly spoke Spanish with the children during meals and transitions. Concurrent translation was a method used in both large and small groups. It occurred most regularly in classroom A, but averaged less than 20% of the utterances in each class, despite the model's emphasis on the concurrent use of both languages. Language-switching was rare, exceeding 2% of all utterances only in classroom A during the time when the substitute teacher was present.

The primary mode of teachers' verbal interaction in both languages was informational statements, followed proportionately in all classes by questions, commands, and verbal reinforcement. In all classrooms, statements accounted for 50-60% of all utterances overall, but showed a decrease over the year, from 65-71% to 32-42% by the third observation period. In part, this reflects the increasing importance of questions as the year progressed and as children became more adept at responding to teachers' queries and formulating discourse on their own. In classroom C, questions represented nearly half of all teacher verbalizations by the third observation period.

e. Instructional Strategies

The relatively high scores of this category suggest that for the most part each class had large and small groups, first and second language activities, quiet activities, and both child-initiated and adult-initiated activities. The infrequency of second language activities, however, tended to depress scores.

A variety of teaching strategies was used in different activities throughout the year. Children's language use was encouraged through a combination of question-and-answer and one-to-one work. Stories and open-ended discussions during large group activities were augmented by English and Spanish songs in all classrooms, corresponding to the Nuevas Fronteras tenet that songs can be learned easily in both languages because they are enjoyed by children. Large group activities included review of special events before and after they took place and closed with a preview of the upcoming crafts period. During the craft rotation, close attention to the needs of individual children by both teacher and aide was followed by a review of the work produced by each child.

There was greater effort to encourage language development in English than in Spanish, although all teachers voiced the advantages they perceived in bilingualism. In practice, they concentrated on English language activities. One teacher stated that it was all they could do to teach English within the constraints of the three-hour session. The large group situations of concurrent language use almost always gave greater priority and time to English. In addition to structured activities, second language learning occurred informally during crafts at tables that included both English-preferring and Spanish-preferring children (who were addressed in their preferred language), and during meals (when the same food identification and thanks song were learned in both languages by all children).

Corresponding to the preliteracy and premath emphases of the model; letter and number recognition were promoted through the daily use of labeled charts, placemats, name cards, and personal cubby spaces. By the second observation period, practice in writing numbers and letters occurred daily. Teachers also recorded children's descriptions on their art work, and children had time to look at books on many days.

Social skills included learning a distinctive routine early in the year. In addition to a pronounced routinization of the rules and classroom schedule, children received much cooperation training through structured task assignment for meals and the more informal peer teaching that occurred as teachers encouraged children to help each other during the art activities.

Classroom variation in instructional strategies scoring and in total implementation results relates to a number of factors. Classroom A's lower scores reflect the presence of the largest number of children (five) with emotional or behavioral problems. They required more teacher attention and effort on her part to ensure that children knew the reason for her discipline.

A high initial implementation score for classroom B is associated with more rapid coverage of curriculum units, a more extensive use of active activities (e.g., dance, songs with movement, blocks), and a more regular use of display materials for color and weather review compared with the other classrooms. The decline over the year relates to a lesser degree of teacher verbalization and to an inability to effectively control the movement and actions of children in the class.

There was a higher overall score in classroom C for all observation periods, despite the fact that there were two handicapped children and three speech-needs children in the class who required special attention. The bilingual ability of the teacher-aide team led to greater stress on the desirability of two languages in the classroom. Language development was encouraged by the overall high rate of verbalization and expansion during large and small groups.

Children appeared to have internalized the classroom routine early in the year, responding to a single word or hand clap; this is reflected in the low proportion of commands and verbal reinforcement found in this class. While the teaching staff of all classes liked and utilized the model's curriculum units, the classroom C teacher had the most positive perception and understanding of the philosophy underlying Nuevas Fronteras.

The following excerpt is from an evaluation researcher's fieldnotes. It illustrates various aspects of the implementation process at Nuevas Fronteras II reflected in the preceding discussion.

> Following a filmstrip of the story of the three little pigs, the teacher leads a discussion in English with the entire group using flannelboard figures. She reminds them in English of the title, adding, "de la historia de los tres puerquitos." Daniel watches closely and answers her questions in English in unison with the other children. The teacher then reviews the related craft activities. At one table, the children will cut and paste in order eight pictures of events from the story. At another, they will practice writing the number 8 and color eight pigs. At a third table they are to make free drawings about an earlier field trip taken as part of the "Community" curriculum unit. The teacher uses mainly English in describing the activities, which she has incorporated into the "Ranch and Farm Animals" unit.
>
> Daniel is called to the middle table, where he sits down. "¿Sabes que número es?" the teacher inquires, pointing to a stencil of the number 8 posted on the wall next to the table. "Eight," he replies. "Bueno," she says. Daniel writes a number 8 on his paper and then another. "Look it. Eight," he says to Bobby who sits next to him. He writes a series of the number 8 and holds his paper for the teacher to see. She smiles and praises him in Spanish. Picking up a yellow crayon, he identifies its color to Bobby, "Look it, yellow." He sees that Bobby is not writing the number 8 correctly, and taps him to show him how he did it, saying, "No, no, no. Hey, look at it. Pon este, mira." He leans over, and points to his own paper to help Bobby get it right.

The "table" or "craft rotation activities" described here were regularly carried out at the Corona site. Given the lack of a math area at this site, the math-related activity took place at an arts and crafts table. All the activities and materials were designed to coordinate with one of the curriculum units, the "Ranch and Farm

Animals" unit. Activities geared to concept development included recalling the sequence of a story, ordering pictorial materials, and recognition of colors and numbers. They occurred through a combination of adult-directed (the "three pigs" discussion) and child-initiated (Daniel's "teaching" of Bobby) learning contexts. The teacher, following one of the language use strategies recommended by the model, made limited use of concurrent translation when she added the title of the story in Spanish. The predominant classroom language at Corona, however, reflected in the discussion, was English.

5. The Comparison Groups

As mentioned previously, children comprising the comparison groups in both South Texas and Southern California attended Head Start programs.

The comparison site for Nuevas Fronteras I was situated in an old wooden building about three miles from the experimental Head Start. Four rooms on the ground floor of the two-story structure provided the learning environment for 40 children, two teachers, and two aides. The rooms were divided into areas which were neither clearly demarcated nor labeled but which had colorful seasonal and topical decorations. Six areas were found in each class: book, housekeeping, art, science, manipulative, and music. Because the comparison site bordered an area used by other schools, school facilities (e.g., band, library, and ball fields) not available to the experimental classes were used by the comparison group.

The schedules of both experimental and comparison sites in South Texas were similar, except that less time was devoted to instruction and more to outdoor play at the comparison site. Breakfast and lunch periods took place earlier at the comparison site and school was dismissed 15 minutes earlier. The teachers included an afternoon activity (story or game) after the children's nap, while activities rarely took place after nap time at Nuevas Fronteras I. Comparison children; who as at the experimental site were all Mexican American, generally worked in two or three small groups in the two rooms alloted to each class, requiring an adult to supervise each room. The two classrooms alternated use of the playground, which was smaller than the experimental playground, so that children had little opportunity to interact with children from the other classroom.

In contrast to the experimental children who lived in the outlying areas of the community and therefore had to be bused, comparison children lived in the vicinity of their school. All 20 children in each classroom spoke Spanish and only a few spoke and understood English. Teachers and aides generally spoke Spanish with the children, although one teacher did interject English sentences and commands into the daily routine. Parents were observed participating frequently in both comparison classrooms.

The comparison teachers utilized their own curriculum based on a combination of the Peabody Kit and the Southwest Education Development Labs (SEDL) Bilingual Early Childhood Program. The SEDL program is a highly structured curriculum geared toward specific learning goals that aim to develop the child's intellect through activities appropriate for each individual child. Activities, tied to stages, stress both "content" and "process," primarily through teacher-child interactions.

A goal of developing English language competency in Spanish speakers is to be implemented through the use of both languages in the classroom. New concepts are introduced in the child's first language. Systematic bilingual language instruction occurs in opening exercises and conversation time through songs, counting, and naming colors and shapes. Other language development objectives include (1) discriminating sounds, (2) knowing their sources, (3) remembering and repeating sound patterns, (4) building basic language patterns in English, and (5) increasing the child's vocabulary in English.

Objectives for concept development include (1) classification, (2) labeling, (3) learning parts and functions of objects, and (4) some seriation. Comparison children were observed learning numbers, shapes, colors, and the names and jobs of community professionals in Spanish and to a lesser extent in English. In the realm of socioemotional development, SEDL stresses the acquisition of a positive self-concept as children take part in daily activities which provide them with competency skills. Materials found at the Nuevas Fronteras I comparison site included art supplies, manipulative toys and games, books in English and Spanish, audiovisual items (records, film strips), playground equipment, sleeping mats, and classroom furniture.

The comparison site for Nuevas Fronteras II was an independently operated Head Start center located in a newly remodeled wing of a public school in a community about 15 miles from the experimental site. In addition to office and kitchen facilities on the premises, there were six classrooms. Each was brightly painted and well illuminated, partially carpeted, and had its own sink and bathroom. The experimental site, by contrast, had no on-site kitchen, a more distant office, no in-class bathrooms, and only cold-water sinks, and classrooms had to be shared by two teaching staffs. Comparison classrooms had housekeeping, block play, music, science, book, and art learning centers, each of which had colorful wall displays and both purchased and handmade materials. Adjacent to the classroom was a fenced-off playground with log-climbing structures, swings, slides, and tricycles. Classes alternated use of the playground so there was less interaction of children from different classes than occurred at the experimental site.

The Site II comparison and experimental sites both had three-hour morning sessions, and an afternoon session followed at the experimental site. Most of the children at both sites were bused, but they were less residentially scattered at the comparison site which was located in a larger community. Posted schedules in comparison site classrooms called for an introductory sharing time, outdoor play, snack, work period (act, story, music and/or free play), clean-up, lunch, quiet time (song, story, or poems), and review of the day.

The curriculum of the Site II comparison Head Start center was based on children's choice as well as adult direction, and drew on the Bowmar Early Childhood Series and Peabody Language Development Program. Parents attended regularly and were involved in instructional activities along with aides. Daily and weekly planning followed a series of themes. By comparison, the experimental site had less regular parental participation and required more maintenance tasks and less instructional time on the part of aides.

Socioemotional goals were to develop a child's self-esteem and awareness of the world, expose children to a variety of experiences, encourage exploration without pressuring the child, increase responsibility, permit dramatic play, and provide health education. Much positive reinforcement characterized adults' relations with children. In the area of concept development, the stress in most of the comparison classrooms was on letter recognition, writing skills, and appreciation for books. Numbers, shapes, spatial relations, perceptual acuity, and calendar and weather concepts were also taught. The fact that the comparison and experimental sites of Nuevas Fronteras II were similar in most of these objectives may explain the relatively equal performance of children in these areas on the standardized tests.

Objectives for language learning included building vocabulary, association of words with objects, and identifying size, likenesses/differences, and classes of objects. Most teacher-aide pairs included a bilingual person because there were usually several monolingual Spanish children in each class. While there was no systematic second language instruction, children in some comparison classrooms learned songs, stories, numbers, and colors in both languages. Spanish was also used to assist individual children in understanding and for word meanings. However, like the experimental site, more English than Spanish was used by teachers at the comparison center. While children at the experimental site were of Mexican American and Anglo backgrounds, the comparison site population included Black and Asian children as well.

## C. Summary and Feasibility of Transfer

Results of the standardized tests and the classroom observations reflect the implementation process at each site. The few significant differences found between experimental and comparison groups favor children who participated in the Nuevas Fronteras curriculum model. Differences found favoring Spanish-preferring children at Site I on Spanish Acquisition and on the measures of English Language Acquisition and Comprehension are consistent with the extensive practice the children at this site were observed to receive in recitation, identification, word recognition, and rhyming.

English-preferring experimental children at Site II outperformed their Head Start comparison group on the measure of English Comprehension. This finding is consistent with the model's emphasis on recitation and recall. On all other measures no significant differences were found between experimental and comparison group children. Thus, participation in a bilingual program did not hinder the children's development in their first language. It is interesting to note that the few English-preferring children at Site I followed a pattern similar to that of many Spanish-preferring children at all sites where English was the predominant language of the classroom; that is, they came to prefer their second language (Spanish) in the classroom and showed consistent gains across a number of constructs in that language.

Experimental and comparison group mothers at both sites were favorably disposed toward bilingual education. Both experimental and comparison parents at Site I reported Spanish to be the preferred language of their children and themselves. Parents at Site II perceived their English language ability to be better.

Teaching staff at both sites were generally favorable toward the Nuevas Fronteras curriculum. After experience with the model, all teachers felt more strongly that the social aspects of bilingualism were its primary benefits for both English- and Spanish-preferring children.

Both sites were relatively successful in implementing the model especially with respect to maintaining a regular schedule, establishing and using distinct learning centers, having required materials, and conducting model-appropriate instructional activities. The successful implementation of the model at sites with different schedules shows that it can be used flexibly for both half-day and full-day sessions. Relatively higher implementation scores at Site II suggest that closer adherence to Nuevas Fronteras guidelines may be possible with a routine which gives teachers daily planning and preparation time apart from their teaching responsibilities.

The single area that was consistently most difficult to implement at both sites was that of individual behaviors. There were two other barriers to implementation. Teachers at both sites found it difficult to reach a balanced use of English and Spanish in the classroom owing to the language abilities of the children; and dispersed residence patterns and lack of transportation made parent participation in the classroom difficult.

## FOOTNOTES

[1]Owing to the small sample size when Spanish-preferring children at Corona were divided by entry-level English ability, inferential statistics could not be used to contrast experimental and comparison children. Observable trends were, however, consistent with those at Rio Grande City and across all models. On measures of English Acquisition and English Concept Development experimental children with little English ability had higher posttest means than did the Head Start comparison group ($EMLU_{\bar{x}}$ = 1.73 vs. 1.23; $PSIE_{\bar{x}}$ = 12 vs. 10.6), whereas on measures of English Comprehension the means of the two groups were very similar. Experimental children with entry-level abilities in English had a higher mean score on the PSIE (21.7 vs. 28) and EMLU (3.8 vs. 3.3) but a somewhat lower mean on the comprehension measures (10.0 vs. 11.2).

[2]Generally higher rank order correlations between test measures and observed classroom behavior in Spanish over English in language acquisition and production reflect the extensive use of Spanish by both English- and Spanish-preferring children in the Rio Grande classroom. (See Appendix W.)

[3]The Spanish comprehension skills practiced in the classroom appear, however, to have little relation to those tapped by the standardized tests. (See Appendix W.)

[4]The only child who did not -- Oscar -- had been the only Spanish-preferring child who at the first observation period registered practice of concepts in his second language.

[5]These patterns in language use related to concept development also account for the relatively low correlation between test results and classroom observations in this area. (See Appendix W.) Given the decline in emphasis on Spanish concepts, the limited behaviors of the Spanish-preferring children in the classroom toward the end of the year did not reflect their level of Spanish concept development measured by the tests. Similarly the extensive classroom practice in English at the end of the year resulted in a number of Spanish-preferring children ranking even higher in English concept development on classroom observations than the English-preferring children, a trend not reflected in the test measures.

[6]In spite of this unpaid overtime, however, teachers expressed overall job satisfaction at Site II, as they received salaries that were competitive with similar professional positions in the community.

# VIII

## SUMMARY OF FINDINGS AND IMPLICATIONS

This chapter summarizes the results of the evaluation of the Head Start bilingual bicultural curriculum development effort for Spanish-speaking children. Implications of the results for preschool bilingual education and of the methodology employed are also discussed.

### A. Child Findings

#### 1. Spanish-preferring Children

> a. Spanish-preferring children who were exposed to the bilingual bicultural curricula performed better on English language measures than did comparison preschool children who were not exposed to structured bilingual bicultural curricula.

At posttest, Spanish-preferring experimental children performed significantly better than their Head Start comparison groups on English language measures of Language Acquisition, Concept Development, and Perceptual Motor Development ($p < .05$). The experimental children also performed better than comparison children on the English Comprehension measure. However, the differences for the English Comprehension measure were only significant at the .10 level of confidence. Despite such gains, Spanish-preferring children generally did not achieve the same level of performance on these posttests as did their English-preferring classmates. These English-preferring classmates were culturally similar to the Spanish-preferring children, although their English language abilities were greater at the beginning of the Head Start year.

These results occurred despite the fact that the comparison groups were enrolled in preschool programs with similar objectives and with bilingual teachers who provided some input in Spanish. The comparison programs, however, did not offer a structured bilingual bicultural preschool curriculum.

These findings are augmented by observational data which indicated that Spanish-preferring experimental subsample children increased their use of the English language in the classroom by 21% over the course of the year. This increased use of English was characterized by use of grammatical forms such as complete sentences and plural nouns which the children generally had not been observed to use at the beginning of the

preschool year. Children were also observed to increasingly use English for visual discrimination and seriation/sequencing.

In the area of socioemotional behavior, observed instances of appropriate behavior consistently outnumbered the converse of such behaviors throughout the year. The observed increase in the proportion of appropriate socioemotional behavior by the subsample children was due primarily to the gains of 58% of the Spanish-preferring children in the area of motivation. Over the course of the Head Start year, these children showed an increasing willingness to complete activities independently.

The consistency of the qualitative and quantitative findings suggests that Head Start experience in general may provide Spanish-preferring children with some isolated practice in English, but that consistent improvement across a number of dimensions of English usage comes about through exposure to curriculum models structured to provide systematic practice with English.

b. Spanish-preferring experimental group children also increased their linguistic and functional competencies in the Spanish language.

Spanish-preferring experimental children showed significant gains over Head Start comparison children on some measures of language performance in Spanish. In the area of Spanish language production, the experimental group children demonstrated greater gains on measures of their production of Spanish words and use of grammatical forms when telling a story than did comparison children. Similarly, on the measure of concept development in Spanish, experimental group children outperformed children who received Head Start exposure without a bilingual curriculum model. Experimental children performed as well as comparison groups on all other Spanish measures.

Classroom observations revealed that children in the Spanish-preferring experimental group, despite using less Spanish, increased their Spanish language competence at the same time that they increased their English language use and English language competence. Eighty-one percent of the Spanish-preferring experimental group increased the variety of Spanish grammatical forms that they used. Use of plural nouns, the negative and interrogative forms, and the present and past tenses increased over the year. These data suggest that the achievement of the second language goals of the bilingual bicultural curricula will not adversely affect the development of preschoolers' primary language.

c. The gains made by Spanish-preferring children were different, depending on their English language abilities upon entering Head Start.

Classroom observation data revealed that the Spanish-preferring experimental group children received varying degrees of exposure to English depending on the level of English linguistic development at which the children entered preschool. At all sites the children could be divided into two main groups: those children with little/no productive ability in English and those beginning the year with some measurable productive ability in English.

Spanish-preferring experimental children who entered preschool with limited/no English-speaking abilities made significant gains over similar comparison children on measures of English Language Development and Concept Development ($p < .05$). These gains are partly explained by the exposure to English provided them by the teachers using the bilingual bicultural curricula. Early in the year their use of English was in the form of repetition of isolated lexical items modeled by the teacher. By the second observation period, teachers began to interact more frequently with these children in English. Toward the end of the year, teachers continued to increase the amount of English used with these children to the extent that the children were able to respond with single words and short sentences in English to both teachers and peers. The data suggest that the bilingual preschool programs provided these children with access to and practice in English not available in preschool programs without a bilingual bicultural model and that ability with two languages is important for teaching staff working with preschool children with limited/no English-speaking abilities.

Spanish-preferring experimental group children who entered Head Start with English language abilities made significant gains over similar comparison children on the English Comprehension measure ($p \leq .05$). A possible explanation for the gains made by the experimental group in comprehension is that as the bilingual curricula provided input in both Spanish and English, children received essentially multiple exposure; that is, the curricula provided the children with the opportunity to relate meanings in both languages.

## 2. English-preferring Children

a. English-preferring experimental children performed as well as comparison children who attended a Head Start center without a bilingual curriculum model.

Similar gains were made by both English-preferring experimental and comparison children on all English language measures. There were no observed adverse effects on English language, concept, and socioemotional development measures for English-preferring children who participated in the bilingual programs.

Classroom observations were consistent with the test results. Eighty-six percent of these subsample children were observed to diversify their practice with grammatical forms in English. By the end of the year, the majority of the children increased their use of the negative form and past, present, and future tenses.

Functionally, almost two thirds of the children diversified their use of English for various purposes. By the end of the year, they had acquired the ability to provide descriptions of themselves and give verbal instructions in English. These children also displayed an increased diversity in memory and recall abilities. Gains were also observed in areas of self-esteem and motivation.

This suggests that an English-speaking child's placement in a bilingual/bicultural preschool classroom can result in at least the same level of gains that would occur through placement in a regular preschool classroom.

b. English-preferring children's progress in Spanish was limited.

The test scores of both experimental and comparison children on most Spanish measures remained at or near zero at posttest. In the classroom it was observed that the majority of the English-preferring children used Spanish for the repetition of isolated lexical items in response to teachers' modeling, usually during structured activities. The exception to this pattern was the children who entered preschool with some demonstrated ability in Spanish, especially those at the site where Spanish was the predominant classroom language. English-preferring children at this site had experiences in their second language similar to those of Spanish-preferring children with some entry-level abilities in English at other evaluation sites. These children were addressed by teachers in both languages and by peers primarily in Spanish. They were observed to increase their practice with negative and interrogative forms and the use of the present tense in Spanish. They also expanded their functional

abilities with Spanish and maintained progress in English similar to that of the other English-preferring children.

B. Parent Findings

1. All sample mothers expressed highly positive attitudes toward the educational system and bilingual education.

Mothers of experimental and comparison group children felt highly positive toward the educational system, bilingual education in general, and the curriculum models. Also, they had similar educational aspirations for their children; most hoped for a college education for their offspring. Both experimental and comparison groups appeared to provide similar home environments.

2. Transportation availability and the distance between some Head Start sites and the home affected parent participation.

Despite the positive attitudes of parents toward bilingual education, their participation in the classroom was difficult to secure at some sites. Lack of adequate transportation impeded parental participation in Head Start programs that were located at sites distant from the main residential areas of the Head Start families. In situations where the Head Start center was located in the immediate neighborhood of the families being served, parents became involved in classroom activities. This suggests that transportation resources and the geographical proximity between the homes and the Head Start centers should be taken into account in planning parent involvement activities at a local level.

C. Teacher Findings

1. A majority of classroom staff participating in the experimental programs at all sites had ability in English and Spanish.

Unlike many studies of bilingual programs which report large numbers of teachers with little proficiency in Spanish (e.g., AIR, 1978), 31 of the 33 teachers interviewed across all sites stated that they used Spanish in situations outside of the classroom. Findings from classroom observations were consistent with the teacher interview data on the language skills of teachers. Only three of the teachers were never observed to use Spanish

in the classroom. Twenty-six of the teachers were observed to use Spanish in one third or more of their classroom interactions. The Spanish language abilities of the Head Start teaching staff cannot be ignored as a factor in the success of the demonstration effort. Such abilities should also be a consideration in planning future efforts in bilingual preschool instruction.

2. Teachers viewed the social value of bilingual education as its major advantage.

Teachers' integrative orientation toward bilingualism and bilingual education was heightened over the course of the preschool year. Benefits such as cultural awareness, intercultural communication, and self-enrichment were those most frequently cited for both English- and Spanish-preferring children.

D. Degree of Implementation

1. Approaching a balanced use of two languages in the classroom proved the most difficult implementation goal to achieve.

All teachers tended to rely on one language, that which corresponded to the language preference of the majority of the student population, regardless of their own linguistic preference. Even at those sites where many of the children had some bilingual abilities, the language used in the community in which the preschools were found predominated in classroom use. Although some models did not require that all classroom staff be bilingual, monolingual teachers could not always respond to children in spontaneous interactions. The linguistic input provided to individual children varied with the entry-level abilities of the children. Spanish-preferring children with some initial ability in English received increasing practice in English throughout the year and, in those classrooms where English predominated, many actually demonstrated a decided preference for using English in the classroom context at the end of the year. Spanish-preferring children who demonstrated no ability in English at pretest received increasing input in that language, but in general maintained their preference for Spanish in most classroom interactions. With the exception of the few English-preferring children at sites where Spanish was the predominant classroom language, the teaching staff provided direct input only in English to English-preferring children.

2. Carrying out the classroom language strategies suggested by the models was the aspect of programming most related to positive child outcomes.

It was at those sites where the teachers most consistently followed the model's strategy for language practice that significant differences between experimental and comparison Head Start children were generally found. Teachers using models recommending language separation encountered difficulties in maintaining the use of a single language during language sessions. At sites where proficiency with the second language was very low, children often did not understand a lesson conducted entirely in their second language and became bored. At other sites where second language proficiency of the children was high, they often persisted in speaking the second language even when the teacher was conducting the session in their first or preferred language.

Staff turnover affected the instructional strategies employed by the teachers. It was generally impossible to carry out small group or language sessions effectively with a single teacher, and new personnel needed time to adapt to a curriculum before they were able to carry out the lessons as the models directed. Training sessions proved especially valuable in providing all teachers with an opportunity to practice skills targeted by the models as important for carrying out instructional strategies and in ensuring that the teaching personnel had understanding of and confidence in the model.

## E. Implications

### 1. Programmatic Implications

a. Bilingual preschool programs can be effective for both Spanish- and English-preferring children.

Test results and classroom observations showed that the bilingual curricula contributed to the positive development of Spanish- and English-preferring children. Spanish-preferring experimental children increased their use of English and made consistent gains across a number of English language and cognitive criteria when contrasted to comparison groups. Despite these results, there was no evidence of what some researchers (MacNamara, 1966; Torrance, Gowan, & Aliotti, 1970) have referred to as a "balanced effect"; that is, bilingual children's skill in their first language did not decrease as they improved second language skills. To the contrary, experimental Spanish-preferring children scored consistently higher than either Head Start comparison or stay-at-home comparison children on a number of Spanish measures.

This trend is consistent with the classroom observation data. These data show that Spanish-preferring children used less Spanish in the classroom over the year. However, they expanded their use of grammatical forms and increased their functional competencies in Spanish.

English-preferring experimental children generally performed as well on all measures in English, as did the English-preferring comparison groups. These children were also observed to expand their grammatical and functional competencies in English. This suggests that participation in a bilingual program by English-preferring preschoolers can result in at least the same level of gain that would be achieved in a Head Start program without a bilingual curriculum model.

b. One year in a bilingual curriculum may not be sufficient for Spanish-preferring preschool children to reach the level of competency in English necessary to compete successfully with their English-preferring peers.

Spanish-preferring children with limited/no English ability at entry to the bilingual bicultural classrooms were able to make significant gains in English over similar comparison children. However, their grammatical and functional competence in English was still limited at the end of the year in both their classroom and test performance. Given the relative success of the programs, it would be appropriate for ACYF or other federal agencies to consider expanding a similar systematic bilingual bicultural curriculum development effort through second or third grade.

c. Bilingual preschool programs are especially effective for those children who enter the programs without measurable abilities in English.

Children with no demonstrated entry-level abilities in English made significant gains on a number of English constructs over the course of the Head Start year. The bilingual nature of the classroom provided these children with access to situations in which they could systematically practice English through structured interactions with teachers and peers. This suggests that the bilingual bicultural curriculum models may be especially effective in those situations where a majority of the children's practice outside the preschool is in Spanish.

## 2. Methodological Implications

In meeting the goals of the evaluation, a number of methodological approaches were integrated in a variety of ways. The implications of the methodology may prove relevant to future evaluations or to bilingual research in general.

> a. Cooperation between the evaluators and the curriculum developers can help ensure the relevance of the evaluation.

In an evaluation of this nature, scientific objectivity can only be achieved by defining and measuring the treatment process and then selecting and developing impact measures that reflect the goals of treatment. This was achieved by allowing instrument selection and development to take place over the same time period that the curriculum developers were preparing and piloting their curriculum packages. Impact measures and criteria were selected to reflect the developmental constructs that were emphasized by the models and the overall Head Start objectives.

> b. A combination of observational and test/interview approaches can increase the interpretability of evaluation findings.

In assessing the impact of bilingual bicultural efforts, it is important that observational procedures be combined with tests/interviews. The naturalistic observations permitted an investigation of the reasons for the treatment effects found in the analysis of test data. The use of an interactional analytic process in which information derived by quantitative methods was compared and contrasted to results gathered through qualitative means enabled a more specific and accurate interpretation of the complex interactions among the children, the teacher, and the task environments that were intended to promote the curricular goals of the models being evaluated.

The information gathered on the implementation process allowed for systematic study of many issues of concern to teacher trainers, program staff, and policy planners with attention to both program processes and outcomes. Sufficient information is supplied through the qualitative analysis to enable interested parties to determine which factors hinder or promote program implementation in different settings.

c. Observational studies of individual children can provide generalizable findings if a sufficient variety of cases is studied to determine common patterns.

As the findings of this study have shown, individual children received different variations of the treatment. By selecting a sufficient number of subsample children with different entry-level characteristics at each site, it was possible to estimate the extent to which the treatments yielded a similar set of outcomes or nonoutcomes across different cases. The consistent patterns observed across all models for each set of children with similar attributes strengthen generalizations about the impact of bilingual preschool curricula. Thus, in evaluations using observational techniques, especially those related to the linguistic abilities of children, it would seem crucial that the sample be heterogeneous in the characteristics on which the treatment is predicted to have an effect.

d. Qualitative analysis permits an estimate of the effects of the treatment to be made in situations which preclude parametric statistical analysis.

Observations made in situations where cell size was severely reduced, for example, in classrooms with very few English-preferring children, allowed an assessment of the effects of the treatment for such children to be made. The use of observational techniques are, therefore, extremely useful for providing information on individuals who possess different characteristics than those of the majority of a given population but do not exist in sufficient numbers to be examined through the use of parametric statistics.

e. An adequate assessment of preschool language development requires measurement on a number of developmental constructs.

Study findings showed that the same children had different entry-level abilities on different measures. Fully three fourths of those Spanish-preferring children who demonstrated little/no English ability on the measures of language acquisition and concept development at pretest scored above the minimum criterion on the test of English comprehension. This suggests that children who live in dual language environments have varying skill levels across different developmental constructs. Therefore, measurement across a variety of developmental constructs is more appropriate than the measurement of a single construct.

**f. Multiple quality control techniques are essential to large-scale observational data gathering.**

In carrying out the evaluation, a series of activities was carried out to ensure the accuracy and consistency of the information collected. This was achieved through: selecting highly qualified bilingual data gatherers; providing training to the fieldworkers; closely supervising the field operations; conducting parallel observations; constant monitoring of field reports (including weekly feedback to the fieldworkers and reorientation and retraining meetings); establishing a central data processing center to facilitate consistency of the data; developing standardized formats for accurate data recording; and developing a field manual to provide common definitions, delineate role relationships, and specify ethical and confidentiality considerations. In monitoring a multisite evaluation effort which includes large-scale observational data collection, extensive quality control procedures should be a consideration if comparable data is a concern.

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# APPENDIX A

## OVERVIEW OF AN EVALUATION OF HEAD START CURRICULUM DEVELOPMENT PROJECT REPORTS

# OVERVIEW OF AN EVALUATION OF HEAD START CURRICULUM DEVELOPMENT PROJECT REPORTS

A list of the supporting documents produced for this study and a summary of their contents are presented below. ERIC reference numbers are included where appropriate.

Review and Recommendation for the Test Battery, July, 1978 presents the procedures used in selecting the standardized instruments, addresses the critical issues which guided the selection of the tests, lists the recommended tests and justification for their selection and discusses the process of test administration. ED190221

A Qualitative/Quantitative Data Gathering Approach, December, 1978 presents the rationale for the multimethod data collection strategy and describes the various procedures utilized in the evaluation: participation researcher, naturalistic observations, teacher interviews, implementation checklists, time and event samples, etc. In addition, a discussion of data management and data analysis procedures is presented. The report also elaborates on the integration of psychometric and ethnographic data. ED190222

A Plan for the Pilot Study of Child and Parent Impact Measures, December, 1978 contains a description of the procedures used to pilot test the battery of impact instruments and a preliminary plan for their field testing with a sample of children from the evaluation sites. The latter discussion provides details on site contact, training of examiners, and examination procedures.

Pilot Study Results of the Child Assessment Measures: June, 1979 reports the results of the pilot testing of the impact instruments and recommends procedures for test administration including selecting and training of examiners, monitoring the testing, facilities, scheduling and order of testing. ED190219

Final Report of the Pilot Study Results and the Training of Fieldworkers for the Ethnographic/Observational Component: September, 1979 presents the results of the pilot testing of the qualitative techniques as well as the training process for the fieldworkers. Included are the piloting of implementation checklists, time and event samples, ethnographic notetaking, coding, quality control, role management and policy and ethical matters. ED190230

Field Supervisor Observations and Quality Control of Ethnographic Data: December, 1979 describes, in detail, the qualitative data collection techniques and discusses quality control procedures for the ethnographic data including the monitoring of field notes, parallel observations, the development of a field manual and the reorientation and retraining of fieldworkers. ED190220

Report of the Pretest Results and Posttest Analysis Plan for the Quantitative Component, February, 1980 presents an overview of the instruments, and data analysis procedures used in the pretest at the evaluation sites. It also includes a profile of the sample at each evaluation site and the results of the quantitative impact measures on children, parents and staff. ED190218; Appendices ED190223

Preliminary Report on the Field Supervisor's Spring Parallel Observations and Debriefing of Fieldworkers: July, 1980 reviews the data collection strategies, presents the results of the supervisor-fieldworker second set of parallel observations and describes the plan for debriefing implementation and participant researchers.

## CRITERIA FOR CALCULATING MEAN LENGTH OF UTTERANCE SCORES

Criteria for calculating MLU's were based on those of Brown (1973) and Chesterfield and Pérez (1981). They are as follows: (1) Only fully transcribed utterances are used; none with blanks. Portions of utterances, entered in parentheses to indicate doubtful transcription, are used. (2) All exact utterance repetitions are included. Stuttering is marked as repeated efforts at a single word; therefore the word is counted once in the most complete form produced. In the few case where a word is produced for emphasis or the like (no, no, no) each occurrence is counted; such fillers as mm or oh are not counted, but no, yeah, hi, si, ese, or hola are counted. (3) All compound words (two or more free morphemes), proper names, and ritualized reduplications count as single words. Examples of these are birthday, rackety-boom, choo-choo, rompecabezas, abrelatas, cumpleaños. The justification is that there is no evidence that constituent morphemes function as such for these children. (4) All irregular past tenses of the verb (got, did, went, hice, fui, puse) are counted as one morpheme. The justification is that there is no evidence that the child relates these to present tense forms. (5) All diminutives (doggie, perrita) are counted as one morpheme because these children do not seem to use the suffix productively. Dimunitives are the standard forms used by the child. (6) Auxiliaries (is, have, can, puedo, ha, está) are counted as separate morphemes, as are all catenatives: gonna, wanna, hafta. These latter count as single morphemes rather than as going to or want to because they apparently function so for the children. (7) All inflections are counted as separate morphemes; for example, possessive (-s), plural (-s), third person singular (-s), regular past (-d), progressive (ing).

# APPENDIX C

## DESCRIPTIVE STATISTICS FOR EXPERIMENTAL HEAD START AND COMPARISON CHILDREN BY LANGUAGE PREFERENCE AT EACH OF EIGHT SITES

DESCRIPTIVE STATISTICS FOR MODEL: UN MARCO ABIERTO I
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| MEAN | 53.05 | 0.99 | 8.00 | 17.60 | 122.40 | 0.70 | 17.95 | 17.45 |
| STANDARD ERROR OF MEAN | 0.64 | 0.08 | 0.87 | 0.23 | 1.68 | 0.04 | 0.41 | 0.85 |
| STANDARD DEVIATION | 2.87 | 0.35 | 3.88 | 1.05 | 7.52 | 0.18 | 1.85 | 3.79 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| MEAN | 20.15 | 11.55 | 16.60 | 2.75 | 3.90 | 3.35 | 3.35 | 0.50 |
| STANDARD ERROR OF MEAN | 0.84 | 1.09 | 1.24 | 0.84 | 0.07 | 0.27 | 0.24 | 0.26 |
| STANDARD DEVIATION | 3.77 | 4.88 | 5.53 | 3.75 | 0.31 | 1.23 | 1.09 | 1.15 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 5.00 | 40.00 | 0. | 10.00 | 5.00 | 80.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 90.00 | 65.00 | 60.00 | 5.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| MEAN | 4.31 | 3.28 | 2.14 | 0.68 | 9.15 | 7.50 | 8.50 | 4.15 |
| STANDARD ERROR OF MEAN | 0.16 | 0.34 | 0.40 | 0.29 | 0.45 | 0.34 | 0.47 | 0.91 |
| STANDARD DEVIATION | 0.71 | 1.53 | 1.80 | 1.30 | 2.03 | 1.50 | 2.09 | 4.07 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 10.00 | 20.00 | 75.00 | 0. | 0. | 0. | 35.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 18.00 | 18.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| MEAN | 65.11 | 36.78 | 1.35 | 2.10 | 4.85 | 2.15 | 15.00 | 10.65 |
| STANDARD ERROR OF MEAN | 5.35 | 5.78 | 0.80 | 1.32 | 0.33 | 0.30 | 0.49 | 0.99 |
| STANDARD DEVIATION | 22.72 | 24.53 | 3.57 | 5.92 | 1.50 | 1.35 | 2.20 | 4.44 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 11.11 | 65.00 | 65.00 | 5.00 | 5.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 5.00 | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: UN MARCO ABIERTO I
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: COMPARISON HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 23.00 | 23.00 | 22.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| MEAN | 51.61 | 0.89 | 8.95 | 17.32 | 158.91 | 0.74 | 18.17 | 17.83 |
| STANDARD ERROR OF MEAN | 0.67 | 0.08 | 0.88 | 0.23 | 1.69 | 0.05 | 0.40 | 0.54 |
| STANDARD DEVIATION | 3.20 | 0.38 | 4.11 | 1.09 | 8.11 | 0.22 | 1.90 | 2.59 |
| % SCORES AT TEST FLOOR (SCORE = 0.) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| MEAN | 18.83 | 12.13 | 13.43 | 3.17 | 3.83 | 3.61 | 2.96 | 0.78 |
| STANDARD ERROR OF MEAN | 0.72 | 0.92 | 1.28 | 0.87 | 0.10 | 0.20 | 0.28 | 0.28 |
| STANDARD DEVIATION | 3.46 | 4.39 | 6.16 | 4.18 | 0.49 | 0.94 | 1.36 | 1.35 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 39.13 | 0. | 4.35 | 13.04 | 69.57 |
| % SCORES AT TEST CEILING | 4.35 | 0. | 0. | 0. | 86.96 | 78.26 | 47.83 | 8.70 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| MEAN | 3.87 | 3.48 | 1.76 | 0.69 | 8.91 | 7.00 | 7.39 | 4.39 |
| STANDARD ERROR OF MEAN | 0.15 | 0.17 | 0.34 | 0.27 | 0.47 | 0.42 | 0.59 | 0.78 |
| STANDARD DEVIATION | 0.71 | 0.83 | 1.61 | 1.29 | 2.27 | 2.00 | 2.82 | 3.75 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 26.09 | 69.57 | 0. | 0. | 0. | 34.78 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 21.00 | 21.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| MEAN | 43.76 | 41.24 | 0.52 | 0.65 | 4.87 | 2.74 | 12.09 | 11.09 |
| STANDARD ERROR OF MEAN | 4.58 | 5.73 | 0.20 | 0.33 | 0.20 | 0.26 | 0.59 | 0.85 |
| STANDARD DEVIATION | 20.99 | 26.26 | 0.95 | 1.58 | 0.97 | 1.25 | 2.84 | 4.06 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 4.76 | 4.76 | 69.57 | 73.91 | 0. | 4.35 | 0. | 4.35 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 4.35 | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: UN MARCO ABIERTO I
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 |
| MEAN | 51.93 | -1.27 | 5.71 | 17.29 | 112.57 | 0.84 | 18.57 | 16.64 |
| STANDARD ERROR OF MEAN | 0.77 | 0.14 | 1.19 | 0.29 | 3.29 | 0.04 | 0.31 | 1.17 |
| STANDARD DEVIATION | 2.87 | 0.51 | 4.46 | 1.07 | 12.33 | 0.16 | 1.16 | 4.40 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | [illegible] | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 |
| MEAN | 2.86 | 0.79 | 21.00 | 11.93 | 0.64 | 0.14 | 3.93 | 2.71 |
| STANDARD ERROR OF MEAN | 1.31 | 0.64 | 1.04 | 1.70 | 0.34 | 0.14 | 0.07 | 0.42 |
| STANDARD DEVIATION | 4.90 | 2.39 | 3.90 | 6.34 | 1.28 | 0.53 | 0.27 | 1.59 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 28.57 | 78.57 | 0. | 0. | 78.57 | 92.86 | 0. | 21.43 |
| % SCORES AT TEST CEILING | 0. | 0. | 7.14 | 0. | 0. | 0. | 92.86 | 42.86 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 |
| MEAN | 0.08 | 0. | 4.34 | 2.88 | 4.64 | 1.36 | 8.14 | 5.79 |
| STANDARD ERROR OF MEAN | 0.06 | 0. | 0.18 | 0.33 | 0.99 | 0.63 | 0.67 | 0.67 |
| STANDARD DEVIATION | 0.22 | 0. | 0.69 | 1.25 | 3.71 | 2.37 | 2.51 | 2.52 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 85.71 | 100.00 | 0. | 7.14 | 14.29 | 57.14 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 |
| MEAN | 0. | 0. | 56.07 | 64.57 | 4.50 | 2.79 | 13.07 | 10.57 |
| STANDARD ERROR OF MEAN | 0. | 0. | 6.55 | 12.51 | 0.23 | 0.37 | 0.54 | 1.12 |
| STANDARD DEVIATION | 0. | 0. | 24.52 | 46.80 | 0.85 | 1.37 | 2.02 | 4.20 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 100.00 | 0. | 0. | 0. | 7.14 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 7.14 | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: UN MARCO ABIERTO I
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: COMPARISON HEAD START .

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASR | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 8.00 | 8.00 | 8.00 | 9.00 | 8.00 | 9.00 | 10.00 |
| MEAN | 50.50 | -1.21 | 9.13 | 15.88 | 160.78 | 0.81 | 19.56 | 18.70 |
| STANDARD ERROR OF MEAN | 1.22 | 0.18 | 1.59 | 0.67 | 1.28 | 0.05 | 0.58 | 1.04 |
| STANDARD DEVIATION | 3.87 | 0.50 | 4.49 | 1.89 | 3.83 | 0.13 | 1.74 | 3.30 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 5.30 | 2.00 | 19.10 | 15.20 | 1.40 | 0.60 | 3.50 | 3.20 |
| STANDARD ERROR OF MEAN | .86 | 1.31 | 1.44 | 1.27 | 0.50 | 0.43 | 0.22 | 0.25 |
| STANDARD DEVIATION | 5.89 | 4.14 | 4.56 | 4.02 | 1.58 | 1.35 | 0.71 | 0.79 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 40.00 | 70.00 | 0. | 0. | 50.00 | 80.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 10.00 | 10.00 | 60.00 | 40.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 0.32 | 0.26 | 4.20 | 3.60 | 6.50 | 2.90 | 9.50 | 6.70 |
| STANDARD ERROR OF MEAN | 0.32 | 0.26 | 0.26 | 0.23 | 1.15 | 1.00 | 0.78 | 0.58 |
| STANDARD DEVIATION | 1.01 | 0.82 | 0.81 | 0.71 | 3.63 | 3.18 | 2.46 | 1.83 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 90.00 | 90.00 | 0. | 0. | 20.00 | 50.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 0. | 0. | 1.10 | 50.60 | 3.90 | 3.00 | 12.50 | 13.10 |
| STANDARD ERROR OF MEAN | 0. | 0. | 5.70 | 8.95 | 0.46 | 0.37 | 0.78 | 0.50 |
| STANDARD DEVIATION | 0. | 0. | 18.03 | 28.29 | 1.45 | 1.15 | 2.46 | 1.60 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 100.00 | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 20.00 | 0. | 0. | 0. |

-A 10-

DESCRIPTIVE STATISTICS FOR MODEL: UN MARCO ABIERTO II
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 16.00 | 16.00 | 14.00 | 15.00 | 16.00 | 16.00 | 11.00 | 16.00 |
| MEAN | 49.81 | 0.78 | 7.36 | 13.47 | 95.25 | 0.65 | 16.91 | 15.81 |
| STANDARD ERROR OF MEAN | 1.24 | 0.11 | 1.20 | 0.48 | 2.60 | 0.08 | 0.55 | 0.62 |
| STANDARD DEVIATION | 4.96 | 0.42 | 4.50 | 1.85 | 10.39 | 0.33 | 1.81 | 2.48 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 16.00 | 16.00 | 15.00 | 15.00 | 15.00 | 15.00 | 16.00 | 16.00 |
| MEAN | 15.50 | 12.06 | 12.47 | 6.73 | 3.80 | 3.93 | 2.56 | 1.88 |
| STANDARD ERROR OF MEAN | 1.27 | 1.11 | 2.06 | 1.76 | 0.14 | 0.07 | 0.46 | 0.45 |
| STANDARD DEVIATION | 5.09 | 4.45 | 7.99 | 6.83 | 0.56 | 0.26 | 1.82 | 1.78 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 6.67 | 20.00 | 0. | 0. | 31.25 | 43.75 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 86.67 | 93.33 | 50.00 | 25.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 |
| MEAN | 4.44 | 3.76 | 2.91 | 1.03 | 8.56 | 5.94 | 6.75 | 4.31 |
| STANDARD ERROR OF MEAN | 0.23 | 0.19 | 0.37 | 0.34 | 0.74 | 0.54 | 1.07 | 0.58 |
| STANDARD DEVIATION | 0.93 | 0.77 | 1.48 | 1.36 | 2.94 | 2.14 | 4.28 | 2.33 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 12.50 | 56.25 | 0. | 0. | 6.25 | 12.50 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 6.25 | 0. | 6.25 | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 |
| MEAN | 46.50 | 43.19 | 3.19 | 1.81 | 3.69 | 2.13 | 12.88 | 10.00 |
| STANDARD ERROR OF MEAN | 4.80 | 6.72 | 0.88 | 0.84 | 0.41 | 0.29 | 0.63 | 0.85 |
| STANDARD DEVIATION | 19.21 | 26.88 | 3.51 | 3.37 | 1.62 | 1.15 | 2.53 | 3.39 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 31.25 | 50.00 | 0. | 6.25 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 12.50 | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: UN MARCO ABIERTO II
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: COMPARISON HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 8.00 | 8.00 | 8.00 | 8.00 | 0. | 8.00 | 8.00 | 8.00 |
| MEAN | 48.50 | 0.96 | 9.00 | 17.25 | | 0.72 | 15.75 | 15.63 |
| STANDARD ERROR OF MEAN | 1.88 | 0.16 | 0.53 | 0.37 | | 0.10 | 0.82 | 0.91 |
| STANDARD DEVIATION | 5.32 | 0.46 | 1.51 | 1.04 | | 0.28 | 2.31 | 2.56 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| MEAN | 13.63 | 11.88 | 3.25 | 1.13 | 4.00 | 3.88 | 1.00 | 0.50 |
| STANDARD ERROR OF MEAN | 1.16 | 1.14 | 1.21 | 0.67 | 0. | 0.13 | 0.53 | 0.33 |
| STANDARD DEVIATION | 3.29 | 3.23 | 3.41 | 1.89 | 0. | 0.35 | 1.51 | 0.93 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 37.50 | 62.50 | 0. | 0. | 62.50 | 75.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 100.00 | 87.50 | 12.50 | 0. |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| MEAN | 4.62 | 3.44 | 0.85 | 0.25 | 9.00 | 7.25 | 4.00 | 4.38 |
| STANDARD ERROR OF MEAN | 0.49 | 0.37 | 0.42 | 0.25 | 0.53 | 0.80 | 1.32 | 0.75 |
| STANDARD DEVIATION | 1.38 | 1.05 | 1.18 | 0.71 | 1.51 | 2.25 | 3.74 | 2.13 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 62.50 | 87.50 | 0. | 0. | 37.50 | 12.50 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| MEAN | 52.00 | 46.75 | 0. | 1.00 | 2.88 | 2.63 | 11.13 | 8.88 |
| STANDARD ERROR OF MEAN | 10.90 | 6.05 | 0. | 0.50 | 0.40 | 0.65 | 1.34 | 1.13 |
| STANDARD DEVIATION | 30.83 | 17.12 | 0. | 1.41 | 1.13 | 1.85 | 3.80 | 3.18 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 100.00 | 50.00 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: UN MARCO ABIERTO II
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: STAY-AT-HOME

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 8.00 | 8.00 | 8.00 | 0. | 8.00 | 9.00 | 10.00 |
| MEAN | 48.00 | 0.87 | 10.38 | 13.00 | | 0.62 | 16.00 | 17.10 |
| STANDARD ERROR OF MEAN | 1.12 | 0.17 | 0.89 | 0.73 | | 0.08 | 0.47 | 0.87 |
| STANDARD DEVIATION | 3.53 | 0.49 | 2.50 | 2.07 | | 0.24 | 1.41 | 2.77 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 15.40 | 10.50 | 12.40 | 7.00 | 3.80 | 3.20 | 3.10 | 2.10 |
| STANDARD ERROR OF MEAN | 1.19 | 1.41 | 2.12 | 2.29 | 0.20 | 0.29 | 0.28 | 0.53 |
| STANDARD DEVIATION | 3.78 | 4.45 | 6.72 | 7.23 | 0.63 | 0.92 | 0.88 | 1.66 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 20.00 | 0. | 0. | 0. | 30.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 90.00 | 50.00 | 40.00 | 30.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 4.03 | 3.34 | 2.02 | 1.37 | 7.30 | 5.90 | 7.80 | 5.20 |
| STANDARD ERROR OF MEAN | 0.29 | 0.38 | 0.61 | 0.58 | 0.72 | 0.90 | 0.96 | 1.00 |
| STANDARD DEVIATION | 0.91 | 1.20 | 1.94 | 1.84 | 2.26 | 2.85 | 3.05 | 3.16 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 30.00 | 60.00 | 0. | 0. | 0. | 10.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 8.00 | 8.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 40.20 | 38.60 | 2.00 | 5.13 | 3.80 | 2.80 | 13.20 | 11.60 |
| STANDARD ERROR OF MEAN | 7.21 | 6.56 | 1.18 | 2.40 | 0.44 | 0.59 | 0.95 | 1.05 |
| STANDARD DEVIATION | 22.81 | 20.75 | 3.34 | 6.79 | 1.40 | 1.87 | 3.01 | 3.31 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 37.50 | 37.50 | 0. | 10.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0 | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: UN MARCO ABIERTO II
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 19.00 | 16.00 | 16.00 | 16.00 | 19.00 | 16.00 | 17.00 | 19.00 |
| MEAN | 50.68 | -0.94 | 8.81 | 13.31 | 97.53 | 0.81 | 16.24 | 15.95 |
| STANDARD ERROR OF MEAN | 1.04 | 0.16 | 1.13 | 0.45 | 2.47 | 0.05 | 0.88 | 0.48 |
| STANDARD DEVIATION | 4.55 | 0.64 | 4.53 | 1.82 | 10.75 | 0.21 | 3.63 | 2.09 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 |
| MEAN | 4.68 | 3.58 | 18.68 | 15.11 | 1.11 | 0.84 | 3.84 | 3.47 |
| STANDARD ERROR OF MEAN | 1.47 | 1.39 | 0.88 | 1.07 | 0.37 | 0.33 | 0.12 | 0.18 |
| STANDARD DEVIATION | 6.39 | 6.08 | 3.83 | 4.68 | 1.59 | 1.42 | 0.50 | 0.77 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 31.58 | 57.89 | 0. | 0. | 63.16 | 68.42 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 10.53 | 10.53 | 89.47 | 63.16 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 |
| MEAN | 0.60 | 0.38 | 4.16 | 3.18 | 7.26 | 4.42 | 9.21 | 6.63 |
| STANDARD ERROR OF MEAN | 0.33 | 0.26 | 0.17 | 0.21 | 0.82 | 0.77 | 0.65 | 0.50 |
| STANDARD DEVIATION | 1.45 | 1.14 | 0.75 | 0.90 | 3.56 | 3.34 | 2.82 | 2.17 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 84.21 | 89.47 | 0. | 0. | 10.53 | 21.05 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 18.00 | 18.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 |
| MEAN | 0.06 | 0. | 50.47 | 40.47 | 3.84 | 3.00 | 13.32 | 10.11 |
| STANDARD ERROR OF MEAN | 0.06 | 0. | 4.86 | 4.57 | 0.26 | 0.30 | 0.63 | 0.54 |
| STANDARD DEVIATION | 0.24 | 0. | 21.17 | 19.92 | 1.12 | 1.29 | 2.73 | 2.35 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 94.44 | 100.00 | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: UN MARCO ABIERTO II
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: COMPARISON HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 0. | 2.00 | 1.00 | 2.00 |
| MEAN | 51.00 | -0.39 | 11.00 | 17.00 | | 0.91 | 15.00 | 11.50 |
| STANDARD ERROR OF MEAN | 6.00 | 0.01 | 1.00 | 1.00 | | 0.09 | | 1.50 |
| STANDARD DEVIATION | 8.49 | 0.02 | 1.41 | 1.41 | | 0.13 | | 2.12 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| MEAN | 10.50 | 3.50 | 12.00 | 6.00 | 3.00 | 2.00 | 3.50 | 1.50 |
| STANDARD ERROR OF MEAN | 0.50 | 2.50 | 1.00 | 6.00 | 1.00 | 2.00 | 0.50 | 1.50 |
| STANDARD DEVIATION | 0.71 | 3.54 | 1.41 | 8.49 | 1.41 | 2.83 | 0.71 | 2.12 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 50.00 | 0. | 50.00 | 0. | 50.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 50.00 | 50.00 | 50.00 | 0. |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| MEAN | 1.15 | 0.70 | 3.85 | 2.45 | 4.50 | 5.00 | 7.00 | 7.00 |
| STANDARD ERROR OF MEAN | 1.05 | 0.70 | 0.95 | 0.55 | 1.50 | 2.00 | 1.00 | 1.00 |
| STANDARD DEVIATION | 1.48 | 0.99 | 1.34 | 0.78 | 2.12 | 2.83 | 1.41 | 1.41 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 50.00 | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 0. | 0. | 50.00 | 42.00 | 1.00 | 2.00 | 9.00 | 8.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | | |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 100.00 | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: UN-MARCO ABIERTO II
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: STAY-AT-HOME

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 0. | 1.00 | 1.00 | 1.00 |
| MEAN | 50.00 | 0.13 | 16.00 | 13.00 | | 0.45 | 18.00 | 17.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | | |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 16.00 | 12.00 | 23.00 | 14.00 | 3.00 | 2.00 | 4.00 | 4.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | | |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 100.00 | 100.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 3.90 | 1.80 | 3.30 | 2.40 | 6.00 | 6.00 | 8.00 | 5.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | | |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 0. | 0. | 39.00 | 27.00 | 2.00 | 4.00 | 12.00 | 11.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | | |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 100.00 | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: AMANECER I
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 51.90 | 0.43 | 5.20 | 15.40 | 135.10 | 0.59 | 18.50 | 15.40 |
| STANDARD ERROR OF MEAN | 1.18 | 0.12 | 1.34 | 0.95 | 3.45 | 0.07 | 0.92 | 1.67 |
| STANDARD DEVIATION | 3.73 | 0.39 | 4.24 | 2.99 | 10.91 | 0.24 | 2.92 | 5.27 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 10.10 | 11.30 | 9.60 | 8.10 | 3.70 | 3.30 | 3.40 | 3.10 |
| STANDARD ERROR OF MEAN | 1.30 | 1.64 | 1.42 | 1.41 | 0.15 | 0.26 | 0.22 | 0.46 |
| STANDARD DEVIATION | 4.12 | 5.19 | 4.48 | 4.46 | 0.48 | 0.82 | 0.70 | 1.45 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 10.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 70.00 | 50.00 | 50.00 | 60.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 9.00 | 9.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 3.27 | 3.50 | 2.44 | 0.81 | 7.70 | 7.90 | 7.10 | 8.00 |
| STANDARD ERROR OF MEAN | 0.29 | 0.51 | 0.38 | 0.40 | 0.90 | 0.90 | 0.95 | 0.93 |
| STANDARD DEVIATION | 0.87 | 1.52 | 1.20 | 1.27 | 2.85 | 2.85 | 3.00 | 2.94 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 11.11 | 10.00 | 60.00 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| MEAN | 32.67 | 28.83 | 2.67 | 0.83 | 2.67 | 2.33 | 9.00 | 8.00 |
| STANDARD ERROR OF MEAN | 9.44 | 6.05 | 1.58 | 0.40 | 0.67 | 0.49 | 2.27 | 2.08 |
| STANDARD DEVIATION | 23.13 | 14.82 | 3.88 | 0.98 | 1.63 | 1.21 | 5.55 | 5.10 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 16.67 | 33.33 | 50.00 | 0. | 16.67 | 0. | 16.67 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: AMANECER I
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: STAY-AT-HOME

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 5.00 | 5.00 | 5.00 | 5.00 | 0. | 5.00 | 5.00 | 5.00 |
| MEAN | 50.00 | 0.27 | 8.60 | 16.00 | | 0.65 | 14.00 | 17.80 |
| STANDARD ERROR OF MEAN | 1.64 | 0.12 | 1.57 | 1.10 | | 0.12 | 1.79 | 1.02 |
| STANDARD DEVIATION | 3.67 | 0.26 | 3.51 | 2.45 | | 0.26 | 4.00 | 2.28 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 5.00 | 5.00 | 5.00 | 5.00 | 4.00 | 4.00 | 5.00 | 5.00 |
| MEAN | 7.80 | 11.00 | 8.00 | 8.20 | 3.50 | 2.75 | 3.00 | 1.60 |
| STANDARD ERROR OF MEAN | 1.32 | 1.95 | 1.52 | 1.53 | 0.29 | 0.48 | 0.45 | 0.81 |
| STANDARD DEVIATION | 2.95 | 4.36 | 3.39 | 3.42 | 0.58 | 0.96 | 1.00 | 1.82 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 40.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 50.00 | 25.00 | 40.00 | 20.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| MEAN | 3.28 | 2.72 | 1.36 | 0.06 | 5.60 | 8.80 | 4.60 | 4.00 |
| STANDARD ERROR OF MEAN | 0.45 | 0.87 | 0.59 | 0.06 | 0.40 | 1.32 | 0.93 | 1.45 |
| STANDARD DEVIATION | 1.00 | 1.95 | 1.32 | 0.13 | 0.89 | 2.95 | 2.07 | 3.24 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 20.00 | 0. | 80.00 | 0. | 0. | 0. | 20.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| MEAN | 38.75 | 25.50 | 2.75 | 2.00 | 2.25 | 1.75 | 9.75 | 9.00 |
| STANDARD ERROR OF MEAN | 16.38 | 5.24 | 1.25 | 0.91 | 0.63 | 0.48 | 2.59 | 1.87 |
| STANDARD DEVIATION | 32.76 | 10.47 | 2.50 | 1.83 | 1.26 | 0.96 | 5.19 | 3.74 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 25.00 | 0. | 25.00 | 25.00 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: AMANECER I
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 20.00 | 19.00 | 19.00 | 19.00 | 20.00 | 19.00 | 19.00 | 20.00 |
| MEAN | 53.15 | -0.86 | 4.89 | 15.74 | 140.70 | 0.81 | 19.58 | 18.45 |
| STANDARD ERROR OF MEAN | 0.78 | 0.11 | 0.70 | 0.57 | 2.74 | 0.05 | 0.68 | 0.85 |
| STANDARD DEVIATION | 3.48 | 0.48 | 3.03 | 2.49 | 12.24 | 0.24 | 2.97 | 3.80 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 20.00 | 20.00 | 20.00 | 20.00 | 18.00 | 18.00 | 20.00 | 20.00 |
| MEAN | 6.10 | 4.55 | 17.15 | 13.00 | 2.83 | 2.11 | 3.70 | 3.20 |
| STANDARD ERROR OF MEAN | 0.91 | 0.59 | 1.33 | 1.14 | 0.35 | 0.35 | 0.16 | 0.26 |
| STANDARD DEVIATION | 4.09 | 2.63 | 5.93 | 5.10 | 1.47 | 1.49 | 0.73 | 1.15 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 10.00 | 10.00 | 0. | 0. | 16.67 | 22.22 | 0. | 5.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 44.44 | 22.22 | 85.00 | 55.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| MEAN | 0.64 | 0.22 | 4.05 | 3.26 | 5.25 | 7.45 | 7.20 | 8.20 |
| STANDARD ERROR OF MEAN | 0.33 | 0.14 | 0.20 | 0.37 | 0.73 | 0.51 | 0.65 | 0.62 |
| STANDARD DEVIATION | 1.49 | 0.61 | 0.89 | 1.67 | 3.24 | 2.26 | 2.89 | 2.76 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 80.00 | 85.00 | 0. | 15.00 | 10.00 | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 5.00 |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 18.00 | 19.00 | 19.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| MEAN | 0.11 | 0.26 | 39.42 | 56.90 | 3.55 | 2.75 | 11.25 | 11.50 |
| STANDARD ERROR OF MEAN | 0.08 | 0.18 | 5.68 | 7.95 | 0.31 | 0.37 | 0.72 | 0.86 |
| STANDARD DEVIATION | 0.32 | 0.81 | 24.78 | 35.56 | 1.39 | 1.65 | 3.21 | 3.83 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 88.89 | 89.47 | 0. | 0. | 0. | 10.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 10.00 | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: AMANECER I >
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: STAY-AT-HOME

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 23.00 | 23.00 | 23.00 | 23.00 | 0. | 23.00 | 23.00 | 22.00 |
| MEAN | 51.61 | -0.46 | 6.39 | 15.70 | | 0.82 | 18.70 | 17.82 |
| STANDARD ERROR OF MEAN | 0.80 | 0.13 | 0.85 | 0.47 | | 0.04 | 0.63 | 1.11 |
| STANDARD DEVIATION | 3.85 | 0.61 | 4.08 | 2.24 | | 0.18 | 3.04 | 5.20 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 4.35 | 9.09 |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| MEAN | 8.43 | 6.74 | 14.74 | 12.17 | 3.09 | 2.26 | 3.48 | 3.30 |
| STANDARD ERROR OF MEAN | 1.02 | 1.09 | 1.11 | 1.10 | 0.32 | 0.35 | 0.16 | 0.23 |
| STANDARD DEVIATION | 4.88 | 5.22 | 5.30 | 5.25 | 1.53 | 1.68 | 0.79 | 1.11 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 8.70 | 13.04 | 0. | 4.35 | 17.39 | 30.43 | 0. | 4.35 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 65.22 | 34.78 | 60.87 | 60.87 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 21.00 | 21.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| MEAN | 1.12 | 0.88 | 3.70 | 3.25 | 6.70 | 6.04 | 6.78 | 6.39 |
| STANDARD ERROR OF MEAN | 0.33 | 0.32 | 0.21 | 0.35 | 0.55 | 0.55 | 0.69 | 0.51 |
| STANDARD DEVIATION | 1.51 | 1.47 | 1.03 | 1.67 | 2.62 | 2.62 | 3.29 | 2.43 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 57.14 | 66.67 | 4.35 | 8.70 | 4.35 | 8.70 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _OESC | OESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 21.00 | 21.00 | 21.00 | 22.00 | 22.00 | 22.00 | 21.00 | 21.00 |
| MEAN | 0.29 | 0.57 | 45.90 | 43.45 | 2.91 | 2.64 | 11.52 | 10.29 |
| STANDARD ERROR OF MEAN | 0.20 | 0.30 | 5.90 | 5.87 | 0.29 | 0.33 | 0.72 | 0.94 |
| STANDARD DEVIATION | 0.90 | 1.36 | 27.03 | 27.52 | 1.34 | 1.53 | 3.30 | 4.30 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 90.48 | 76.19 | 4.76 | 4.55 | 4.55 | 9.09 | 0. | 4.76 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

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DESCRIPTIVE STATISTICS FOR MODEL: AMANECER II
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 40.00 | 40.00 | [illegible]00 | 40.00 | 40.00 | 40.00 | 39.00 | 40.00 |
| MEAN | 52.38 | 0.19 | [illegible]45 | 16.95 | 145.60 | 0.86 | 19.03 | 18.30 |
| STANDARD ERROR OF MEAN | 0.71 | 0.06 | 0.57 | 0.25 | 2.27 | 0.02 | 0.28 | 0.41 |
| STANDARD DEVIATION | 4.46 | 0.41 | 3.59 | 1.57 | 14.33 | 0.15 | 1.72 | 2.61 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 |
| MEAN | 20.27 | 16.95 | 12.45 | 6.00 | 3.88 | 3.82 | 2.32 | 1.40 |
| STANDARD ERROR OF MEAN | 0.59 | 0.70 | 1.15 | 1.02 | 0.08 | 0.07 | 0.24 | 0.28 |
| STANDARD DEVIATION | 3.73 | 4.40 | 7.24 | 6.48 | 0.52 | 0.45 | 1.53 | 1.79 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 5.00 | 20.00 | 0. | 0. | 25.00 | 60.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 92.50 | 85.00 | 25.00 | 25.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 |
| MEAN | 4.37 | 3.69 | 1.56 | 0.91 | 9.47 | 9.65 | 8.50 | 8.55 |
| STANDARD ERROR OF MEAN | 0.13 | 0.18 | 0.27 | 0.18 | 0.37 | 0.37 | 0.37 | 0.34 |
| STANDARD DEVIATION | 0.80 | 1.14 | 1.68 | 1.15 | 2.32 | 2.33 | 2.34 | 2.17 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 35.00 | 47.50 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 2.50 | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 39.00 | 39.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 |
| MEAN | 48.36 | 46.69 | 1.02 | 2.63 | 4.57 | 3.32 | 13.90 | 11.90 |
| STANDARD ERROR OF MEAN | 3.18 | 4.04 | 0.27 | 0.83 | 0.18 | 0.22 | 0.40 | 0.55 |
| STANDARD DEVIATION | 19.88 | 25.23 | 1.70 | 5.27 | 1.13 | 1.38 | 2.55 | 3.46 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 2.56 | 60.00 | 47.50 | 0. | 5.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 5.00 | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: AMANECER II
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: COMPARISON HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 27.00 | 26.00 | 26.00 | 25.00 | 27.00 | 26.00 | 26.00 | 27.00 |
| MEAN | 49.30 | 0.50 | 7.38 | 16.60 | 156.44 | 0.75 | 18.81 | 17.52 |
| STANDARD ERROR OF MEAN | 0.73 | 0.09 | 0.72 | 0.42 | 3.17 | 0.04 | 0.18 | 0.49 |
| STANDARD DEVIATION | 3.80 | 0.46 | 3.67 | 2.12 | 16.49 | 0.21 | 0.94 | 2.53 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 26.00 | 26.00 | 27.00 | 27.00 | 26.00 | 26.00 | 27.00 | 27.00 |
| MEAN | 18.58 | 15.46 | 6.52 | 2.52 | 3.96 | 3.96 | 1.26 | 0.37 |
| STANDARD ERROR OF MEAN | 0.56 | 0.76 | 1.09 | 0.87 | 0.04 | 0.04 | 0.30 | 0.18 |
| STANDARD DEVIATION | 2.84 | 3.88 | 5.69 | 4.52 | 0.20 | 0.20 | 1.53 | 0.93 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 3.70 | 51.85 | 0. | 0. | 55.56 | 85.19 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 96.15 | 96.15 | 11.11 | 0. |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 26.00 | 26.00 | 26.00 | 26.00 | 26.00 | 26.00 | 26.00 | 26.00 |
| MEAN | 4.10 | 3.73 | 0.30 | 0.20 | 9.04 | 9.81 | 8.04 | 9.08 |
| STANDARD ERROR OF MEAN | 0.13 | 0.14 | 0.17 | 0.12 | 0.36 | 0.47 | 0.37 | 0.47 |
| STANDARD DEVIATION | 0.68 | 0.70 | 0.84 | 0.63 | 1.82 | 2.40 | 1.91 | 2.40 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 80.77 | 88.46 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 3.85 | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 26.00 | 26.00 | 27.00 | 27.00 | 27.00 | 27.00 | 26.00 | 26.00 |
| MEAN | 40.19 | 49.54 | 0.15 | 0.70 | 4.81 | 2.48 | 12.77 | 11.54 |
| STANDARD ERROR OF MEAN | 3.38 | 4.58 | 0.07 | 0.18 | 0.26 | 0.30 | 0.62 | 0.70 |
| STANDARD DEVIATION | 17.24 | 23.35 | 0.36 | 0.95 | 1.36 | 1.55 | 3.18 | 3.57 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 3.85 | 0. | 85.19 | 51.85 | 3.70 | 11.11 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 3.70 | 3.70 | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: AMANECER II
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: STAY-AT-HOME

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 8.00 | 9.00 | 9.00 | 9.00 | 1.00 | 9.00 | 8.00 | 8.00 |
| MEAN | 54.75 | 0.41 | 8.44 | 17.33 | 176.00 | 0.81 | 18.75 | 19.13 |
| STANDARD ERROR OF MEAN | 1.88 | 0.17 | 1.83 | 0.33 | | 0.08 | 0.96 | 1.04 |
| STANDARD DEVIATION | 5.31 | 0.51 | 5.50 | 1.00 | | 0.24 | 2.71 | 2.95 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 9.00 | 9.00 | 9.00 | 9.00 | 9.00 | 9.00 | 8.00 | 8.00 |
| MEAN | 16.33 | 16.78 | 5.56 | 5.11 | 3.89 | 3.89 | 1.00 | 1.00 |
| STANDARD ERROR OF MEAN | 1.43 | 1.13 | 2.22 | 2.53 | 0.11 | 0.11 | 0.53 | 0.65 |
| STANDARD DEVIATION | 4.30 | 3.38 | 6.65 | 7.59 | 0.33 | 0.33 | 1.51 | 1.85 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 22.22 | 44.44 | 0. | 0. | 62.50 | 75.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 88.89 | 88.89 | 12.50 | 25.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 9.00 | 9.00 | 9.00 | 9.00 | 9.00 | 9.00 | 9.00 | 9.00 |
| MEAN | 3.73 | 3.53 | 0.99 | 0.64 | 7.89 | 10.56 | 7.89 | 9.11 |
| STANDARD ERROR OF MEAN | 0.31 | 0.20 | 0.53 | 0.44 | 0.82 | 0.65 | 1.16 | 0.73 |
| STANDARD DEVIATION | 0.94 | 0.61 | 1.58 | 1.33 | 2.47 | 1.94 | 3.48 | 2.20 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 55.56 | 77.78 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 9.00 | 9.00 | 9.00 | 9.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| MEAN | 36.00 | 47.11 | 0.11 | 3.89 | 4.00 | 3.50 | 12.88 | 11.00 |
| STANDARD ERROR OF MEAN | 5.12 | 8.90 | 0.11 | 3.16 | 0.60 | 0.42 | 1.25 | 1.27 |
| STANDARD DEVIATION | 15.37 | 26.70 | 0.33 | 9.47 | 1.69 | 1.20 | 3.52 | 3.59 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 11.11 | 11.11 | 88.89 | 44.44 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 12.50 | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: AMANECER II
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 2.00 |
| MEAN | 55.50 | -0.29 | 11.00 | 16.00 | 139.00 | 0.95 | 21.00 | 18.00 |
| STANDARD ERROR OF MEAN | 1.50 | 0.39 | 4.00 | 0. | 9.00 | 0.05 | | 1.00 |
| STANDARD DEVIATION | 2.12 | 0.55 | 5.66 | 0. | 12.73 | 0.06 | | 1.41 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| MEAN | 13.00 | 13.50 | 21.00 | 18.50 | 4.00 | 3.50 | 3.50 | 3.00 |
| STANDARD ERROR OF MEAN | 4.00 | 5.50 | 1.00 | 2.50 | 0. | 0.50 | 0.50 | 1.00 |
| STANDARD DEVIATION | 5.66 | 7.78 | 1.41 | 3.54 | 0. | 0.71 | 0.71 | 1.41 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 100.00 | 50.00 | 50.00 | 50.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| MEAN | 1.45 | 2.65 | 3.45 | 3.60 | 9.50 | 8.50 | 8.50 | 8.00 |
| STANDARD ERROR OF MEAN | 1.45 | 1.15 | 0.35 | 0.10 | 1.50 | 1.50 | 1.50 | 2.00 |
| STANDARD DEVIATION | 2.05 | 1.63 | 0.64 | 0.14 | 2.12 | 2.12 | 2.12 | 2.83 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 50.00 | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| MEAN | 0. | 4.50 | 15.50 | 16.00 | 3.00 | 1.50 | 6.50 | 5.00 |
| STANDARD ERROR OF MEAN | 0. | 4.50 | 5.50 | 7.00 | .00 | 1.50 | 0.50 | 2.00 |
| STANDARD DEVIATION | 0. | 6.36 | 7.78 | 9.90 | [illegible] | 2.12 | 0.71 | 2.83 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 50.00 | [illegible] | 0. | 0. | 50.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | | 0. | | 0. | 0. | 0. |

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DESCRIPTIVE STATISTICS FOR MODEL: AMANECER II
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: COMPARISON HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 58.00 | -1.68 | 7.00 | 18.00 | 168.00 | 1.00 | 20.00 | 17.00 |
| STANDARD ERROR OF MEAN | | | | | | | 0. | 0. |
| STANDARD DEVIATION | | | | | | | 0. | 0. |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | | |
| % SCORES AT TEST CEILING | | | | | | | | |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 2.00 | 0. | 19.00 | 12.00 | 0. | 0. | 4.00 | 4.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | | |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 100.00 | 0. | 0. | 100.00 | 100.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 100.00 | 100.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 0. | 0. | 2.80 | 2.50 | 2.00 | 8.00 | 4.00 | 11.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | | |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 100.00 | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 0. | 0. | 17.00 | 9.00 | 5.00 | 4.00 | 9.00 | 2.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | | |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 100.00 | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: ALERTA I
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 |
| MEAN | 50.00 | 0.46 | 5.57 | 15.86 | 141.43 | 0.88 | 20.14 | 19.14 |
| STANDARD ERROR OF MEAN | 1.48 | 0.14 | 0.61 | 0.26 | 4.10 | 0.05 | 0.59 | 1.28 |
| STANDARD DEVIATION | 3.92 | 0.37 | 1.62 | 0.69 | 10.86 | 0.14 | 1.57 | 3.39 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 |
| MEAN | 17.57 | 13.86 | 16.57 | 7.57 | 4.00 | 3.29 | 3.86 | 1.29 |
| STANDARD ERROR OF MEAN | 1.45 | 2.36 | 1.36 | 2.95 | 0. | 0.47 | 0.14 | 0.64 |
| STANDARD DEVIATION | 3.82 | 6.26 | 3.60 | 7.81 | 0. | 1.25 | 0.38 | 1.70 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 14.29 | 0. | 0. | 0. | 57.14 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 100.00 | 71.43 | 85.71 | 14.29 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 6.00 | 6.00 |
| MEAN | 4.29 | 3.77 | 3.46 | 1.24 | 9.29 | 7.86 | 8.83 | 6.00 |
| STANDARD ERROR OF MEAN | 0.24 | 0.37 | 0.62 | 0.59 | 1.02 | 1.44 | 1.28 | 1.81 |
| STANDARD DEVIATION | 0.64 | 0.97 | 1.65 | 1.55 | 2.69 | 3.80 | 3.13 | 4.43 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 14.29 | 57.14 | 0. | 0. | 0. | 16.67 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 6.00 | 6.00 | 7.00 | 7.00 | 6.00 | 6.00 | 5.00 | 5.00 |
| MEAN | 33.67 | 32.67 | 1.43 | 3.57 | 3.33 | 2.83 | 11.20 | 9.80 |
| STANDARD ERROR OF MEAN | 18.61 | 9.52 | 0.72 | 2.92 | 1.09 | 0.75 | 3.48 | 2.02 |
| STANDARD DEVIATION | 45.58 | 23.31 | 1.90 | 7.72 | 2.66 | 1.83 | 7.79 | 5.85 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 50.00 | 16.67 | 42.86 | 42.86 | 33.33 | 0. | 20.00 | 20.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

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DESCRIPTIVE STATISTICS FOR MODEL: ALERTA I
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: STAY-AT-HOME

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 4.00 | 4.00 | 4.00 | 4.00 | 0. | 4.00 | 4.00 | 4.00 |
| MEAN | 51.00 | 0.53 | 11.00 | 15.00 | | 0.70 | 20.25 | 18.50 |
| STANDARD ERROR OF MEAN | 1.68 | 0.21 | 3.14 | 1.29 | | 0.21 | 0.63 | 1.71 |
| STANDARD DEVIATION | 3.37 | 0.43 | 6.27 | 2.58 | | 0.42 | 1.26 | 3.42 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| MEAN | 13.25 | 15.00 | 11.50 | 7.25 | 4.00 | 4.00 | 3.00 | 2.50 |
| STANDARD ERROR OF MEAN | 1.49 | 4.02 | 4.01 | 3.09 | 0. | 0. | 1.00 | 0.96 |
| STANDARD DEVIATION | 2.99 | 8.04 | 8.02 | 6.18 | 0. | 0. | 2.00 | 1.91 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 25.00 | 25.00 | 0. | 0. | 25.00 | 25.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 100.00 | 100.00 | 75.00 | 50.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 3.00 | 3.00 | 4.00 | 4.00 | 4.00 | 4.00 | 3.00 | 3.00 |
| MEAN | 4.67 | 4.63 | 2.70 | 2.02 | 9.75 | 7.50 | 8.67 | 9.00 |
| STANDARD ERROR OF MEAN | 0.67 | 0.61 | 0.97 | 0.88 | 0.85 | 2.66 | 0.88 | 2.52 |
| STANDARD DEVIATION | 1.17 | 1.06 | 1.94 | 1.76 | 1.71 | 5.32 | 1.53 | 4.36 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 25.00 | 25.00 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 3.00 | 3.00 |
| MEAN | 32.50 | 34.00 | 0. | 1.00 | 1.50 | 1.25 | 12.00 | 8.33 |
| STANDARD ERROR OF MEAN | 18.87 | 8.34 | 0. | 0.71 | 0.65 | 0.48 | 3.61 | 2.85 |
| STANDARD DEVIATION | 37.75 | 16.67 | 0. | 1.41 | 1.29 | 0.96 | 6.24 | 4.93 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 50.00 | 0. | 100.00 | 50.00 | 25.00 | 25.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: ALERTA I
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 16.00 | 17.00 | 15.00 | 17.00 | 16.00 | 17.00 | 17.00 | 16.00 |
| MEAN | 50.69 | -1.16 | 5.93 | 15.88 | 137.06 | 0.89 | 18.88 | 18.13 |
| STANDARD ERROR OF MEAN | 0.72 | 0.16 | 0.78 | 0.37 | 3.46 | 0.03 | 0.57 | 0.58 |
| STANDARD DEVIATION | 2.89 | 0.65 | 3.03 | 1.54 | 13.86 | 0.11 | 2.37 | 2.33 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 17.00 | 17.00 | 17.00 | 17.00 | 17.00 | 17.00 | 17.00 | 17.00 |
| MEAN | 6.29 | 3.94 | 18.47 | 13.65 | 1.53 | 1.18 | 4.00 | 3.35 |
| STANDARD ERROR OF MEAN | 1.86 | 1.60 | 0.78 | 1.30 | 0.46 | 0.41 | 0. | 0.23 |
| STANDARD DEVIATION | 7.69 | 6.59 | 3.20 | 5.37 | 1.91 | 1.70 | 0. | 0.93 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 35.29 | 64.71 | 0. | 0. | 58.82 | 64.71 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 29.41 | 17.65 | 100.00 | 58.82 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 16.00 | 16.00 | 15.00 | 15.00 | 16.00 | 16.00 | 17.00 | 17.00 |
| MEAN | 0.90 | 0.51 | 4.10 | 2.79 | 5.25 | 4.31 | 8.06 | 7.00 |
| STANDARD ERROR OF MEAN | 0.38 | 0.25 | 0.26 | 0.30 | 0.95 | 1.05 | 0.69 | 0.79 |
| STANDARD DEVIATION | 1.52 | 1.01 | 1.01 | 1.16 | 3.79 | 4.21 | 2.84 | 3.26 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 68.75 | 75.00 | 0. | 6.67 | 18.75 | 37.50 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 15.00 | 15.00 | 15.00 | 15.00 | 14.00 | 14.00 | 14.00 | 14.00 |
| MEAN | 1.47 | 0. | 43.67 | 33.13 | 3.50 | 2.64 | 10.64 | 7.79 |
| STANDARD ERROR OF MEAN | 1.47 | 0. | 9.44 | 8.39 | 0.50 | 0.37 | 1.52 | 1.28 |
| STANDARD DEVIATION | 5.68 | 0. | 36.55 | 32.50 | 1.87 | 1.39 | 5.68 | 4.77 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 93.33 | 100.00 | 26.67 | 13.33 | 14.29 | 0. | 14.29 | 14.29 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 14.29 | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: ALERTA I
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: STAY-AT-HOME

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 4.00 | 4.00 | 4.00 | 4.00 | 0. | 4.00 | 4.00 | 4.00 |
| MEAN | 48.25 | -1.18 | 9.75 | 17.50 | | 0.93 | 20.00 | 19.75 |
| STANDARD ERROR OF MEAN | 2.50 | 0.44 | 1.84 | 0.50 | | 0.07 | 1.00 | 0.85 |
| STANDARD DEVIATION | 4.99 | 0.87 | 3.69 | 1.00 | | 0.14 | 2.00 | 1.71 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| MEAN | 7.00 | 5.50 | 18.00 | 18.75 | 2.00 | 1.75 | 3.75 | 4.00 |
| STANDARD ERROR OF MEAN | 4.22 | 3.66 | 2.27 | 2.29 | 0.91 | 1.03 | 0.25 | 0. |
| STANDARD DEVIATION | 8.45 | 7.33 | 4.55 | 4.57 | 1.83 | 2.06 | 0.50 | 0. |
| % SCORES AT TEST FLOOR (SCORE = 0) | 50.00 | 25.00 | 0. | 0. | 25.00 | 50.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 25.00 | 25.00 | 75.00 | 100.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| MEAN | 0.75 | 0.70 | 3.47 | 2.82 | 6.75 | 6.25 | 8.50 | 9.50 |
| STANDARD ERROR OF MEAN | 0.75 | 0.70 | 0.11 | 0.27 | 2.25 | 2.39 | 2.22 | 1.85 |
| STANDARD DEVIATION | 1.50 | 1.40 | 0.22 | 0.55 | 4.50 | 4.79 | 4.43 | 3.70 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 75.00 | 75.00 | 0. | 0. | 0. | 25.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 25.00 | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| MEAN | 0. | 0. | 23.50 | 19.25 | 3.25 | 2.50 | 10.00 | 8.25 |
| STANDARD ERROR OF MEAN | 0. | 0. | 3.57 | 6.75 | 0.85 | 0.65 | 2.27 | 2.84 |
| STANDARD DEVIATION | 0. | 0. | 7.14 | 13.50 | 1.71 | 1.29 | 4.55 | 5.68 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 100.00 | 0. | 25.00 | 0. | 0. | 0. | 25.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: ALERTA II
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: STAY-AT-HOME

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 0. | 2.00 | 2.00 | 2.00 |
| MEAN | 50.50 | 0.71 | 9.00 | 16.00 | | 0.68 | 15.50 | 17.50 |
| STANDARD ERROR OF MEAN | 0.50 | 0.09 | 3.00 | 0. | | 0.05 | 1.50 | 3.50 |
| STANDARD DEVIATION | 0.71 | 0.13 | 4.24 | 0. | | 0.06 | 2.12 | 4.95 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| MEAN | 12.50 | 11.00 | 0.50 | 0. | 4.00 | 4.00 | 0. | 0. |
| STANDARD ERROR OF MEAN | 1.50 | 2.00 | 0.50 | 0. | 0. | 0. | 0. | 0. |
| STANDARD DEVIATION | 2.12 | 2.83 | 0.71 | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 50.00 | 100.00 | 0. | 0. | 100.00 | 100.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 100.00 | 100.00 | 0. | 0. |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| MEAN | 4.00 | 2.30 | 0. | 0. | 4.00 | 10.00 | 0. | 2.50 |
| STANDARD ERROR OF MEAN | 0.30 | 0.40 | 0. | 0. | 2.00 | 1.00 | 0. | 2.50 |
| STANDARD DEVIATION | 0.42 | 0.57 | 0. | 0. | 2.83 | 1.41 | 0. | 3.54 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 100.00 | 100.00 | 0. | 0. | 100.00 | 50.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| MEAN | 53.50 | 31.00 | 0. | 0. | 3.50 | 2.00 | 11.50 | 6.00 |
| STANDARD ERROR OF MEAN | 29.50 | 15.00 | 0. | 0. | 1.50 | 2.00 | 3.50 | 1.00 |
| STANDARD DEVIATION | 41.72 | 21.21 | 0. | 0. | 2.12 | 2.83 | 4.95 | 1.41 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 100.00 | 100.00 | 0. | 50.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

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DESCRIPTIVE STATISTICS FOR MODEL: ALERTA II
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTORT | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| MEAN | 53.75 | -0.01 | 4.25 | 17.00 | 138.75 | 0.91 | 21.25 | 20.75 |
| STANDARD ERROR OF MEAN | 2.02 | 0.15 | 0.95 | 0.58 | 3.90 | 0.06 | 0.85 | 0.95 |
| STANDARD DEVIATION | 4.03 | 0.30 | 1.89 | 1.15 | 7.80 | 0.13 | 1.71 | 1.89 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| MEAN | 10.25 | 8.75 | 12.00 | 8.50 | 3.75 | 3.25 | 4.00 | 3.75 |
| STANDARD ERROR OF MEAN | 1.49 | 0.75 | 2.12 | 2.18 | 0.25 | 0.48 | 0. | 0.25 |
| STANDARD DEVIATION | 2.99 | 1.50 | 4.24 | 4.36 | 0.50 | 0.96 | 0. | 0.50 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 75.00 | 50.00 | 100.00 | 75.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| MEAN | 4.32 | 4.05 | 3.87 | 3.47 | 8.25 | 5.75 | 9.00 | 5.25 |
| STANDARD ERROR OF MEAN | 0.28 | 0.42 | 0.78 | 0.32 | 1.60 | 0.63 | 0.71 | 0.48 |
| STANDARD DEVIATION | 0.56 | 0.84 | 1.56 | 0.63 | 3.20 | 1.26 | 1.41 | 0.96 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| MEAN | 25.50 | 52.50 | 1.67 | 0.67 | 3.67 | 2.33 | 10.33 | 12.00 |
| STANDARD ERROR OF MEAN | 11.50 | 14.50 | 0.33 | 0.33 | 0.67 | 0.33 | 3.33 | 3.79 |
| STANDARD DEVIATION | 16.26 | 20.51 | 0.58 | 0.58 | 1.15 | 0.58 | 5.77 | 6.56 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 33.33 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

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DESCRIPTIVE STATISTICS FOR MODEL: ALERTA II
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 11.00 | 10.00 | 10.00 | 10.00 | 11.00 | 10.00 | 10.00 | 11.00 |
| MEAN | 50.18 | -1.11 | 8.30 | [illegible]0 | 149.45 | 0.93 | 19.30 | 18.82 |
| STANDARD ERROR OF MEAN | 1.13 | 0.25 | 1.36 | 0.20 | 4.52 | 0.03 | 0.88 | 0.46 |
| STANDARD DEVIATION | 3.74 | 0.78 | 4.30 | 0.63 | 14.99 | 0.11 | 2.79 | 1.54 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 11.00 | 11.00 | 11.00 | 11.00 | 11.00 | 11.00 | 11.00 | 11.00 |
| MEAN | 3.27 | 2.27 | 16.73 | 12.64 | 1.00 | 0.91 | 3.73 | 3.82 |
| STANDARD ERROR OF MEAN | 1.79 | 1.17 | 0.86 | 1.47 | 0.45 | 0.49 | 0.14 | 0.12 |
| STANDARD DEVIATION | 5.93 | 3.88 | 2.87 | 4.86 | 1.48 | 1.64 | 0.47 | 0.40 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 63.64 | 63.64 | 0. | 0. | 63.64 | 72.73 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 9.09 | 18.18 | 72.73 | 81.82 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 11.00 | 11.00 | 11.00 | 11.00 | 10.00 | 10.00 | 11.00 | 11.00 |
| MEAN | 0.45 | 0.39 | 3.82 | 4.20 | 5.00 | 3.10 | 7.00 | 4.64 |
| STANDARD ERROR OF MEAN | 0.45 | 0.39 | 0.16 | 0.23 | 1.14 | 0.90 | 0.73 | 0.39 |
| STANDARD DEVIATION | 1.51 | 1.30 | 0.54 | 0.77 | 3.59 | 2.85 | 2.41 | 1.29 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 90.91 | 90.91 | 0. | 0. | 20.00 | 40.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 10.00 | 10.00 | 11.00 | 11.00 | 10.00 | 10.00 |
| MEAN | 0. | 0. | 34.90 | 40.60 | 3.36 | 3.18 | 9.50 | 10.40 |
| STANDARD ERROR OF MEAN | 0. | 0. | 5.50 | 8.92 | 0.43 | 0.42 | 0.97 | 1.16 |
| STANDARD DEVIATION | 0. | 0. | 17.38 | 28.21 | 1.43 | 1.40 | 3.06 | 3.66 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 100.00 | 0. | 10.00 | 9.09 | 9.09 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: NUEVAS FRONTERAS I
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 30.00 | 22.00 | 20.00 | 22.00 | 26.00 | 21.00 | 30.00 | 30.00 |
| MEAN | 53.77 | 0.60 | 6.00 | 15.18 | 142.65 | 0.82 | 19.00 | 16.53 |
| STANDARD ERROR OF MEAN | 0.69 | 0.13 | 0.37 | 0.30 | 2.99 | 0.05 | 0.71 | 0.51 |
| STANDARD DEVIATION | 3.78 | 0.60 | 1.65 | 1.40 | 15.24 | 0.21 | 3.90 | 2.80 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 13.33 | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 |
| MEAN | 18.20 | 14.03 | 9.30 | 2.03 | 3.83 | 3.67 | 2.00 | 0.50 |
| STANDARD ERROR OF MEAN | 0.75 | 0.79 | 1.11 | 0.63 | 0.07 | 0.11 | 0.27 | 0.21 |
| STANDARD DEVIATION | 4.13 | 4.33 | 6.10 | 3.47 | 0.38 | 0.61 | 1.49 | 1.17 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 46.67 | 0. | 0. | 30.00 | 83.33 |
| % SCORES AT TEST CEILING | 3.33 | 0. | 0. | 0. | 83.33 | 73.33 | 16.67 | 3.33 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 30.00 | 30.00 | 29.00 | 29.00 | 30.00 | 30.00 | 30.00 | 30.00 |
| MEAN | 4.05 | 3.41 | 0.74 | 0.05 | 8.63 | 6.70 | 8.33 | 5.70 |
| STANDARD ERROR OF MEAN | 0.15 | 0.17 | 0.21 | 0.05 | 0.49 | 0.43 | 0.49 | 0.28 |
| STANDARD DEVIATION | 0.81 | 0.91 | 1.13 | 0.28 | 2.20 | 2.38 | 2.71 | 1.53 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 44.83 | 96.55 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 30.00 | 30.00 | 30.00 | 29.00 | 30.00 | 30.00 | 30.00 | 30.00 |
| MEAN | 52.20 | 28.93 | 1.10 | 1.00 | 4.70 | 2.87 | 12.47 | 8.63 |
| STANDARD ERROR OF MEAN | 4.60 | 3.64 | 0.26 | 0.55 | 0.23 | 0.23 | 0.62 | 0.70 |
| STANDARD DEVIATION | 25.17 | 19.92 | 1.42 | 2.99 | 1.24 | 1.28 | 3.38 | 3.85 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 3.33 | 40.00 | 65.52 | 0. | 3.33 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 3.33 | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: NUEVAS FRONTERAS I
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: COMPARISON HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 34.00 | 27.00 | 26.00 | 27.00 | 34.00 | 27.00 | 34.00 | 34.00 |
| MEAN | 53.76 | 0.77 | 6.31 | 14.30 | 141.12 | 0.69 | 18.32 | 15.94 |
| STANDARD ERROR OF MEAN | 0.64 | 0.11 | 0.55 | 0.36 | 2.94 | 0.05 | 0.47 | 0.58 |
| STANDARD DEVIATION | 3.74 | 0.57 | 2.81 | 1.88 | 17.13 | 0.24 | 2.74 | 3.41 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 5.88 | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 |
| MEAN | 17.44 | 11.88 | 6.74 | 1.71 | 3.88 | 3.50 | 1.79 | 0.41 |
| STANDARD ERROR OF MEAN | 0.70 | 0.83 | 1.03 | 0.63 | 0.07 | 0.16 | 0.27 | 0.17 |
| STANDARD DEVIATION | 4.06 | 4.83 | 6.01 | 3.65 | 0.41 | 0.96 | 1.59 | 1.02 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 14.71 | 55.88 | 0. | 2.94 | 38.24 | 85.29 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 91.18 | 70.59 | 20.59 | 0. |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 |
| MEAN | 3.93 | 3.25 | 0.29 | 0.18 | 8.32 | 6.88 | 6.74 | 5.03 |
| STANDARD ERROR OF MEAN | 0.12 | 0.15 | 0.15 | 0.14 | 0.41 | 0.36 | 0.53 | 0.31 |
| STANDARD DEVIATION | 0.72 | 0.85 | 0.88 | 0.83 | 2.37 | 2.09 | 3.09 | 1.78 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 2.94 | 76.47 | 91.18 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 | 34.00 |
| MEAN | 45.94 | 26.97 | 0.97 | 1.21 | 4.59 | 2.44 | 12.24 | 8.21 |
| STANDARD ERROR OF MEAN | 3.75 | 3.73 | 0.44 | 0.47 | 0.25 | 0.26 | 0.54 | 0.74 |
| STANDARD DEVIATION | 21.87 | 21.76 | 2.59 | 2.75 | 1.44 | 1.50 | 3.14 | 4.30 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 2.94 | 8.82 | 64.71 | 76.47 | 0. | 2.94 | 0. | 2.94 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 2.94 | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: NUEVAS FRONTERAS I
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 2.00 | 2.00 |
| MEAN | 57.00 | -0.80 | 15.00 | 16.00 | 145.00 | 0.91 | 24.00 | 21.50 |
| STANDARD ERROR OF MEAN | 3.00 | | | | 6.00 | | 0. | 0.50 |
| STANDARD DEVIATION | 4.24 | | | | 8.49 | | 0. | 0.71 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| MEAN | 18.50 | 13.50 | 24.00 | 18.50 | 4.00 | 3.50 | 3.50 | 4.00 |
| STANDARD ERROR OF MEAN | 3.50 | 1.50 | 2.00 | 1.50 | 0. | 0.50 | 0.50 | 0. |
| STANDARD DEVIATION | 4.95 | 2.12 | 2.83 | 2.12 | 0. | 0.71 | 0.71 | 0. |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 50.00 | 0. | 100.00 | 50.00 | 50.00 | 100.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| MEAN | 1.10 | 0. | 3.90 | 3.25 | 11.50 | 7.50 | 11.00 | 6.00 |
| STANDARD ERROR OF MEAN | 1.10 | 0. | 0.10 | 0.25 | 1.50 | 0.50 | 2.00 | 1.00 |
| STANDARD DEVIATION | 1.56 | 0. | 0.14 | 0.35 | 2.12 | 0.71 | 2.83 | 1.41 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 50.00 | 100.00 | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| MEAN | 3.50 | 0. | 59.50 | 64.50 | 4.50 | 4.00 | 13.50 | 12.50 |
| STANDARD ERROR OF MEAN | 3.50 | 0. | 34.50 | 2.50 | 0.50 | 0. | 0.50 | 1.00 |
| STANDARD DEVIATION | 4.95 | 0. | 48.79 | 3.54 | 0.71 | 0. | 0.71 | 1.41 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 50.00 | 100.00 | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: NUEVAS FRONTERAS I
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: COMPARISON HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 54.00 | -0.57 | 5.00 | 18.00 | 142.00 | 0.91 | 23.00 | 20.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | 0. | 0. |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | | |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 16.00 | 13.00 | 22.00 | 17.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | | |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 100.00 | 100.00 | 100.00 | 100.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 3.60 | 4.20 | 4.00 | 4.00 | 12.00 | 11.00 | 9.00 | 7.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | | |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MEAN | 5.00 | 0. | 92.00 | 20.00 | 3.00 | 3.00 | 16.00 | 10.00 |
| STANDARD ERROR OF MEAN | | | | | | | | |
| STANDARD DEVIATION | | | | | | | | |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 100.00 | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: NUEVAS FRONTERAS II
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 7.00 | 10.00 | 10.00 | 10.00 | 9.00 | 10.00 |
| MEAN | 51.10 | 0.94 | 9.71 | 14.20 | 124.90 | 0.71 | 18.44 | 19.50 |
| STANDARD ERROR OF MEAN | 0.84 | 0.14 | 1.08 | 0.55 | 4.98 | 0.08 | 1.63 | 0.54 |
| STANDARD DEVIATION | 2.64 | 0.44 | 2.87 | 1.75 | 15.76 | 0.25 | 4.88 | 1.72 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 11.11 | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 20.10 | 11.50 | 15.30 | 6.70 | 3.80 | 3.40 | 2.70 | 1.30 |
| STANDARD ERROR OF MEAN | 1.09 | 0.83 | 2.28 | 2.46 | 0.13 | 0.27 | 0.52 | 0.56 |
| STANDARD DEVIATION | 3.45 | 2.64 | 7.20 | 7.78 | 0.42 | 0.84 | 1.64 | 1.77 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 0. | 40.00 | 0. | 0. | 20.00 | 60.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 80.00 | 60.00 | 50.00 | 20.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 9.00 | 9.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 3.87 | 3.78 | 2.44 | 0.86 | 9.00 | 7.70 | 9.20 | 5.40 |
| STANDARD ERROR OF MEAN | 0.36 | 0.27 | 0.51 | 0.45 | 0.88 | 0.79 | 0.96 | 0.92 |
| STANDARD DEVIATION | 1.15 | 0.84 | 1.52 | 1.36 | 2.79 | 2.50 | 3.05 | 2.91 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 22.22 | 66.67 | 0. | 0. | 0. | 10.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| MEAN | 49.40 | 55.20 | 0.30 | 0.10 | 4.40 | 2.60 | 13.70 | 11.30 |
| STANDARD ERROR OF MEAN | 8.71 | 5.79 | 0.21 | 0.10 | 0.37 | 0.54 | 1.17 | 0.78 |
| STANDARD DEVIATION | 27.55 | 18.32 | 0.67 | 0.32 | 1.17 | 1.71 | 3.71 | 2.45 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 80.00 | 90.00 | 0. | 10.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: NUEVAS FRONTERAS II
SPANISH PREFERRING CHILDREN, TREATMENT GROUP: COMPARISON HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 15.00 | 15.00 | 15.00 | 15.00 | 14.00 | 15.00 | 15.00 | 15.00 |
| MEAN | 50.73 | 1.07 | 6.53 | 16.80 | 130.71 | 0.76 | 19.00 | 17.53 |
| STANDARD ERROR OF MEAN | 0.91 | 0.11 | 0.42 | 0.49 | 3.28 | -0.06 | 0.95 | 0.80 |
| STANDARD DEVIATION | 3.51 | 0.43 | 1.64 | 1.90 | 12.29 | 0.21 | 3.66 | 3.09 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 0. | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 |
| MEAN | 16.13 | 12.33 | 11.43 | 1.27 | 4.00 | 3.73 | 2.27 | 0.20 |
| STANDARD ERROR OF MEAN | 0.68 | 1.12 | 1.86 | 0.86 | 0. | 0.15 | 0.46 | 0.20 |
| STANDARD DEVIATION | 2.64 | 4.32 | 7.21 | 3.35 | 0. | 0.59 | 1.79 | 0.77 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 13.33 | 66.67 | 0. | 0. | 33.33 | 93.33 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 100.00 | 80.00 | 40.00 | 0. |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 14.00 | 14.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 |
| MEAN | 4.14 | 3.61 | 1.64 | 0.60 | 9.27 | 7.60 | 8.33 | 3.60 |
| STANDARD ERROR OF MEAN | 0.23 | 0.27 | 0.41 | 0.32 | 0.45 | 0.35 | 0.85 | 0.76 |
| STANDARD DEVIATION | 0.88 | 1.00 | 1.61 | 1.24 | 1.75 | 1.35 | 3.31 | 2.95 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 0. | 0. | 40.00 | 80.00 | 0. | 0. | 0. | 20.00 |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 6.67 | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 |
| MEAN | 44.80 | 58.07 | 1.07 | 0.47 | 3.80 | 2.40 | 12.80 | 11.53 |
| STANDARD ERROR OF MEAN | 6.87 | 7.25 | 0.73 | 0.24 | 0.30 | 0.35 | 0.78 | 0.77 |
| STANDARD DEVIATION | 26.60 | 28.08 | 2.84 | 0.92 | 1.15 | 1.35 | 3.03 | 2.97 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 6.67 | 0. | 73.33 | 73.33 | 0. | 6.67 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |





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DESCRIPTIVE STATISTICS FOR MODEL: NUEVAS FRONTERAS II
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: EXPERIMENTAL HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 |
| MEAN | 52.43 | -1.55 | 7.14 | 15.05 | 128.33 | 0.84 | 19.10 | 17.52 |
| STANDARD ERROR OF MEAN | 0.91 | 0.09 | 0.82 | 0.37 | 2.06 | 0.04 | 0.94 | 0.64 |
| STANDARD DEVIATION | 4.15 | 0.40 | 3.75 | 1.72 | 9.44 | 0.18 | 4.32 | 2.94 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 23.81 | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 20.00 | 20.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 |
| MEAN | 1.05 | 0.60 | 21.71 | 15.81 | 0.19 | 0.10 | 3.86 | 3.43 |
| STANDARD ERROR OF MEAN | 1.00 | 0.45 | 0.59 | 1.21 | 0.19 | 0.10 | 0.08 | 0.16 |
| STANDARD DEVIATION | 4.47 | 2.01 | 2.70 | 5.56 | 0.87 | 0.44 | 0.36 | 0.75 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 90.00 | 80.00 | 0. | 0. | 95.24 | 95.24 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 4.76 | 0. | 85.71 | 57.14 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 21.00 | 21.00 | 21.00 | 21.00 | 19.00 | 19.00 | 21.00 | 21.00 |
| MEAN | 0. | 0. | 3.73 | 3.28 | 5.47 | 3.00 | 9.57 | 7.48 |
| STANDARD ERROR OF MEAN | 0. | 0. | 0.18 | 0.19 | 0.86 | 0.57 | 0.56 | 0.59 |
| STANDARD DEVIATION | 0. | 0. | 0.85 | 0.86 | 3.75 | 2.47 | 2.56 | 2.71 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 100.00 | 0. | 0. | 21.05 | 15.79 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 |
| MEAN | 0. | 0.10 | 34.67 | 46.38 | 3.81 | 2.76 | 11.90 | 9.48 |
| STANDARD ERROR OF MEAN | 0. | 0.10 | 4.39 | 6.04 | 0.22 | 0.26 | 0.70 | 0.82 |
| STANDARD DEVIATION | 0. | 0.44 | 20.13 | 27.67 | 1.03 | 1.18 | 3.22 | 3.75 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 95.24 | 0. | 4.76 | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

DESCRIPTIVE STATISTICS FOR MODEL: NUEVAS FRONTERAS II
ENGLISH PREFERRING CHILDREN, TREATMENT GROUP: COMPARISON HEAD START

| STATISTICS | CHLDAGE | FACTOR1 | INCOME | EDASP | PRESENT | PTEACH | _SOCIO | SOCIO |
|---|---|---|---|---|---|---|---|---|
| N | 20.00 | 20.00 | 18.00 | 20.00 | 18.00 | 20.00 | 20.00 | 19.00 |
| MEAN | 49.95 | -1.21 | 7.22 | 15.80 | 129.00 | 0.82 | 20.20 | 18.00 |
| STANDARD ERROR OF MEAN | 0.81 | 0.14 | 0.59 | 0.50 | 3.14 | 0.05 | 1.04 | 0.60 |
| STANDARD DEVIATION | 3.63 | 0.62 | 2.51 | 2.24 | 13.34 | 0.22 | 4.66 | 2.62 |
| % SCORES AT TEST FLOOR (SCORE = 0) | | | | | | | 0. | 0. |
| % SCORES AT TEST CEILING | | | | | | | 15.00 | 0. |

| | _PSIS | PSIS | _PSIE | PSIE | _SPERC | SPERC | _EPERC | EPERC |
|---|---|---|---|---|---|---|---|---|
| N | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| MEAN | 12.90 | 1.60 | 19.90 | 15.60 | 1.00 | 0.55 | 3.80 | 3.55 |
| STANDARD ERROR OF MEAN | 1.13 | 0.90 | 0.85 | 0.82 | 0.36 | 0.30 | 0.09 | 0.15 |
| STANDARD DEVIATION | 5.05 | 4.02 | 3.80 | 3.68 | 1.62 | 1.36 | 0.41 | 0.69 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 65.00 | 75.00 | 0. | 0. | 70.00 | 85.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 15.00 | 10.00 | 80.00 | 65.00 |

| | _SMLU | SMLU | _EMLU | EMLU | _SCOMP | SCOMP | _ECOMP | ECOMP |
|---|---|---|---|---|---|---|---|---|
| N | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| MEAN | 0.01 | 0. | 3.84 | 3.11 | 4.95 | 1.95 | 7.85 | 8.75 |
| STANDARD ERROR OF MEAN | 0.01 | 0. | 0.25 | 0.26 | 0.79 | 0.62 | 0.66 | 0.57 |
| STANDARD DEVIATION | 0.07 | 0. | 1.13 | 1.15 | 3.55 | 2.78 | 2.96 | 2.55 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 95.00 | 100.00 | 5.00 | 5.00 | 10.00 | 45.00 | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | _SQUAN | SQUAN | _EQUAN | EQUAN | _DESC | DESC | _QUAL | QUAL |
|---|---|---|---|---|---|---|---|---|
| N | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| MEAN | 0. | 0. | 44.50 | 63.85 | 4.00 | 3.25 | 11.90 | 10.55 |
| STANDARD ERROR OF MEAN | 0. | 0. | 6.04 | 9.18 | 0.16 | 0.28 | 0.80 | 0.70 |
| STANDARD DEVIATION | 0. | 0. | 27.03 | 41.04 | 0.73 | 1.25 | 3.60 | 3.14 |
| % SCORES AT TEST FLOOR (SCORE = 0) | 100.00 | 100.00 | 0. | 0. | 0. | 0. | 0. | 0. |
| % SCORES AT TEST CEILING | 0. | 0. | 0. | 0. | 5.00 | 10.00 | 0. | 0. |

# APPENDIX D

## INTERNAL CONSISTENCY RELIABILITY COEFFICIENTS FOR CHILD SCORING MEASURES, ACROSS AND BY TREATMENT GROUP AND LANGUAGE PREFERENCE

INTERNAL CONSISTENCY RELIABILITY COEFFICIENTS FOR CHILD SCORING MEASURES, ACROSS AND BY TREATMENT GROUP AND LANGUAGE PREFERENCE

| | | Across Treatment Classification | | By Treatment Classification | | | | | | Pilot Test | | Published Norms | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Experimental Head Start | | Comparison Head Start | | Stay-At-Home Comparison | | | | | |
| Language Preference | | Spanish | English | Spanish | English | Spanish | English | Spanish | English | Spanish | English | Spanish | English |
| Measure | Testing Time | | | | | | | | | | | | |
| SOCIO | Pre | .86 | .85 | .89 | .84 | .82 | .75 | .86 | .92 | .86 | | - | 1 |
| | Post | .84 | .87 | .84 | .87 | .82 | .87 | .82 | .87 | | | | |
| PSIS | Pre | .80 | .93 | .81 | .93 | .77 | .93 | .83 | .89 | | | .79 | |
| | Post | .81 | .93 | .85 | .95 | .68 | .93 | .78 | .87 | | | | |
| PSIE | Pre | .93 | .83 | .93 | .84 | .91 | .77 | .93 | .85 | | | .84 | |
| | Post | .93 | .82 | .92 | .80 | .92 | .78 | .92 | .85 | | | | |
| SPERC | Pre | .61 | .91 | .58 | .90 | .69 | .97 | .45 | .87 | | | 1 | |
| | Post | .33 | .93 | .31 | .94 | .38 | .91 | .34 | .90 | | | | |
| EPERC | Pre | .92 | .61 | .93 | .61 | .85 | .51 | .92 | .72 | | | 1 | |
| | Post | .86 | .30 | .84 | .34 | .88 | .01 | .85 | .36 | | | | |
| SCOMP | Pre | .51 | .81 | .54 | .82 | .37 | .85 | .71 | .61 | .79 | | 1 | |
| | Post | .45 | .79 | .46 | .82 | .39 | .80 | .45 | .59 | | | | |
| ECOMP | Pre | .72 | .55 | .69 | .57 | .74 | .41 | .80 | .57 | | .73 | 1 | |
| | Post | .69 | .63 | .64 | .59 | .69 | .62 | .79 | .73 | | | | |
| SDESC | Pre | .45 | | .41 | | .46 | | .62 | | .66 | | .65 | |
| | Post | .47 | | .46 | | .39 | | .53 | | | | | |
| EDESC | Pre | | .46 | | .47 | | .32 | | .54 | | .59 | | .77 |
| | Post | | .42 | | .39 | | .39 | | .43 | | | | |
| SQUAL | Pre | .81 | | .81 | | .82 | | .78 | | .31 | | .48 | |
| | Post | .75 | | .77 | | .68 | | .82 | | | | | |
| EQUAL | Pre | | .79 | | .79 | | .72 | | .85 | | .27 | | .69 |
| | Post | | .76 | | .78 | | .75 | | .73 | | | | |

[1] Test modified by J & A; published norms not applicable.

# APPENDIX E

## PRE- AND POSTTEST CORRELATIONS AMONG CHILD MEASURES FOR SPANISH-PREFERRING AND ENGLISH-PREFERRING CHILDREN

PRE- AND POSTTEST CORRELATIONS AMONG CHILD MEASURES FOR SPANISH-PREFERRING CHILDREN[1]

| | SOCIO | PSIS | PSIE | SPERC | EPERC | SMLU | EMLU | SCOMP | ECOMP | SQUAN | EQUAN | DESC | QUAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SOCIO | | 45 | 25 | 18 | 16 | 28 | 24 | 21 | 17 | 36 | -01 | 23 | 45 |
| PSIS | 31 | | 26 | 38 | 09 | 32 | 13 | 46 | 42 | 28 | -02 | 43 | 37 |
| PSIE | 26 | 42 | | 03 | 85 | 07 | 67 | 15 | 27 | 13 | 29 | 19 | 22 |
| SPERC | 05 | 33 | 13 | | 04 | 16 | 07 | 15 | 21 | 17 | 02 | 18 | 22 |
| EPERC | 18 | 17 | 82 | 07 | | 02 | 58 | 06 | 18 | 03 | 30 | 06 | 10 |
| SMLU | 19 | 29 | 05 | 13 | -04 | | 08 | 19 | 23 | 34 | 12 | 14 | 46 |
| EMLU | 14 | 07 | 65 | 08 | 59 | 13 | | 09 | 24 | 17 | 20 | 18 | 25 |
| SCOMP | 11 | 40 | 22 | 24 | 12 | 14 | 07 | | 45 | 10 | -02 | 19 | 14 |
| ECOMP | 29 | 45 | 49 | 17 | 40 | 07 | 34 | 44 | | 07 | -01 | 23 | 17 |
| SQUAN | 10 | 30 | 13 | 06 | 05 | 37 | 12 | 08 | 01 | | -13 | 18 | 70 |
| EQUAN | -03 | 02 | 19 | -04 | 22 | 03 | 23 | -06 | 06 | 05 | | 07 | 00 |
| DESC | 20 | 57 | 28 | 17 | 13 | 15 | 05 | 23 | 31 | 34 | 00 | | 29 |
| QUAL | 21 | 43 | 23 | 15 | 08 | 38 | 18 | 16 | 12 | 63 | 01 | 40 | |

[1]Correlations above the main diagonal are for pretest measures; those below it are for posttest measures.

PRE- AND POSTTEST CORRELATIONS AMONG CHILD MEASURES FOR ENGLISH PREFERRING CHILDREN[1]

| | SOCIO | PSIS | PSIE | SPERC | EPERC | SMLU | EMLU | SCOMP | ECOMP | SQUAN | EQUAN | DESC | QUAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SOCIO | | 07 | 45 | 09 | 36 | -03 | 33 | 06 | 09 | 04 | 27 | 23 | 32 |
| PSIS | 16 | | 11 | 86 | -11 | 51 | -02 | 56 | 10 | 13 | -17 | -3 | -01 |
| PSIE | 42 | -03 | | -07 | 49 | -09 | 17 | 20 | 37 | -06 | 10 | 51 | 30 |
| SPERC | 17 | 88 | -17 | | 09 | 47 | -01 | 49 | 00 | 21 | -13 | -06 | 01 |
| EPERC | 12 | 02 | 34 | -02 | | 05 | 20 | 09 | 06 | 08 | -04 | 26 | 14 |
| SMLU | 01 | 58 | -13 | 53 | -03 | | -11 | 29 | -13 | 26 | -23 | -18 | -14 |
| EMLU | 23 | -06 | 24 | -10 | 06 | -14 | | -03 | -06 | -04 | 34 | 22 | 44 |
| SCOMP | 17 | 51 | 20 | 43 | 00 | 21 | 04 | | 25 | 12 | -08 | 10 | 07 |
| ECOMP | 21 | 06 | 50 | -08 | 15 | -07 | 19 | 39 | | -11 | 05 | 22 | 11 |
| SQUAN | 03 | 22 | 03 | 15 | -01 | 13 | 03 | 09 | -04 | | -16 | -24 | -23 |
| EQUAN | 17 | 04 | 28 | 02 | 16 | -04 | 42 | 08 | 13 | -10 | | 20 | 66 |
| DESC | 18 | -10 | 56 | -17 | 26 | -25 | 19 | 09 | 21 | -01 | 36 | | 39 |
| QUAL | 23 | 02 | 46 | -01 | 25 | -05 | 40 | 17 | 31 | -03 | 70 | 51 | |

[1]Correlations above the main diagonal are for pretest measures; those below it are for posttest measures.

# APPENDIX F

## AN(C)OVA SOURCE TABLES FOR ALL STATISTICAL CONTRASTS OF EXPERIMENTAL HEAD START AND COMPARISON CHILDREN

OVERALL

SPANISH-PREFERRING CHILDREN, TREATMENT GROUPS: EXPERIMENTAL HEAD START AND COMPARISON HEAD START

DEPENDENT VARIABLE: _SMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 0.56151633 | 0.28075816 | 6.91 | 0.0018 | 0.056367 | 19.5565 |
| ERROR | 218 | 141.32771128 | 0.65746657 | | STD DEV | | _SMLU MEAN |
| CORRECTED TOTAL | 220 | 191.88922761 | | | 0.81084312 | | 4.14615349 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| SMLU | 1 | 0.61207369 | 10.06 | 0.0017 |
| TREAT | 1 | 1.94944584 | 2.96 | 0.0866 |

DEPENDENT VARIABLE: _EMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 6 | 134.59889278 | 22.43314880 | 11.33 | 0.0001 | 0.265596 | 101.7685 |
| ERROR | 188 | 372.18171170 | 1.97968996 | | STD DEV | | _EMLU MEAN |
| CORRECTED TOTAL | 194 | 506.78060448 | | | 1.40701455 | | 1.38256398 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| INCOME | 1 | 35.05688629 | 18.11 | 0.0001 | 1 | 19.01317362 | 9.60 | 0.0022 |
| TREAT | 1 | 35.37742561 | 17.87 | 0.0001 | 1 | 39.33005325 | 19.87 | 0.0001 |
| SITE | 4 | 63.36458068 | 8.00 | 0.0001 | 4 | 63.36458068 | 8.00 | 0.0001 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| INCOME | 1 | 19.01317362 | 9.60 | 0.0022 |
| TREAT | 1 | 39.33005325 | 19.87 | 0.0001 |
| SITE | 4 | 63.36458068 | 8.00 | 0.0001 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 58.60647364 | 29.30323682 | 6.15 | 0.0025 | 0.053141 | 34.4684 |
| ERROR | 219 | 1044.24037320 | 4.76822048 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 221 | 1102.84684685 | | | 2.18362563 | | 6.92792793 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| ECOMP | 1 | 56.24166129 | 11.80 | 0.0007 |
| TREAT | 1 | 2.36481240 | 0.50 | 0.4820 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 12 | 374.73829975 | 31.22819165 | 4.52 | 0.0001 | 0.226640 | 33.4977 |
| ERROR | 185 | 1278.71624570 | 6.91197971 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 197 | 1653.45454545 | | | 2.62906442 | | 7.84848485 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| CHLBAGE | 1 | 91.02110130 | 13.17 | 0.0004 | 1 | 80.71381646 | 11.68 | 0.0008 |
| FACTOR1 | 1 | 87.90929537 | 12.72 | 0.0005 | 1 | 67.79780035 | 6.92 | 0.0093 |
| INCOME | 1 | 23.97278789 | 3.47 | 0.0644 | 1 | 23.76665413 | 3.44 | 0.0654 |
| TREAT | 1 | 19.12867319 | 2.77 | 0.0979 | 1 | 26.93442411 | 3.90 | 0.0499 |
| SITE | 4 | 84.82748413 | 3.07 | 0.0178 | 4 | 84.82748413 | 3.07 | 0.0178 |
| TREAT*SITE | 4 | 67.87687789 | 2.46 | 0.0473 | 4 | 67.87687789 | 2.46 | 0.0473 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| CHLBAGE | 1 | 80.71381646 | 11.68 | 0.0008 |
| FACTOR1 | 1 | 67.79780035 | 6.92 | 0.0093 |
| INCOME | 1 | 23.76665413 | 3.44 | 0.0654 |
| TREAT | 1 | 36.15079690 | 5.23 | 0.0233 |
| SITE | 4 | 84.82748117 | 3.07 | 0.0197 |
| TREAT*SITE | 4 | 67.87687789 | 2.46 | 0.0473 |

DEPENDENT VARIABLE: _SQUAN QUANTITY OF SPANISH NARRATIVE

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 1 | 3055.02926691 | 3055.02926691 | 6.07 | 0.0146 | 0.027437 | 86.4679 |
| ERROR | 219 | 108290.38087134 | 503.67619010 | | STD DEV | | _SQUAN MEAN |
| CORRECTED TOTAL | 216 | 111345.41013825 | | | 22.44273134 | | 40.27649770 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 3055.02926691 | 6.07 | 0.0146 |

DEPENDENT VARIABLE: _DESC NARRATIVE DESCRIPTION

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 6 | 72.60400809 | 12.10066801 | 7.84 | 0.0001 | 0.180724 | 27.4725 |
| ERROR | 216 | 329.13590223 | 1.52377733 | | STD DEV | | _DESC MEAN |
| CORRECTED TOTAL | 222 | 401.73991031 | | | 1.23461376 | | 4.49327354 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| DESC | 1 | 35.68728701 | 23.55 | 0.0001 | 1 | 29.74268843 | 19.62 | 0.0001 |
| TREAT | 1 | 0.03616793 | 0.02 | 0.8994 | 1 | 0.10261922 | 0.07 | 0.7959 |
| SITE | 4 | 36.69233315 | 6.02 | 0.0001 | 4 | 36.69233315 | 6.02 | 0.0001 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| DESC | 1 | 29.74268843 | 19.52 | 0.0001 |
| TREAT | 1 | 0.10261922 | 0.07 | 0.7959 |
| SITE | 4 | 36.69233315 | 6.02 | 0.0001 |

DEPENDENT VARIABLE: _QUAL NARRATIVE QUALITY

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 210.97973759 | 105.48986880 | 12.37 | 0.0001 | 0.101538 | 22.5056 |
| ERROR | 219 | 1866.85810024 | 8.52446621 | | STD DEV | | _QUAL MEAN |
| CORRECTED TOTAL | 221 | 2077.83783784 | | | 2.91966809 | | 12.97297297 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| QUAL | 1 | 136.41807616 | 16.00 | 0.0001 |
| TREAT | 1 | 74.56066143 | 8.75 | 0.0034 |

OVERALL

SPANISH-PREFERRING CHILDREN, TREATMENT GROUPS: EXPERIMENTAL
HEAD START AND COMPARISON HEAD START

DEPENDENT VARIABLE: _PSIS SPANISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 8 | 1387.08535056 | 173.38566882 | 16.63 | 0.0001 | 0.414376 | 17.5875 |
| ERROR | 188 | 1960.32581696 | 10.42726498 | | STD DEV | | _PSIS MEAN |
| CORRECTED TOTAL | 196 | 3347.41116751 | | | 3.22912759 | | 18.36040609 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| PSIS | 1 | 825.20352751 | 79.14 | 0.0001 | 1 | 501.31726370 | 48.08 | 0.0001 |
| PTEACH | 1 | 96.20453959 | 9.23 | 0.0027 | 1 | 52.22490677 | 5.01 | 0.0264 |
| INCOME | 1 | 68.54531353 | 6.57 | 0.0111 | 1 | 49.33974210 | 4.73 | 0.0309 |
| TREAT | 1 | 58.03252671 | 5.57 | 0.0193 | 1 | 84.44237724 | 8.10 | 0.0049 |
| SITE | 4 | 339.09944323 | 8.13 | 0.0001 | 4 | 339.09944323 | 8.13 | 0.0001 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIS | 1 | 501.31726370 | 48.08 | 0.0001 |
| PTEACH | 1 | 52.22490677 | 5.01 | 0.0264 |
| INCOME | 1 | 49.33974210 | 4.73 | 0.0309 |
| TREAT | 1 | 84.44237724 | 8.10 | 0.0049 |
| SITE | 4 | 339.09944323 | 8.13 | 0.0001 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 8 | 5408.42932404 | 676.05366550 | 27.58 | 0.0001 | 0.542582 | 45.4338 |
| ERROR | 186 | 4559.51939391 | 24.51354513 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 194 | 9967.94871795 | | | 4.95111554 | | 10.89743590 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| PSIE | 1 | 3368.66998063 | 137.42 | 0.0001 | 1 | 2450.60011135 | 99.97 | 0.0001 |
| INCOME | 1 | 358.77564341 | 14.64 | 0.0002 | 1 | 195.97247189 | 7.99 | 0.0052 |
| EDASP | 1 | 156.79305457 | 6.40 | 0.0123 | 1 | 14.68804756 | 0.60 | 0.4399 |
| TREAT | 1 | 218.04386127 | 8.89 | 0.0032 | 1 | 329.35379999 | 13.44 | 0.0003 |
| SITE | 4 | 1306.14718415 | 13.32 | 0.0001 | 4 | 1306.14718415 | 13.32 | 0.0001 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIE | 1 | 2450.60011135 | 99.97 | 0.0001 |
| INCOME | 1 | 195.97247189 | 7.99 | 0.0052 |
| EDASP | 1 | 14.68804756 | 0.60 | 0.4399 |
| TREAT | 1 | 329.35379999 | 13.44 | 0.0003 |
| SITE | 4 | 1306.14718415 | 13.32 | 0.0001 |

DEPENDENT VARIABLE: _EPERC PERCEPTUAL MOTOR - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 7 | 162.68428742 | 23.24061249 | 12.33 | 0.0001 | 0.312366 | 60.5427 |
| ERROR | 190 | 358.12884390 | 1.88488865 | | STD DEV | | _EPERC MEAN |
| CORRECTED TOTAL | 197 | 520.81313131 | | | 1.37291247 | | 2.26767677 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| INCOME | 1 | 39.77196041 | 21.10 | 0.0001 | 1 | 11.12458700 | 5.90 | 0.0161 |
| FACTOR1 | 1 | 20.44659875 | 10.85 | 0.0012 | 1 | 59.35309506 | 31.49 | 0.0001 |
| TREAT | 1 | 8.59129549 | 4.56 | 0.0340 | 1 | 10.26048425 | 5.44 | 0.0207 |
| SITE | 4 | 93.87443276 | 12.45 | 0.0001 | 4 | 93.87443276 | 12.45 | 0.0001 |

DEPENDENT VARIABLE: _SOCIO OVERALL SOCIO EMOTIONAL RATING

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 7 | 124.70135621 | 17.81447946 | 2.61 | 0.0133 | 0.081138 | 14.1667 |
| ERROR | 207 | 1412.20096937 | [illegible]82222691 | | STD DEV | | _SOCIO MEAN |
| CORRECTED TOTAL | 214 | 1536.90232558 | | | [illegible]61193930 | | 18.43720930 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| SOCIO | 1 | 25.55145738 | 3.75 | 0.0543 | 1 | 8.22988916 | 1.21 | 0.2733 |
| CHLDAGE | 1 | 13.66079926 | 2.00 | 0.1586 | 1 | 5.06505407 | 0.74 | 0.3899 |
| TREAT | 1 | 0.85857766 | 0.13 | 0.7231 | 1 | 1.59220589 | 0.23 | 0.6295 |
| SITE | 4 | 84.63052191 | 3.10 | 0.0166 | 4 | 84.63052191 | 3.10 | 0.0166 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| [illegible] | 1 | 8.22988916 | 1.21 | 0.2733 |
| DE | 1 | 5.06505407 | 0.74 | 0.3899 |
| | 1 | 1.59220589 | 0.23 | 0.6295 |
| | 4 | 84.63052191 | 3.10 | 0.0166 |

# ENGLISH-PREFERRING CHILDREN, TREATMENT GROUPS: EXPERIMENTAL HEAD START AND COMPARISON HEAD START

DEPENDENT VARIABLE: _EMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 11.10572968 | 3.70857656 | 5.25 | 0.0029 | 0.205071 | 21.8574 |
| ERROR | 61 | 43.35980079 | 0.71081641 | | STD DEV | | _EMLU MEAN |
| CORRECTED TOTAL | 64 | 54.46553048 | | | 0.84309929 | | 3.96615348 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| EMLU | 1 | 7.35078533 | 10.34 | 0.0021 | 1 | 7.45021827 | 10.48 | 0.0020 |
| TREAT | 1 | 0.06630318 | 0.09 | 0.7611 | 1 | 0.01540106 | 0.02 | 0.8835 |
| SITE | 1 | 3.76870216 | 5.30 | 0.0247 | 1 | 3.76870216 | 5.30 | 0.0247 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| EMLU | 1 | 7.45021827 | 10.48 | 0.0020 |
| TREAT | 1 | 0.01540106 | 0.02 | 0.8835 |
| SITE | 1 | 3.76870216 | 5.30 | 0.0247 |

DEPENDENT VARIABLE: _SCOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 134.31426220 | 44.77142073 | 3.85 | 0.0162 | 0.173518 | 64.4963 |
| ERROR | 55 | 639.70743272 | 11.63649878 | | STD DEV | | _SCOMP MEAN |
| CORRECTED TOTAL | 58 | 774.10169492 | | | 3.41064492 | | 5.28813559 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| SCOMP | 1 | 91.03728462 | 7.83 | 0.0071 |
| INCOME | 1 | 43.19220903 | 3.71 | 0.0592 |
| TREAT | 1 | 0.08472855 | 0.01 | 0.9123 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 5 | 124.53437634 | 24.90687527 | 4.19 | 0.0026 | 0.262169 | 27.9407 |
| ERROR | 59 | 350.48100828 | 5.94035607 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 64 | 475.01538462 | | | 2.43728457 | | 8.72307692 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| ECOMP | 1 | 30.65273040 | 5.16 | 0.0268 | 1 | 28.05367375 | 4.72 | 0.0338 |
| CHLDAGE | 1 | 57.11767211 | 9.62 | 0.0030 | 1 | 36.97176216 | 6.22 | 0.0154 |
| TREAT | 1 | 2.21693490 | 0.37 | 0.5486 | 1 | 2.39186808 | 0.40 | 0.5282 |
| SITE | 1 | 2.40157898 | 0.40 | 0.5273 | 1 | 2.40157898 | 0.40 | 0.5273 |
| TREAT*SITE | 1 | 32.14565996 | 5.41 | 0.0235 | 1 | 32.14565996 | 5.41 | 0.0235 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| ECOMP | 1 | 28.05367375 | 4.72 | 0.0338 |
| CHLDAGE | 1 | 36.97176216 | 6.22 | 0.0154 |
| TREAT | 1 | 0.05426564 | 0.01 | 0.9242 |
| SITE | 1 | 2.06589134 | 0.35 | 0.5595 |
| TREAT*SITE | 1 | 32.14565996 | 5.41 | 0.0235 |

DEPENDENT VARIABLE: _EQUAN QUANTITY OF ENGLISH NARRATIVE

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 18163.36795601 | 6054.45598534 | 19.55 | 0.0001 | 0.490145 | 39.8571 |
| ERROR | 61 | 18893.77050553 | 309.73394271 | | STD DEV | | _EQUAN MEAN |
| CORRECTED TOTAL | 64 | 37057.13846154 | | | 17.59925972 | | 44.63076923 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| EQUAN | 1 | 15570.93011285 | 50.27 | 0.0001 | 1 | 14644.37968410 | 47.28 | 0.0001 |
| TREAT | 1 | 17.39290695 | 0.06 | 0.8135 | 1 | 61.96855301 | 0.20 | 0.6562 |
| SITE | 1 | 2575.44493681 | 8.32 | 0.0054 | 1 | 2575.44493681 | 8.32 | 0.0054 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| EQUAN | 1 | 14644.37968410 | 47.28 | 0.0001 |
| TREAT | 1 | 61.96855301 | 0.20 | 0.6562 |
| SITE | 1 | 2575.44493681 | 8.32 | 0.0054 |

DEPENDENT VARIABLE: _DESC NARRATIVE DESCRIPTION

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 6.28844699 | 3.14422349 | 3.33 | 0.0423 | 0.100043 | 23.9890 |
| ERROR | 60 | 56.56869587 | 0.94281160 | | STD DEV | | _DESC MEAN |
| CORRECTED TOTAL | 62 | 62.85714286 | | | 0.97098466 | | 4.04761905 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| EBASP | 1 | 6.22060207 | 6.60 | 0.0127 |
| TREAT | 1 | 0.06784492 | 0.07 | 0.7894 |

DEPENDENT VARIABLE: _QUAL NARRATIVE QUALITY

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 105.34162958 | 52.67081279 | 6.84 | 0.0019 | 0.182863 | 22.5902 |
| ERROR | 62 | 470.71991288 | 7.59225664 | | STD DEV | | _QUAL MEAN |
| CORRECTED TOTAL | 64 | 576.06153846 | | | 2.75540499 | | 12.20615385 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| QUAL | 1 | 99.04787549 | 13.52 | 0.0005 |
| TREAT | 1 | 10.29375088 | 1.36 | 0.2467 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 210.87259475 | 70.09085158 | 6.49 | 0.0008 | 0.248177 | 19.9604 |
| ERROR | 59 | 636.99728652 | 10.79656418 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 62 | 847.86984127 | | | 3.28581250 | | 20.50730159 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| CHLDAGE | 1 | 130.43881540 | 12.04 | 0.0009 |
| FACTOR1 | 1 | 38.03629371 | 3.71 | 0.0351 |
| TREAT | 1 | 0.98810044 | 0.03 | 0.3659 |

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DEPENDENT VARIABLE: _SMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 1 | 1.54876308 | 1.54876308 | 1.99 | 0.1632 | 0.029695 | 20.8679 |
| ERROR | 65 | 50.60735626 | 0.77857471 | | STD DEV | | _SMLU MEAN |
| CORRECTED TOTAL | 66 | 52.15611933 | | | 0.88236881 | | 4.22835786 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 1.54876308 | 1.99 | 0.1632 |

DEPENDENT VARIABLE: _EMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 46.30126461 | 23.15063230 | 10.55 | 0.0001 | 0.247999 | 72.6464 |
| ERROR | 64 | 140.39781870 | 2.19371592 | | STD DEV | | _EMLU MEAN |
| CORRECTED TOTAL | 66 | 186.69908331 | | | 1.48111982 | | 2.03880577 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| FACTOR1 | 1 | 31.27581832 | 14.26 | 0.0004 |
| TREAT | 1 | 15.02594628 | 6.85 | 0.0111 |

DEPENDENT VARIABLE: _SCOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 75.49524604 | 37.74762302 | 8.98 | 0.0004 | 0.227438 | 22.8611 |
| ERROR | 61 | 256.44225396 | 4.20397138 | | STD DEV | | _SCOMP MEAN |
| CORRECTED TOTAL | 63 | 331.93750000 | | | 2.05035884 | | 8.96875000 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| INCOME | 1 | 72.77435044 | 17.31 | 0.0001 |
| TREAT | 1 | 2.72089560 | 0.65 | 0.4242 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 4 | 162.03995867 | 40.50998965 | 4.81 | 0.0020 | 0.245725 | 39.2037 |
| ERROR | 59 | 497.39754139 | 8.43046680 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 63 | 659.43750000 | | | 2.90352661 | | 7.40625000 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| INCOME | 1 | 33.76023806 | 4.00 | 0.0500 | 1 | 44.12193913 | 5.23 | 0.0258 |
| TREAT | 1 | 43.16282967 | 5.12 | 0.0273 | 1 | 57.98692691 | 6.88 | 0.0111 |
| SITE | 1 | 59.89511336 | 7.10 | 0.0099 | 1 | 59.89511336 | 7.10 | 0.0099 |
| TREAT*SITE | 1 | 25.22177751 | 2.99 | 0.0889 | 1 | 25.22177751 | 2.99 | 0.0889 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| INCOME | 1 | 44.12193913 | 5.23 | 0.0258 |
| TREAT | 1 | 78.97017790 | 9.37 | 0.0033 |
| SITE | 1 | 71.67565037 | 8.50 | 0.0050 |
| TREAT*SITE | 1 | 25.22177751 | 2.99 | 0.0889 |

DEPENDENT VARIABLE: _SQUAN QUANTITY OF SPANISH NARRATIVE

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 4993.49206369 | 1664.49735450 | 3.30 | 0.0262 | 0.143619 | 43.5339 |
| ERROR | 59 | 29775.58730159 | 504.67097121 | | STD DEV | | _SQUAN MEAN |
| CORRECTED TOTAL | 62 | 34769.07936508 | | | 22.46488307 | | 51.60317460 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| TREAT | 1 | 1666.34914196 | 3.30 | 0.0743 | 1 | 2098.95318106 | 4.16 | 0.0459 |
| SITE | 1 | 847.11930162 | 1.68 | 0.2002 | 1 | 847.11930162 | 1.68 | 0.2002 |
| TREAT*SITE | 1 | 2480.02361991 | 4.91 | 0.0305 | 1 | 2480.02361991 | 4.91 | 0.0305 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 864.18744244 | 1.71 | 0.1958 |
| SITE | 1 | 370.17151525 | 0.73 | 0.3952 |
| TREAT*SITE | 1 | 2480.02361991 | 4.91 | 0.0305 |

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DEPENDENT VARIABLE: _DESC NARRATIVE DESCRIPTION

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 5 | 49.83093828 | 9.96618766 | 6.44 | 0.0001 | 0.353064 | 28.4723 |
| ERROR | 59 | 91.30752326 | 1.54758514 | | STD DEV | | _DESC MEAN |
| CORRECTED TOTAL | 64 | 141.13846154 | | | 1.24401975 | | 4.36923077 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| DESC | 1 | 15.96122376 | 10.31 | 0.0021 | 1 | 17.10486852 | 11.05 | 0.0015 |
| EDASP | 1 | 5.65038985 | 3.65 | 0.0609 | 1 | 0.50484276 | 0.33 | 0.5701 |
| TREAT | 1 | 4.57743250 | 2.96 | 0.0907 | 1 | 3.01081045 | 1.95 | 0.1683 |
| SITE | 1 | 20.85703750 | 13.48 | 0.0005 | 1 | 20.85703750 | 13.48 | 0.0005 |
| TREAT*SITE | 1 | 2.78485468 | 1.80 | 0.1849 | 1 | 2.78485468 | 1.80 | 0.1849 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| DESC | 1 | 17.10486852 | 11.05 | 0.0015 |
| EDASP | 1 | 0.50484276 | 0.33 | 0.5701 |
| TREAT | 1 | 5.60976806 | 3.62 | 0.0618 |
| SITE | 1 | 15.81445225 | 10.22 | 0.0022 |
| TREAT*SITE | 1 | 2.78485468 | 1.80 | 0.1849 |

DEPENDENT VARIABLE: _QUAL NARRATIVE QUALITY

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 4 | 169.13761212 | 42.28440303 | 6.17 | 0.0003 | 0.284772 | 20.0890 |
| ERROR | 62 | 424.80268639 | 6.85165623 | | STD DEV | | _QUAL MEAN |
| CORRECTED TOTAL | 66 | 593.94029851 | | | 2.61756685 | | 13.02985075 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| QUAL | 1 | 48.29917499 | 7.05 | 0.0101 | 1 | 41.64840056 | 6.08 | 0.0165 |
| TREAT | 1 | 84.41079044 | 12.42 | 0.0008 | 1 | 100.96965804 | 14.74 | 0.0003 |
| SITE | 1 | 28.64650399 | 4.18 | 0.0451 | 1 | 28.64650399 | 4.18 | 0.0451 |
| TREAT*SITE | 1 | 7.78114310 | 1.14 | 0.2907 | 1 | 7.78114310 | 1.14 | 0.2907 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| QUAL | 1 | 41.64840056 | 6.08 | 0.0165 |
| TREAT | 1 | 72.62366840 | 10.60 | 0.0018 |
| SITE | 1 | 21.54430310 | 3.14 | 0.0811 |
| TREAT*SITE | 1 | 7.78114310 | 1.14 | 0.2907 |

DEPENDENT VARIABLE: _PSIS SPANISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 5 | 583.42624017 | 116.68524803 | 9.97 | 0.0001 | 0.457971 | 19.0384 |
| ERROR | 59 | 690.51222137 | 11.70359697 | | STD DEV | | _PSIS MEAN |
| CORRECTED TOTAL | 64 | 1273.93846154 | | | 3.42105203 | | 17.96923077 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| PSIS | 1 | 294.30668118 | 20.87 | 0.0001 | 1 | 252.86056240 | 21.61 | 0.0001 |
| EDASP | 1 | 69.44616732 | 5.93 | 0.0179 | 1 | 0.32699793 | 0.03 | 0.8678 |
| TREAT | 1 | 53.98973831 | 4.61 | 0.0356 | 1 | 41.13778946 | 3.51 | 0.0656 |
| SITE | 1 | 213.32288659 | 18.23 | 0.0001 | 1 | 213.32288659 | 18.23 | 0.0001 |
| TREAT*SITE | 1 | 2.36106677 | 0.20 | 0.6550 | 1 | 2.36106677 | 0.20 | 0.6550 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIS | 1 | 252.86056240 | 21.61 | 0.0001 |
| EDASP | 1 | 0.32699793 | 0.03 | 0.8678 |
| TREAT | 1 | 33.90078490 | 3.28 | 0.0752 |
| SITE | 1 | 188.71530111 | 16.12 | 0.0002 |
| TREAT*SITE | 1 | 2.36106677 | 0.20 | 0.6550 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 5 | 1710.84098104 | 343.76819621 | 14.75 | 0.0001 | 0.564095 | 36.6406 |
| ERROR | 57 | 1326.23838404 | 23.30242779 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 62 | 3047.07936508 | | | 4.82725883 | | 13.17460317 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| PSIE | 1 | 610.69510026 | 26.55 | 0.0001 | 1 | 461.29705523 | 19.80 | 0.0001 |
| INCOME | 1 | 117.77367237 | 5.05 | 0.0285 | 1 | 135.55718216 | 5.82 | 0.0191 |
| TREAT | 1 | 197.73375993 | 8.48 | 0.0051 | 1 | 279.26525954 | 11.98 | 0.0010 |
| SITE | 1 | 746.43207742 | 32.03 | 0.0001 | 1 | 746.43207742 | 32.03 | 0.0001 |
| TREAT*SITE | 1 | 38.20617506 | 1.64 | 0.2056 | 1 | 38.20617506 | 1.64 | 0.2056 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIE | 1 | 461.29705523 | 19.80 | 0.0001 |
| INCOME | 1 | 135.55719216 | 5.82 | 0.0191 |
| TREAT | 1 | 315.85558609 | 13.55 | 0.0005 |
| SITE | 1 | 776.68182800 | 33.34 | 0.0001 |
| TREAT*SITE | 1 | 38.20617506 | 1.64 | 0.2056 |

DEPENDENT VARIABLE: _SOCIO OVERALL SOCIO EMOTIONAL RATING

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 4 | 68.59148785 | 17.14787196 | 5.18 | 0.0012 | 0.266642 | 10.3575 |
| ERROR | 57 | 188.65044763 | 3.30965698 | | STD DEV | | _SOCIO MEAN |
| CORRECTED TOTAL | 61 | 257.24193548 | | | 1.81926627 | | 17.56451613 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| SOCIO | 1 | 44.76096979 | 13.52 | 0.0005 | 1 | 26.01299110 | 7.86 | 0.0069 |
| TREAT | 1 | 0.37737710 | 0.11 | 0.7369 | 1 | 0.96444827 | 0.29 | 0.5910 |
| SITE | 1 | 18.00963576 | 5.44 | 0.0232 | 1 | 18.00963576 | 5.44 | 0.0232 |
| TREAT*SITE | 1 | 5.44354521 | 1.64 | 0.2049 | 1 | 5.44354521 | 1.64 | 0.2049 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| SOCIO | 1 | 26.01299110 | 7.86 | 0.0069 |
| TREAT | 1 | 3.32649825 | 1.01 | 0.3203 |
| SITE | 1 | 19.75081760 | 5.97 | 0.0177 |
| TREAT*SITE | 1 | 5.44354521 | 1.64 | 0.2049 |

DEPENDENT VARIABLE: _SMLN

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 3.64056848 | 1.21352283 | 2.47 | 0.0766 | 0.159417 | 17.2092 |
| ERROR | 39 | 19.19617571 | 0.49220963 | | STD DEV | | _SMLN MEAN |
| CORRECTED TOTAL | 42 | 22.83674419 | | | 0.70157653 | | 4.07674377 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| TREAT | 1 | 2.12236849 | 4.31 | 0.0445 | 1 | 2.35643942 | 4.79 | 0.0347 |
| SP | 1 | 0.63333215 | 1.29 | 0.2634 | 1 | 0.63333215 | 1.29 | 0.2634 |
| TREAT*SP | 1 | 0.88468784 | 1.80 | 0.1878 | 1 | 0.88468784 | 1.80 | 0.1878 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 2.06866354 | 4.15 | 0.0485 |
| SP | 1 | 0.70211538 | 1.43 | 0.2396 |
| TREAT*SP | 1 | 0.88468784 | 1.80 | 0.1878 |

DEPENDENT VARIABLE: _DMLN

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 4 | 39.32863375 | 9.83065844 | 4.81 | 0.0038 | 0.327859 | 75.2768 |
| ERROR | 38 | 80.61303035 | 2.12144817 | | STD DEV | | _DMLN MEAN |
| CORRECTED TOTAL | 42 | 119.93766410 | | | 1.45691980 | | 1.93488353 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| FACTOR1 | 1 | 21.70117647 | 10.23 | 0.0028 | 1 | 17.98199339 | 8.48 | 0.0060 |
| TREAT | 1 | 3.83813970 | 1.81 | 0.1866 | 1 | 5.12920081 | 2.42 | 0.1283 |
| SP | 1 | 13.42968911 | 6.33 | 0.0162 | 1 | 13.42968911 | 6.33 | 0.0162 |
| TREAT*SP | 1 | 0.35389519 | 0.17 | 0.6855 | 1 | 0.35389519 | 0.17 | 0.6855 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| FACTOR1 | 1 | 17.98199339 | 8.48 | 0.0060 |
| TREAT | 1 | 6.01583286 | 2.87 | 0.1002 |
| SP | 1 | 12.58456795 | 6.98 | 0.0157 |
| TREAT*SP | 1 | 0.35389519 | 0.17 | 0.6855 |

DEPENDENT VARIABLE: _SCOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 10.96023685 | 3.64674562 | 0.78 | 0.5116 | 0.056892 | 23.9433 |
| ERROR | 39 | 182.01680794 | 4.66760277 | | STD DEV | | _SCOMP MEAN |
| CORRECTED TOTAL | 42 | 192.97704419 | | | 2.16046355 | | 9.02329581 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| TREAT | 1 | 0.69065723 | 0.13 | 0.7217 | 1 | 1.20586009 | 0.26 | 0.6161 |
| SP | 1 | 9.01177160 | 1.93 | 0.1726 | 1 | 9.01177160 | 1.93 | 0.1726 |
| TREAT*SP | 1 | 1.32780742 | 0.28 | 0.5968 | 1 | 1.32780742 | 0.28 | 0.5968 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 0.94684468 | 0.20 | 0.6551 |
| SP | 1 | 9.31120991 | 1.99 | 0.1658 |
| TREAT*SP | 1 | 1.32780742 | 0.28 | 0.5968 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 4 | 67.46731889 | 16.86682972 | 3.18 | 0.0252 | 0.206381 | 29.3146 |
| ERROR | 38 | 269.16058809 | 5.37264705 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 42 | 271.62790698 | | | 2.31789718 | | 7.90697674 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| FACTOR1 | 1 | 34.18273845 | 6.36 | 0.0160 | 1 | 33.75389781 | 6.28 | 0.0166 |
| TREAT | 1 | 39.55382906 | 7.36 | 0.0099 | 1 | 23.16699078 | 4.31 | 0.0447 |
| SP | 1 | 12.05456777 | 2.24 | 0.1429 | 1 | 12.05456777 | 2.24 | 0.1429 |
| TREAT*SP | 1 | 0.67607563 | 0.13 | 0.7247 | 1 | 0.67607563 | 0.13 | 0.7247 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| FACTOR1 | 1 | 33.75389781 | 6.28 | 0.0166 |
| TREAT | 1 | 22.16239942 | 4.13 | 0.0493 |
| SP | 1 | 12.05900377 | 2.24 | 0.1390 |
| TREAT*SP | 1 | 0.67607563 | 0.13 | 0.7247 |

DEPENDENT VARIABLE: _PSID SPANISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 4 | 173.36913106 | 43.34228277 | 4.34 | 0.0054 | 0.313724 | 16.0490 |
| ERROR | 38 | 379.23950010 | 9.97998684 | | STD DEV | | _PSID MEAN |
| CORRECTED TOTAL | 42 | 552.60863118 | | | 3.15911172 | | 19.66186047 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| PSID | 1 | 115.03246853 | 11.53 | 0.0016 | 1 | 83.27478561 | 8.34 | 0.0064 |
| TREAT | 1 | 25.27052710 | 2.53 | 0.1196 | 1 | 30.92058193 | 3.10 | 0.0864 |
| SP | 1 | 32.06360698 | 3.21 | 0.0810 | 1 | 32.06360698 | 3.21 | 0.0810 |
| TREAT*SP | 1 | 0.79654923 | 0.08 | 0.7791 | 1 | 0.79654923 | 0.08 | 0.7791 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSID | 1 | 83.27478561 | 8.34 | 0.0064 |
| TREAT | 1 | 29.31580783 | 2.94 | 0.0947 |
| SP | 1 | 32.75928200 | 3.28 | 0.0779 |
| TREAT*SP | 1 | 0.79654923 | 0.08 | 0.7791 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 4 | 387.59730478 | 96.89932619 | 3.25 | 0.0219 | 0.254725 | 36.8464 |
| ERROR | 38 | 1134.03060220 | 29.84291058 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 42 | 1521.62790698 | | | 5.46286652 | | 14.90697674 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| PSIE | 1 | 236.89681906 | 7.94 | 0.0076 | 1 | 182.02893336 | 6.10 | 0.0181 |
| TREAT | 1 | 125.50444289 | 4.21 | 0.0472 | 1 | 132.11980409 | 4.43 | 0.0382 |
| SP | 1 | 12.95433541 | 0.43 | 0.5140 | 1 | 12.95433541 | 0.43 | 0.5140 |
| TREAT*SP | 1 | 12.24046007 | 0.41 | 0.5257 | 1 | 12.24046007 | 0.41 | 0.5257 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIE | 1 | 182.02893336 | 6.10 | 0.0181 |
| TREAT | 1 | 132.11980409 | 4.43 | 0.0382 |
| SP | 1 | 12.95433541 | 0.43 | 0.5140 |
| TREAT*SP | 1 | 12.24046007 | 0.41 | 0.5257 |

## UN MARCO ABIERTO I, ENGLISH-PREFERRING

DEPENDENT VARIABLE: _EMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 3.96600913 | 1.98300456 | 5.02 | 0.0178 | 0.345512 | 14.7012 |
| ERROR | 19 | 7.51262350 | 0.39540124 | | STD DEV | | _EMLU MEAN |
| CORRECTED TOTAL | 21 | 11.47863263 | | | 0.62880938 | | 4.27727231 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| FACTOR1 | 1 | 3.90666537 | 9.88 | 0.0054 |
| TREAT | 1 | 0.05934376 | 0.15 | 0.7028 |

DEPENDENT VARIABLE: _SCOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 1 | 20.11904762 | 20.11904762 | 1.49 | 0.2356 | 0.063301 | 67.9135 |
| ERROR | 22 | 297.71428571 | 13.53246753 | | STD DEV | | _SCOMP MEAN |
| CORRECTED TOTAL | 23 | 317.83333333 | | | 3.67865023 | | 5.41666667 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 20.11904762 | 1.49 | 0.2356 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 51.94381874 | 17.31460625 | 3.58 | 0.0333 | 0.360939 | 25.0508 |
| ERROR | 19 | 91.96922474 | 4.84048551 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 22 | 143.91304348 | | | 2.20011034 | | 8.78260870 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| CHLDAGE | 1 | 26.06172951 | 5.38 | 0.0318 |
| PRESENT | 1 | 25.12348324 | 5.19 | 0.0345 |
| TREAT | 1 | 0.75860599 | 0.16 | 0.6966 |

DEPENDENT VARIABLE: _EQUAN QUANTITY OF ENGLISH NARRATIVE

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 7802.53446239 | 2600.84482080 | 15.22 | 0.0001 | 0.717289 | 24.1647 |
| ERROR | 18 | 3075.28371943 | 170.84909552 | | STD DEV | | _EQUAN MEAN |
| CORRECTED TOTAL | 21 | 10877.81818182 | | | 13.07092558 | | 54.09090909 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| EQUAN | 1 | 5406.86789855 | 31.65 | 0.0001 |
| FACTOR1 | 1 | 2390.39116288 | 13.99 | 0.0015 |
| TREAT | 1 | 5.27540096 | 0.03 | 0.8625 |

DEPENDENT VARIABLE: _DESC NARRATIVE DESCRIPTION

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 6.20576098 | 3.10288049 | 2.61 | 0.0995 | 0.215682 | 25.2382 |
| ERROR | 19 | 22.56696629 | 1.18773507 | | STD DEV | | _DESC MEAN |
| CORRECTED TOTAL | 21 | 28.77272727 | | | 1.08983259 | | 4.31818182 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| EDASP | 1 | 6.20572636 | 5.22 | 0.0339 |
| TREAT | 1 | 0.00003462 | 0.00 | 0.9957 |

UN MARCO ABIERTO I. ENGLISH-PREFERRING

DEPENDENT VARIABLE: _QUAL NARRATIVE QUALITY

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 32.38997686 | 16.19498843 | 4.00 | 0.0354 | 0.296414 | 15.6932 |
| ERROR | 19 | 76.84275042 | 4.04646055 | | STD DEV | | _QUAL MEAN |
| CORRECTED TOTAL | 21 | 109.27272727 | | | 2.01158160 | | 12.81818182 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| INCOME | 1 | 32.13674796 | 7.94 | 0.0110 |
| TREAT | 1 | 0.25322889 | 0.06 | 0.8051 |

DEPENDENT VARIABLE: _PSIS SPANISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 233.05213521 | 116.52606761 | 5.53 | 0.0128 | 0.368012 | 109.7508 |
| ERROR | 19 | 400.22059206 | 21.06424169 | | STD DEV | | _PSIS MEAN |
| CORRECTED TOTAL | 21 | 633.27272727 | | | 4.58957969 | | 4.18181818 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| FACTOR1 | 1 | 177.89401297 | 8.45 | 0.0091 |
| TREAT | 1 | 55.15812224 | 2.62 | 0.1221 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 192.30311799 | 64.10103933 | 5.84 | 0.0053 | 0.479715 | 16.3176 |
| ERROR | 19 | 208.56644723 | 10.97718143 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 22 | 400.86956522 | | | 3.31318298 | | 20.30434783 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIE | 1 | 130.02004141 | 11.84 | 0.0027 |
| PRESENT | 1 | 49.44618200 | 4.50 | 0.0472 |
| TREAT | 1 | 12.83669459 | 1.17 | 0.2931 |

DEPENDENT VARIABLE: _SOCIO OVERALL SOCIO EMOTIONAL RATING

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 25.86544588 | 8.62181529 | 6.95 | 0.0029 | 0.558887 | 5.8765 |
| ERROR | 17 | 21.08693507 | 1.24040795 | | STD DEV | | _SOCIO MEAN |
| CORRECTED TOTAL | 20 | 46.95238095 | | | 1.11873603 | | 18.95238095 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| EDASP | 1 | 19.75799024 | 15.93 | 0.0009 |
| SOCIO | 1 | 6.09051657 | 4.91 | 0.0406 |
| TREAT | 1 | 0.01093907 | 0.01 | 0.9083 |

UN MARCO ABIERTO AN(C)OVAS, ENGLISH-PREFERRING

DEPENDENT VARIABLE: _EMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 3.23420769 | 1.07823590 | 2.19 | 0.1045 | 0.144236 | 16.5921 |
| ERROR | 39 | 19.19180117 | 0.49209747 | | STD DEV | | _EMLU MEAN |
| CORRECTED TOTAL | 42 | 22.42650887 | | | 0.70149659 | | 4.22790654 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| EMLU | 1 | 2.48355168 | 5.05 | 0.0304 |
| CELL | 2 | 0.75115601 | 0.76 | 0.4730 |

DEPENDENT VARIABLE: _SCOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 4 | 189.15117695 | 47.28779424 | 4.39 | 0.0059 | 0.347217 | 55.4412 |
| ERROR | 33 | 355.61198095 | 10.77612063 | | STD DEV | | _SCOMP MEAN |
| CORRECTED TOTAL | 37 | 544.76315789 | | | 3.28270020 | | 5.92105263 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| SCOMP | 1 | 109.80710660 | 10.19 | 0.0031 |
| FACTOR1 | 1 | 76.03109574 | 7.06 | 0.0121 |
| CELL | 2 | 3.31297461 | 0.15 | 0.8581 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 13.41851722 | 6.70925861 | 0.96 | 0.3913 | 0.045880 | 29.5937 |
| ERROR | 40 | 279.37218045 | 6.98430451 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 42 | 292.79069767 | | | 2.64278348 | | 8.93023256 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| CELL | 2 | 13.41851722 | 0.96 | 0.3913 |

DEPENDENT VARIABLE: _EQUAN QUANTITY OF ENGLISH NARRATIVE

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 5297.01138907 | 1765.67046302 | 4.99 | 0.0050 | 0.277525 | 35.8563 |
| ERROR | 39 | 13789.59326209 | 353.57931441 | | STD DEV | | _EQUAN MEAN |
| CORRECTED TOTAL | 42 | 19086.60465116 | | | 18.80370481 | | 52.44186047 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| EQUAN | 1 | 5223.21636117 | 14.77 | 0.0004 |
| CELL | 2 | 73.79502791 | 0.10 | 0.9012 |

DEPENDENT VARIABLE: _DESC NARRATIVE DESCRIPTION

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 9.24895983 | 3.08298661 | 2.46 | 0.0796 | 0.178225 | 27.6351 |
| ERROR | 34 | 42.64577701 | 1.25428756 | | STD DEV | | _DESC MEAN |
| CORRECTED TOTAL | 37 | 51.89473684 | | | 1.11994980 | | 4.05263158 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| EDASP | 1 | 8.94731571 | 7.13 | 0.0115 |
| CELL | 2 | 0.30164412 | 0.12 | 0.8871 |

UN MARCO ABIERTO AN(C)OVAS, ENGLISH-PREFERRING

DEPENDENT VARIABLE: _QUAL NARRATIVE QUALITY

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 37.92066547 | 12.64022182 | 2.37 | 0.0853 | 0.154207 | 17.7007 |
| ERROR | 39 | 207.98631127 | 5.33298234 | | STD DEV | | _QUAL MEAN |
| CORRECTED TOTAL | 42 | 245.90697674 | | | 2.30932506 | | 13.04651163 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| CHLDAGE | 1 | 33.33513151 | 6.25 | 0.0167 |
| CELL | 2 | 4.58553396 | 0.43 | 0.6536 |

DEPENDENT VARIABLE: _PSIS SPANISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 653.47818090 | 217.82605363 | 11.02 | 0.0001 | 0.492888 | 94.4028 |
| ERROR | 34 | 672.33762858 | 19.77463613 | | STD DEV | | _PSIS MEAN |
| CORRECTED TOTAL | 37 | 1325.81578947 | | | 4.44686813 | | 4.71052632 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| FACTOR1 | 1 | 593.62778368 | 30.02 | 0.0001 |
| CELL | 2 | 59.85037722 | 1.51 | 0.2346 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 4 | 395.02221386 | 98.75555346 | 12.52 | 0.0001 | 0.568625 | 14.3755 |
| ERROR | 38 | 299.67546056 | 7.88619633 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 42 | 694.69767442 | | | 2.80823723 | | 19.53488372 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIE | 1 | 247.61946168 | 31.40 | 0.0001 |
| CHLDAGE | 1 | 47.24295386 | 5.99 | 0.0191 |
| CELL | 2 | 100.15979832 | 6.35 | 0.0042 |

DEPENDENT VARIABLE: _SOCIO OVERALL SOCIO EMOTIONAL RATING

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 93.89741223 | 31.29913741 | 4.76 | 0.0067 | 0.284193 | 14.3995 |
| ERROR | 36 | 236.50258777 | 6.56951633 | | STD DEV | | _SOCIO MEAN |
| CORRECTED TOTAL | 39 | 330.40000000 | | | 2.56310677 | | 17.80000000 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| SOCIO | 1 | 40.20712679 | 6.12 | 0.0182 |
| CELL | 2 | 53.69028345 | 4.09 | 0.0252 |

AMANECER AN(C)OVAS, SPANISH-PREFERRING

DEPENDENT VARIABLE: _SMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 6.29974192 | 3.14987096 | 6.33 | 0.0031 | 0.167379 | 16.5536 |
| ERROR | 63 | 31.33782904 | 0.49742586 | | STD DEV | | _SMLU MEAN |
| CORRECTED TOTAL | 65 | 37.63757096 | | | 0.70528424 | | 4.26060571 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| CHLDAGE | 1 | 6.25814127 | 12.58 | 0.0007 |
| TREAT | 1 | 0.04160065 | 0.08 | 0.7734 |

DEPENDENT VARIABLE: _SCOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 24.23847826 | 12.11923913 | 2.81 | 0.0678 | 0.081904 | 22.3229 |
| ERROR | 63 | 271.70091568 | 4.31271295 | | STD DEV | | _SCOMP MEAN |
| CORRECTED TOTAL | 65 | 295.93939394 | | | 2.07670724 | | 9.30303030 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| SCOMP | 1 | 20.68561171 | 4.80 | 0.0322 |
| TREAT | 1 | 3.55286655 | 0.82 | 0.3675 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 1 | 3.35664336 | 3.35664336 | 0.70 | 0.4044 | 0.010887 | 26.2424 |
| ERROR | 64 | 304.96153846 | 4.76502404 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 65 | 308.31818182 | | | 2.18289350 | | 8.31818182 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 3.35664336 | 0.70 | 0.4044 |

DEPENDENT VARIABLE: _SQUAN QUANTITY OF SPANISH NARRATIVE

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 3597.67730863 | 1798.83865132 | 5.61 | 0.0058 | 0.153174 | 39.7207 |
| ERROR | 62 | 19889.76885121 | 320.80272341 | | STD DEV | | _SQUAN MEAN |
| CORRECTED TOTAL | 64 | 23487.44615385 | | | 17.91096657 | | 45.09230769 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| TREAT | 1 | 1040.43333333 | 3.24 | 0.0766 | 1 | 1125.05166161 | 3.51 | 0.0658 |
| SEX | 1 | 2557.24396930 | 7.97 | 0.0064 | 1 | 2557.24396930 | 7.97 | 0.0064 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 1125.05166161 | 3.51 | 0.0658 |
| SEX | 1 | 2557.24396930 | 7.97 | 0.0064 |

DEPENDENT VARIABLE: _SQUAN QUANTITY OF SPANISH NARRATIVE

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 3597.67730263 | 1798.83865132 | 5.61 | 0.0058 | 0.153174 | 39.7207 |
| ERROR | 62 | 19889.76885121 | 320.80272341 | | STD DEV | | _SQUAN MEAN |
| CORRECTED TOTAL | 64 | 23487.44615385 | | | 17.91096657 | | 45.09230769 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| SEX | 1 | 2472.62564103 | 7.71 | 0.0073 | 1 | 2557.24396930 | 7.97 | 0.0064 |
| TREAT | 1 | 1125.05166161 | 3.51 | 0.0658 | 1 | 1125.05166161 | 3.51 | 0.0658 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| SEX | 1 | 2557.24396930 | 7.97 | 0.0064 |
| TREAT | 1 | 1125.05166161 | 3.51 | 0.0658 |

DEPENDENT VARIABLE: _DESC NARRATIVE DESCRIPTION

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 11.62170764 | 3.87390255 | 2.80 | 0.0464 | 0.117657 | 25.1771 |
| ERROR | 63 | 87.15441176 | 1.38340336 | | STD DEV | | _DESC MEAN |
| CORRECTED TOTAL | 66 | 98.78611940 | | | 1.17618169 | | 4.67164179 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| TREAT | 1 | 0.92704533 | 0.67 | 0.4161 | 1 | 0.79651680 | 0.58 | 0.4508 |
| SEX | 1 | 5.49737324 | 3.97 | 0.0505 | 1 | 5.49737324 | 3.97 | 0.0505 |
| TREAT*SEX | 1 | 5.19728907 | 3.76 | 0.0571 | 1 | 5.19728907 | 3.76 | 0.0571 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 0.10875226 | 0.08 | 0.7801 |
| SEX | 1 | 7.65768050 | 5.54 | 0.0218 |
| TREAT*SEX | 1 | 5.19728907 | 3.76 | 0.0571 |

DEPENDENT VARIABLE: _DESC NARRATIVE DESCRIPTION

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 11.62170764 | 3.87390255 | 2.80 | 0.0464 | 0.117657 | 25.1771 |
| ERROR | 63 | 87.15441176 | 1.38340336 | | STD DEV | | _DESC MEAN |
| CORRECTED TOTAL | 66 | 98.77611940 | | | 1.17618169 | | 4.67164179 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| SEX | 1 | 5.62790177 | 4.07 | 0.0480 | 1 | 5.49737324 | 3.97 | 0.0505 |
| TREAT | 1 | 0.79651680 | 0.58 | 0.4508 | 1 | 0.79651680 | 0.58 | 0.4508 |
| TREAT*SEX | 1 | 5.19728907 | 3.76 | 0.0571 | 1 | 5.19728907 | 3.76 | 0.0571 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| SEX | 1 | 7.65768050 | 5.54 | 0.0218 |
| TREAT | 1 | 0.10875226 | 0.08 | 0.7801 |
| TREAT*SEX | 1 | 5.19728907 | 3.76 | 0.0571 |

DEPENDENT VARIABLE: _QUAL NARRATIVE QUALITY

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 58.00906120 | 19.33635373 | 2.56 | 0.0620 | 0.110207 | 20.4278 |
| ERROR | 62 | 468.35457516 | 7.55410605 | | STD DEV | | _QUAL MEAN |
| CORRECTED TOTAL | 65 | 526.36363636 | | | 2.74847340 | | 13.45454545 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| TREAT | 1 | 20.14825175 | 2.67 | 0.1075 | 1 | 22.02686344 | 2.92 | 0.0927 |
| SEX | 1 | 15.16322366 | 2.01 | 0.1616 | 1 | 15.16322366 | 2.01 | 0.1616 |
| TREAT*SEX | 1 | 22.69758579 | 3.00 | 0.0880 | 1 | 22.69758579 | 3.00 | 0.0880 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 33.57190273 | 4.44 | 0.0391 |
| SEX | 1 | 24.23956294 | 3.21 | 0.0781 |
| TREAT*SEX | 1 | 22.69758579 | 3.00 | 0.0880 |

DEPENDENT VARIABLE: _QUAL NARRATIVE QUALITY

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 58.00906120 | 19.33635373 | 2.56 | 0.0620 | 0.110207 | 20.4278 |
| ERROR | 62 | 468.35457516 | 7.55410605 | | STD DEV | | _QUAL MEAN |
| CORRECTED TOTAL | 65 | 526.36363636 | | | 2.74847340 | | 13.45454545 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| SEX | 1 | 13.28461197 | 1.76 | 0.1897 | 1 | 15.16322366 | 2.01 | 0.1616 |
| TREAT | 1 | 22.02686344 | 2.92 | 0.0927 | 1 | 22.02686344 | 2.92 | 0.0927 |
| TREAT*SEX | 1 | 22.69758579 | 3.00 | 0.0880 | 1 | 22.69758579 | 3.00 | 0.0880 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| SEX | 1 | 24.23956294 | 3.21 | 0.0781 |
| TREAT | 1 | 33.57190273 | 4.44 | 0.0391 |
| TREAT*SEX | 1 | 22.69758579 | 3.00 | 0.0880 |

DEPENDENT VARIABLE: _PSIS SPANISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 180.42809302 | 90.21404651 | 9.30 | 0.0003 | 0.227883 | 15.8883 |
| ERROR | 63 | 611.32948274 | 9.70364258 | | STD DEV | | _PSIS MEAN |
| CORRECTED TOTAL | 65 | 791.75757576 | | | 3.11506703 | | 19.60606061 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIS | 1 | 159.01094342 | 16.39 | 0.0001 |
| TREAT | 1 | 21.41714960 | 2.21 | 0.1424 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 1479.05780634 | 493.01928878 | 16.16 | 0.0001 | 0.438832 | 16.1655 |
| ERROR | 62 | 1891.38156760 | 30.50615464 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 65 | 3370.43939394 | | | 5.52323770 | | 10.19696970 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| CHLDAGE | 1 | 531.07300224 | 17.41 | 0.0001 |
| FACTOR1 | 1 | 910.69159276 | 29.85 | 0.0001 |
| TREAT | 1 | 37.29321134 | 1.22 | 0.2731 |

DEPENDENT VARIABLE: _SOC10 OVERALL SOC10 EMOTIONAL RATING

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 1 | 0.74102564 | 0.74102564 | 0.35 | 0.5586 | 0.005459 | 7.7299 |
| ERROR | 63 | 135.01282051 | 2.14306064 | | STD DEV | | _SOC10 MEAN |
| CORRECTED TOTAL | 64 | 135.75384615 | | | 1.46391962 | | 18.93846154 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 0.74102564 | 0.35 | 0.5586 |

AMANECER II AN(C)OVAS, SPANISH-PREFERRING CHILDREN GROUPED BY ENGLISH ENTRY-LEVEL ABILITY

DEPENDENT VARIABLE: _SMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 7.22036866 | 3.61013433 | 6.88 | 0.0028 | 0.265918 | 17.3852 |
| ERROR | 38 | 19.93192120 | 0.52452424 | | STD DEV | | _SMLU MEAN |
| CORRECTED TOTAL | 40 | 27.15218986 | | | 0.72424046 | | 4.16585329 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| CHLDAGE | 1 | 7.09316839 | 13.52 | 0.0007 |
| TREAT | 1 | 0.12710022 | 0.24 | 0.6254 |

DEPENDENT VARIABLE: _EMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 1 | 3.13566501 | 3.13566501 | 6.53 | 0.0145 | 0.140425 | 209.3092 |
| ERROR | 40 | 19.19409138 | 0.47985229 | | STD DEV | | _EMLU MEAN |
| CORRECTED TOTAL | 41 | 22.32975639 | | | 0.69271371 | | 0.33095233 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 3.13566501 | 6.53 | 0.0145 |

DEPENDENT VARIABLE: _SCOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 24.52267497 | 12.26133749 | 2.66 | 0.0650 | 0.084400 | 22.1817 |
| ERROR | 62 | 266.03117118 | 4.29082534 | | STD DEV | | _SCOMP MEAN |
| CORRECTED TOTAL | 64 | 290.55384615 | | | 2.07143075 | | 9.33846154 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| SCOMP | 1 | 22.26949833 | 5.19 | 0.0262 |
| TREAT | 1 | 2.25317664 | 0.53 | 0.4714 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 1 | 3.35664336 | 3.35664336 | 0.70 | 0.4044 | 0.010887 | 26.2424 |
| ERROR | 64 | 304.96153846 | 4.76502404 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 65 | 308.31818182 | | | 2.18289350 | | 8.31818182 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 3.35664336 | 0.70 | 0.4044 |

DEPENDENT VARIABLE: _PSIS SPANISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 94.04302823 | 47.02151412 | 4.55 | 0.0166 | 0.185260 | 16.8414 |
| ERROR | 40 | 413.58487874 | 10.33962197 | | STD DEV | | _PSIS MEAN |
| CORRECTED TOTAL | 42 | 507.62790698 | | | 3.21552826 | | 19.09302326 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIS | 1 | 64.35408499 | 6.22 | 0.0168 |
| TREAT | 1 | 29.68894324 | 2.87 | 0.0979 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 477.73554324 | 238.86777162 | 10.39 | 0.0002 | 0.336331 | 75.0828 |
| ERROR | 41 | 942.69627494 | 22.99259207 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 43 | 1420.43181818 | | | 4.79505918 | | 6.38636364 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIE | 1 | 399.44308452 | 17.37 | 0.0002 |
| TREAT | 1 | 78.29245872 | 3.41 | 0.0722 |

AMANECER I AN(C)OVAS, ENGLISH-PREFERRING

DEPENDENT VARIABLE: _EMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 15.94786195 | 5.31595398 | 8.96 | 0.0001 | 0.414302 | 20.0938 |
| ERROR | 38 | 22.54547247 | 0.59330191 | | STD DEV | | _EMLU MEAN |
| CORRECTED TOTAL | 41 | 38.49333443 | | | 0.77026093 | | 3.83333290 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| EMLU | 1 | 11.38510894 | 19.19 | 0.0001 |
| EDASP | 1 | 4.08373633 | 6.88 | 0.0125 |
| TREAT | 1 | 0.47901668 | 0.81 | 0.3746 |

DEPENDENT VARIABLE: _SCOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 51.96563188 | 25.98281594 | 3.25 | 0.0496 | 0.142800 | 47.5129 |
| ERROR | 39 | 311.93913003 | 7.99843923 | | STD DEV | | _SCOMP MEAN |
| CORRECTED TOTAL | 41 | 363.90476190 | | | 2.82815120 | | 5.95238095 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| FACTOR1 | 1 | 41.24135420 | 5.16 | 0.0288 |
| TREAT | 1 | 10.72427768 | 1.34 | 0.2539 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 1 | 1.86370071 | 1.86370071 | 0.19 | 0.6632 | 0.004671 | 44.6080 |
| ERROR | 41 | 397.11304348 | 9.68568399 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 42 | 398.97674419 | | | 3.11218315 | | 6.97674419 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 1.86370071 | 0.19 | 0.6632 |

DEPENDENT VARIABLE: _EQUAN QUANTITY OF ENGLISH NARRATIVE

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 9079.65944528 | 3026.55314843 | 6.41 | 0.0014 | 0.348123 | 50.7461 |
| ERROR | 36 | 17002.11555472 | 472.28098763 | | STD DEV | | _EQUAN MEAN |
| CORRECTED TOTAL | 39 | 26081.77500000 | | | 21.73202677 | | 42.82500000 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| EQUAN | 1 | 3551.83541868 | 7.52 | 0.0094 | 1 | 2549.53807656 | 5.40 | 0.0259 |
| TREAT | 1 | 966.95177883 | 2.05 | 0.1611 | 1 | 629.46016321 | 1.33 | 0.2559 |
| SEX | 1 | 4560.87224776 | 9.66 | 0.0037 | 1 | 4560.87224776 | 9.66 | 0.0037 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| EQUAN | 1 | 2549.53807656 | 5.40 | 0.0259 |
| TREAT | 1 | 629.46016321 | 1.33 | 0.2559 |
| SEX | 1 | 4560.87224776 | 9.66 | 0.0037 |

DEPENDENT VARIABLE: _DESC NARRATIVE DESCRIPTION

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 26.23022956 | 13.11511478 | 9.68 | 0.0004 | 0.331728 | 36.2134 |
| ERROR | 39 | 52.84119901 | 1.35490254 | | STD DEV | | _DESC MEAN |
| CORRECTED TOTAL | 41 | 79.07142857 | | | 1.16400281 | | 3.21428571 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| DESC | 1 | 22.61398929 | 16.69 | 0.0002 |
| TREAT | 1 | 3.61624027 | 2.67 | 0.1104 |

AMANECER I AN(C)OVAS, ENGLISH-PREFERRING

DEPENDENT VARIABLE: _QUAL NARRATIVE QUALITY

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 142.64106594 | 47.54702198 | 6.49 | 0.0012 | 0.344747 | 23.7653 |
| ERROR | 37 | 271.11503162 | 7.32743329 | | STD DEV | | _QUAL MEAN |
| CORRECTED TOTAL | 40 | 413.75609756 | | | 2.70692321 | | 11.39024390 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| QUAL | 1 | 97.83425468 | 13.35 | 0.0008 | 1 | 67.57999058 | 9.22 | 0.0044 |
| TREAT | 1 | 5.73658435 | 0.78 | 0.3820 | 1 | 3.90335475 | 0.53 | 0.4701 |
| SEX | 1 | 39.07022690 | 5.33 | 0.0266 | 1 | 39.07022690 | 5.33 | 0.0266 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| QUAL | 1 | 67.57999058 | 9.22 | 0.0044 |
| TREAT | 1 | 3.90335475 | 0.53 | 0.4701 |
| SEX | 1 | 39.07022690 | 5.33 | 0.0266 |

DEPENDENT VARIABLE: _PSIS SPANISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 371.62899959 | 185.81449980 | 14.03 | 0.0001 | 0.418367 | 48.9963 |
| ERROR | 39 | 516.65671469 | 13.24760807 | | STD DEV | | _PSIS MEAN |
| CORRECTED TOTAL | 41 | 888.28571429 | | | 3.63972637 | | 7.42857143 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| FACTOR1 | 1 | 371.35882126 | 28.03 | 0.0001 |
| TREAT | 1 | 0.27017833 | 0.02 | 0.8872 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV.

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 573.73156530 | 191.24385510 | 10.53 | 0.0001 | 0.454030 | 27.2388 |
| ERROR | 38 | 689.91129185 | 18.15556031 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 41 | 1263.64285714 | | | 4.26093421 | | 15.64285714 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIE | 1 | 494.12385583 | 27.22 | 0.0001 |
| FACTOR1 | 1 | 72.79308946 | 4.01 | 0.0524 |
| TREAT | 1 | 6.81462000 | 0.38 | 0.5438 |

DEPENDENT VARIABLE: _SPERC PERCPTUAL MOTOR - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 4 | 52.71348293 | 13.17837075 | 12.72 | 0.0001 | 0.592453 | 34.2139 |
| ERROR | 35 | 36.26151707 | 1.03604334 | | STD DEV | | _SPERC MEAN |
| CORRECTED TOTAL | 39 | 88.97500000 | | | 1.01786214 | | 2.97500000 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| SPERC | 1 | 32.58804781 | 31.45 | 0.0001 | 1 | 5.47114644 | 5.28 | 0.0277 |
| FACTOR1 | 1 | 15.18041175 | 14.65 | 0.0005 | 1 | 16.31365571 | 15.75 | 0.0003 |
| TREAT | 1 | 0.69912090 | 0.67 | 0.4169 | 1 | 0.81449635 | 0.79 | 0.3813 |
| SEX | 1 | 4.24590254 | 4.10 | 0.0506 | 1 | 4.24590254 | 4.10 | 0.0506 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| SPERC | 1 | 5.47114644 | 5.28 | 0.0277 |
| FACTOR1 | 1 | 16.31365571 | 15.75 | 0.0003 |
| TREAT | 1 | 0.81449635 | 0.79 | 0.3813 |
| SEX | 1 | 4.24590254 | 4.10 | 0.0506 |

DEPENDENT VARIABLE: _SOCIO OVERALL SOCIO EMOTIONAL RATING

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 62.79195511 | 31.39597755 | 3.99 | 0.0265 | 0.169883 | 14.6889 |
| ERROR | 39 | 306.82709251 | 7.86736135 | | STD DEV | | _SOCIO MEAN |
| CORRECTED TOTAL | 41 | 369.61904762 | | | 2.80486170 | | 19.09523810 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| TREAT | 1 | 8.11790345 | 1.03 | 0.3160 | 1 | 6.55048186 | 0.83 | 0.3671 |
| SEX | 1 | 54.67405165 | 6.95 | 0.0120 | 1 | 54.67405165 | 6.95 | 0.0120 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| | 1 | 6.55048186 | 0.83 | 0.3671 |
| | 1 | 54.67405165 | 6.95 | 0.0120 |

## NUEVAS FRONTERAS, SPANISH-PREFERRING

DEPENDENT VARIABLE: _SMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 4.50167829 | 2.25083914 | 3.52 | 0.0340 | 0.076508 | 19.9999 |
| ERROR | 65 | 58.33786847 | 0.63926904 | | STD DEV | | _SMLU MEAN |
| CORRECTED TOTAL | 67 | 58.83954676 | | | 0.79954302 | | 3.99772691 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| SMLU | 1 | 4.48325296 | 7.01 | 0.0096 |
| TREAT | 1 | 0.01842533 | 0.03 | 0.8656 |

DEPENDENT VARIABLE: _SCOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 31.34021808 | 15.67010904 | 3.00 | 0.0566 | 0.084559 | 26.6484 |
| ERROR | 65 | 339.29213486 | 5.21987900 | | STD DEV | | _SCOMP MEAN |
| CORRECTED TOTAL | 67 | 370.63235294 | | | 2.28470545 | | 8.57352941 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| INCOME | 1 | 30.79047199 | 5.90 | 0.0179 |
| TREAT | 1 | 0.54974609 | 0.11 | 0.7466 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 59.21133145 | 29.60566572 | 3.13 | 0.0498 | 0.082163 | 38.7563 |
| ERROR | 70 | 661.44620280 | 9.44923147 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 72 | 720.65753425 | | | 3.07396023 | | 7.93150685 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| PTEACH | 1 | 29.65881437 | 3.14 | 0.0808 |
| TREAT | 1 | 29.55251707 | 3.13 | 0.0813 |

DEPENDENT VARIABLE: _SQUAN QUANTITY OF SPANISH NARRATIVE

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 1 | 768.72506306 | 768.72506306 | 1.31 | 0.2551 | 0.014860 | 50.1648 |
| ERROR | 87 | 50963.83673469 | 585.79122684 | | STD DEV | | _SQUAN MEAN |
| CORRECTED TOTAL | 88 | 51732.56179775 | | | 24.20312432 | | 48.24719101 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 768.72506306 | 1.31 | 0.2551 |

DEPENDENT VARIABLE: _DESC NARRATIVE DESCRIPTION

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 24.17102368 | 12.08551184 | 8.12 | 0.0006 | 0.158832 | 27.2821 |
| ERROR | 86 | 128.00875160 | 1.48847386 | | STD DEV | | _DESC MEAN |
| CORRECTED TOTAL | 88 | 152.17977528 | | | 1.22003027 | | 4.47191011 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| CHCBAGE | 1 | 22.87315563 | 15.37 | 0.0002 |
| TREAT | 1 | 1.29786805 | 0.87 | 0.3530 |

DEPENDENT VARIABLE: _QUAL NARRATIVE QUALITY

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 115.74255768 | 57.87127884 | 6.13 | 0.0032 | 0.124753 | 24.4398 |
| ERROR | 86 | 812.03272322 | 9.44224097 | | STD DEV | | _QUAL MEAN |
| CORRECTED TOTAL | 88 | 927.77528090 | | | 3.07282296 | | 12.57303371 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| QUAL | 1 | 113.11718079 | 11.98 | 0.0008 |
| TREAT | 1 | 2.62537689 | 0.28 | 0.5993 |

DEPENDENT VARIABLE: _PSIS SPANISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 5 | 451.18342310 | 90.23668462 | 8.90 | 0.0001 | 0.399055 | 17.8273 |
| ERROR | 67 | 679.44671388 | 10.14099573 | | STD DEV | | _PSIS MEAN |
| CORRECTED TOTAL | 72 | 1130.63013699 | | | 3.18449301 | | 17.86301370 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| PSIS | 1 | 308.53098356 | 30.42 | 0.0001 | 1 | 232.74471960 | 22.95 | 0.0001 |
| PTEACH | 1 | 20.36074284 | 2.01 | 0.1611 | 1 | 22.34903051 | 2.20 | 0.1424 |
| TREAT | 1 | 63.94699584 | 6.31 | 0.0145 | 1 | 64.10641347 | 6.32 | 0.0143 |
| SITE | 1 | 0.38430694 | 0.04 | 0.8462 | 1 | 0.38430694 | 0.04 | 0.8462 |
| TREAT*SITE | 1 | 57.96039392 | 5.72 | 0.0196 | 1 | 57.96039392 | 5.72 | 0.0196 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIS | 1 | 232.74471960 | 22.95 | 0.0001 |
| PTEACH | 1 | 22.34903051 | 2.20 | 0.1424 |
| TREAT | 1 | 94.69017038 | 9.34 | 0.0032 |
| SITE | 1 | 4.47266067 | 0.44 | 0.5089 |
| TREAT*SITE | 1 | 57.96039392 | 5.72 | 0.0196 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 5 | 1539.16365059 | 307.83273012 | 11.85 | 0.0001 | 0.488614 | 54.3283 |
| ERROR | 62 | 1610.89517294 | 25.98218021 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 67 | 3150.05882353 | | | 5.09727184 | | 9.38235294 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F | DF | TYPE II SS | F VALUE | PR > F |
|---|---|---|---|---|---|---|---|---|
| FACTOR1 | 1 | 700.70300602 | 26.97 | 0.0001 | 1 | 731.22916060 | 28.14 | 0.0001 |
| INCOME | 1 | 330.14617414 | 12.71 | 0.0007 | 1 | 64.44415284 | 2.48 | 0.1204 |
| TREAT | 1 | 5.10913496 | 0.20 | 0.6590 | 1 | 18.48897095 | 0.71 | 0.4022 |
| SITE | 1 | 500.05629340 | 19.25 | 0.0001 | 1 | 500.05629340 | 19.25 | 0.0001 |
| TREAT*SITE | 1 | 3.14904207 | 0.12 | 0.7289 | 1 | 3.14904207 | 0.12 | 0.7289 |

| SOURCE | DF | TYPE IV SS | F VALUE | PR > F |
|---|---|---|---|---|
| FACTOR1 | 1 | 731.22916060 | 28.14 | 0.0001 |
| INCOME | 1 | 64.44415284 | 2.48 | 0.1204 |
| TREAT | 1 | 21.51619938 | 0.83 | 0.3663 |
| SITE | 1 | 456.34181871 | 17.56 | 0.0001 |
| TREAT*SITE | 1 | 3.14904207 | 0.12 | 0.7289 |

DEPENDENT VARIABLE: _EPERC PERCPTUAL MOTOR - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 48.05693119 | 16.01897706 | 7.80 | 0.0002 | 0.267771 | 68.6200 |
| ERROR | 64 | 131.41365705 | 2.05333839 | | STD DEV | | _EPERC MEAN |
| CORRECTED TOTAL | 67 | 179.47058824 | | | 1.43294745 | | 2.08823529 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| FACTOR1 | 1 | 32.45271138 | 15.80 | 0.0002 |
| INCOME | 1 | 15.51886116 | 7.56 | 0.0078 |
| TREAT | 1 | 0.08535864 | 0.04 | 0.8391 |

DEPENDENT VARIABLE: _SOCIO OVERALL SOCIO EMOTIONAL RATING

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 1 | 2.52785310 | 2.52785310 | 0.20 | 0.6537 | 0.002351 | 18.9035 |
| ERROR | 86 | 1072.56305599 | 12.47166344 | | STD DEV | | _SOCIO MEAN |
| CORRECTED TOTAL | 87 | 1075.09090909 | | | 3.53152424 | | 18.68181818 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| TREAT | 1 | 2.52785310 | 0.20 | 0.6537 |

NUEVAS FRONTERAS I AN(C)OVAS SPANISH-PREFERRING CHILDREN GROUPED BY ENGLISH ENTRY-LEVEL ABILITY

DEPENDENT VARIABLE: _SMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 4.85657813 | 2.42828908 | 6.34 | 0.0040 | 0.236082 | 15.7917 |
| ERROR | 41 | 15.71501624 | 0.38329308 | | STD DEV | | _SMLU MEAN |
| CORRECTED TOTAL | 43 | 20.57159439 | | | 0.61910668 | | 3.92045420 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| EDASP | 1 | 2.52000704 | 6.57 | 0.0141 |
| TREAT | 1 | 2.33657111 | 6.10 | 0.0178 |

DEPENDENT VARIABLE: _SCOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 54.70924648 | 18.23641549 | 3.16 | 0.0335 | 0.174120 | 28.3535 |
| ERROR | 45 | 259.49483516 | 5.76655189 | | STD DEV | | _SCOMP MEAN |
| CORRECTED TOTAL | 48 | 314.20408163 | | | 2.40136459 | | 8.46938776 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| CHLDAGE | 1 | 20.91713817 | 3.63 | 0.0632 |
| PRESENT | 1 | 32.55352267 | 5.65 | 0.0218 |
| TREAT | 1 | 1.23856564 | 0.21 | 0.6453 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 106.62754119 | 35.54251373 | 5.62 | 0.0030 | 0.325186 | 34.5282 |
| ERROR | 35 | 221.26989471 | 6.32199699 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 38 | 327.89743590 | | | 2.51435817 | | 7.28205128 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| CHLDAGE | 1 | 56.25386300 | 8.90 | 0.0052 |
| PTEACH | 1 | 18.57232013 | 2.94 | 0.0954 |
| TREAT | 1 | 31.80135806 | 5.03 | 0.0313 |

DEPENDENT VARIABLE: _PSIS SPANISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 303.62854290 | 151.81427145 | 12.21 | 0.0001 | 0.323723 | 19.6329 |
| ERROR | 51 | 634.29738303 | 12.43720359 | | STD DEV | | _PSIS MEAN |
| CORRECTED TOTAL | 53 | 937.92592593 | | | 3.52664197 | | 17.96296296 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIS | 1 | 303.32157127 | 24.39 | 0.0001 |
| TREAT | 1 | 0.30697163 | 0.02 | 0.8759 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 448.29663285 | 149.43221095 | 9.03 | 0.0001 | 0.422571 | 64.4118 |
| ERROR | 37 | 612.58141593 | 16.55625448 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 40 | 1060.87804878 | | | 4.06893776 | | 6.31707317 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| PSIE | 1 | 240.39112725 | 14.52 | 0.0005 |
| FACTOR1 | 1 | 198.67809144 | 12.01 | 0.0014 |
| TREAT | 1 | 9.02741416 | 0.55 | 0.4649 |

NUEVAS FRONTERAS II AN(C)OVAS, ENGLISH-PREFERRING CHILDREN

DEPENDENT VARIABLE: _EMLU

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 6.74354573 | 3.37177287 | 4.02 | 0.0261 | 0.174622 | 24.2104 |
| ERROR | 38 | 31.87449859 | 0.83880259 | | STD DEV | | _EMLU MEAN |
| CORRECTED TOTAL | 40 | 38.61804432 | | | 0.91586167 | | 3.78292640 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| EMLU | 1 | 6.42427474 | 7.66 | 0.0087 |
| TREAT | 1 | 0.31927099 | 0.38 | 0.5409 |

DEPENDENT VARIABLE: _SCOMP COMPREHENSION - SPANISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 143.71034238 | 47.90344746 | 4.90 | 0.0063 | 0.308320 | 58.7049 |
| ERROR | 33 | 322.39776573 | 9.76962926 | | STD DEV | | _SCOMP MEAN |
| CORRECTED TOTAL | 36 | 466.10810811 | | | 3.12564062 | | 5.32432432 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| SCOMP | 1 | 46.97413226 | 4.81 | 0.0355 |
| INCOME | 1 | 96.61253486 | 9.89 | 0.0035 |
| TREAT | 1 | 0.12367526 | 0.01 | 0.9111 |

DEPENDENT VARIABLE: _ECOMP COMPREHENSION - ENGLISH

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 3 | 97.91877875 | 32.63959292 | 5.25 | 0.0041 | 0.298488 | 28.5619 |
| ERROR | 37 | 230.13000174 | 6.21972978 | | STD DEV | | _ECOMP MEAN |
| CORRECTED TOTAL | 40 | 328.04878049 | | | 2.49393861 | | 8.73170732 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| ECOMP | 1 | 36.93921468 | 5.94 | 0.0197 |
| CHLDAGE | 1 | 29.95760576 | 4.82 | 0.0345 |
| TREAT | 1 | 31.02194831 | 4.99 | 0.0317 |

DEPENDENT VARIABLE: _EQUAN QUANTITY OF ENGLISH NARRATIVE

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 9819.52513318 | 4909.76256659 | 14.19 | 0.0001 | 0.427490 | 47.1390 |
| ERROR | 38 | 13150.66998877 | 346.07026286 | | STD DEV | | _EQUAN MEAN |
| CORRECTED TOTAL | 40 | 22970.19512195 | | | 18.60296382 | | 39.46341463 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| EQUAN | 1 | 9769.28510018 | 28.23 | 0.0001 |
| TREAT | 1 | 50.24003300 | 0.15 | 0.7053 |

## NUEVAS FRONTERAS II AN(C)OVAS, ENGLISH-PREFERRING CHILDREN

DEPENDENT VARIABLE: _DESC NARRATIVE DESCRIPTION

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 2.89331349 | 1.44665675 | 1.91 | 0.1614 | 0.091532 | 22.2760 |
| ERROR | 38 | 28.71644261 | 0.75569586 | | STD DEV | | _DESC MEAN |
| CORRECTED TOTAL | 40 | 31.60975610 | | | 0.86930769 | | 3.90243902 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| DESC | 1 | 2.81666667 | 3.73 | 0.0610 |
| TREAT | 1 | 0.07664682 | 0.10 | 0.7519 |

DEPENDENT VARIABLE: _QUAL NARRATIVE QUALITY

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 87.19844400 | 43.59922200 | 4.52 | 0.0173 | 0.192232 | 26.0890 |
| ERROR | 38 | 366.41131210 | 9.64240295 | | STD DEV | | _QUAL MEAN |
| CORRECTED TOTAL | 40 | 453.60975610 | | | 3.10522188 | | 11.90243902 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| QUAL | 1 | 85.00833333 | 8.82 | 0.0051 |
| TREAT | 1 | 2.19011066 | 0.23 | 0.6364 |

DEPENDENT VARIABLE: _PSIE ENGLISH PSI TOTAL-CONCEPT DEV

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 84.78550187 | 42.39275094 | 4.37 | 0.0197 | 0.186873 | 14.9609 |
| ERROR | 38 | 369.01937618 | 9.71103622 | | STD DEV | | _PSIE MEAN |
| CORRECTED TOTAL | 40 | 453.80487805 | | | 3.11625355 | | 20.82926829 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| CHLDAGE | 1 | 73.80058493 | 7.60 | 0.0089 |
| TREAT | 1 | 10.98891694 | 1.13 | 0.2942 |

DEPENDENT VARIABLE: _SOCIO OVERALL SOCIO EMOTIONAL RATING

| SOURCE | DF | SUM OF SQUARES | MEAN SQUARE | F VALUE | PR > F | R-SQUARE | C.V. |
|---|---|---|---|---|---|---|---|
| MODEL | 2 | 130.69810909 | 65.34905455 | 3.71 | 0.0337 | 0.163472 | 21.3673 |
| ERROR | 38 | 668.81408603 | 17.60037068 | | STD DEV | | _SOCIO MEAN |
| CORRECTED TOTAL | 40 | 799.51219512 | | | 4.19527957 | | 19.63414634 |

| SOURCE | DF | TYPE I SS | F VALUE | PR > F |
|---|---|---|---|---|
| PTEACH | 1 | 114.00313814 | 6.48 | 0.0151 |
| TREAT | 1 | 16.69497095 | 0.95 | 0.3362 |

# APPENDIX G

## RELIABILITY COEFFICIENTS FOR SOME MOTHER INTERVIEW MEASURES ACROSS AND BY TREATMENT CLASSIFICATION AT PRE- AND POSTTEST

RELIABILITY COEFFICIENTS FOR SOME MOTHER INTERVIEW MEASURES ACROSS AND BY TREATMENT CLASSIFICATION AT PRE- AND POSTTEST

| | TREATMENT CLASSIFICATION | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | OVERALL | | EXPERIMENTAL | | COMPARISON | | STAY-AT-HOME | |
| | Pre | Post | Pre | Post | Pre | Post | Pre | Post |
| Scoring Variables | | | | | | | | |
| CSPAN | .91 | .92 | .87 | .90 | .93 | .94 | .89 | .89 |
| CENG | .94 | .94 | .91 | .90 | .94 | .96 | .92 | .91 |
| MTCH | .76 | .88 | .80 | .88 | .72 | .88 | .79 | .86 |
| MSTCH/METCH[1] | .96 | .95 | .95 | .95 | .96 | .96 | .96 | .93 |
| PLAY | .66 | .69 | .69 | .63 | .62 | .73 | .71 | .67 |
| BLING | .89 | .77 | .93 | .87 | .90 | .73 | .84 | .74 |
| SLFCON | .85 | .80 | .85 | .61 | .85 | .83 | .84 | .81 |

[1]This scoring measure supplies identical information and consequently has the same reliability coefficient.

# APPENDIX H

## PRE- AND POSTTEST CORRELATION COEFFICIENTS ON FOURTEEN ITEMS OF THE INTERVIEWS OF SAMPLE MOTHERS

# PRE- AND POSTTEST CORRELATION COEFFICIENTS ON FOURTEEN ITEMS OF THE INTERVIEWS OF SAMPLE MOTHERS

| | CSPAN | CENG | MSTALK | MSTCH | METALK | METCH | MTCH | PLAY | SCHLJOB | CAREER | BLING | SLFCON | MEDASP | INCOME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CSPAN | | -51 | 65 | 54 | -43 | -54 | -12 | -07 | 24 | -02 | 34 | 01 | 12 | 06 |
| CENG | -48 | | -37 | -67 | 69 | 67 | 28 | 20 | -23 | 03 | -22 | 13 | -02 | 01 |
| MSTALK | 63 | -33 | | 50 | -36 | -50 | -08 | -05 | 22 | 04 | 28 | 04 | -01 | 03 |
| MSTCH | 55 | -66 | 46 | | -71 | -1.0 | 03 | -09 | 23 | -14 | 26 | 01 | -05 | -03 |
| METALK | -42 | 65 | -31 | -74 | | 71 | 29 | 15 | -26 | 08 | -22 | 07 | 01 | 07 |
| METCH | -55 | 66 | -46 | -1.0 | 74 | | 03 | 09 | -23 | 14 | -26 | -01 | 05 | 03 |
| MTCH | -11 | 15 | -17 | 01 | 13 | -01 | | 35 | -0- | -06 | -03 | 07 | 07 | 04 |
| PLAY | -07 | 20 | -02 | 06 | 09 | -06 | 29 | | -06 | -01 | -06 | 07 | 12 | 08 |
| SCHLJOB | 16 | -18 | 19 | 13 | -13 | -13 | -02 | -0- | | -21 | 17 | 11 | -10 | -05 |
| CAREER | -03 | -01 | -07 | 04 | -07 | -04 | 05 | -01 | -25 | | 02 | -06 | 01 | 04 |
| BLING | 29 | -17 | 25 | 12 | -06 | -12 | -11 | -01 | 14 | -12 | | 44 | 15 | -10 |
| SLFCON | -0- | 10 | -03 | -23 | 20 | 23 | 01 | 04 | 03 | -09 | 41 | | 19 | -03 |
| MEDASP | 16 | 06 | 05 | 09 | 06 | -09 | -01 | 19 | -01 | 03 | 07 | 07 | | -01 |
| INCOME | 06 | 09 | 05 | -11 | 10 | 11 | 02 | -03 | -12 | -04 | -10 | -06 | 02 | |

* Upper right-hand triangle depicts correlations among measures at pretest.

** Lower left-hand triangle depicts correlations among measures at posttest.

# APPENDIX I

## EXAMPLES OF FIELDNOTES AND CODING UNDERTAKEN DURING PARALLEL SUBSAMPLE OBSERVATIONS BY FIELDWORKER AND FIELD WORK SUPERVISOR AT TWO SITES

# EXAMPLES OF FIELDNOTES AND CODING UNDERTAKEN DURING PARALLEL SUBSAMPLE OBSERVATIONS BY FIELDWORKER AND FIELD WORK SUPERVISOR IN TWO SITES



## Supervisor

| | | |
|---|---|---|
| Snack | 9:54 | Diana - playing with paper cups says "I got it" I got..." then sings,"I got more than you."(2x). She looks at Armacela who asks T where the aide is in Sp. The teacher ignores the question while asking the group one of her own,"¿Quienes son los que quieren leche?" Diana responds "Yo." The teacher asks a question of another child in Spanish while Diana looks on. She then looks at Herbert at the next table and sings "I got milk, I got milk" showing her glass to Herbert. |
| 5.7.2/5.7.10, 5.2/5.7.10 5.7.2/5.7.10 | | |
| 5.4 | | |
| 5.1 | | |
| 5.7.2/5.7.10 | 9:57 | |
| Large Group | | Felipe 11:33 Sits on the rug, glances at (Obs) and brushes back his hair with a brush while mouthing a few words. Angie says to him, "Felipe, tu tambien canta." He then sings loudly. When the song changes to "La Casita" he sings and forces his index fingers into eaves as called for. Similarly he makes the motions of waves with his hands together with the other children while singing "suben y bajan las olas del mar." Felipe questions Angie "¿Todavia van a hacer, verdad?" He then moves forward with the other children imitating a frog or playing in the sand in response to a new song. He says something to Angie which begins "Miss Yo..." One of the kids asks for "Elena la ballena" which is put on. Felipe doesn't take part actively but simply mouths a few of the words while scratching his chest and looking around. |
| 5.4/8.2 | | |
| 5.1/7.14 | | |
| 5.1 | | |
| 6.5.1 | | |
| 5.7.1/5.7.7/5.7.13 | | |
| 6.5.3 | | |
| 5.3 | | |
| 7.16 | | |
| 5.4/8.2 | 11:38 | Teacher says "Felipe canta." |

## PR (ALERTA)

| Name | Time | Context: Snack-time |
|---|---|---|
| Diana | 9:54 | The child had been served snack. In a singing tone she said, (crackers, juice, milk) "I got it, I got..." "I got more than you," "I got more than you" (she said this several times). M.C. said something in Spanish. She said, "Quienes son los que quieren leche?" Diana said, "Yo" "I got milk, I got milk." She showed him her glass. She observed Robin. |
| 5.7.2/5.7.10 5.2/5.7.10, 5.7 | 5.7.10 | |
| | 7.10 | |
| | 5.4 | |
| | 5.1 | |
| 5.7.2/5.7.10 To Herbert | | |
| | 9:57 | |

## PR (NUEVAS FRONTERAS)

| | |
|---|---|
| | Felipe: 11:33 A.M. - 11:38 A.M. |
| 5.1 | Felipe's on his knees singing. Angie tells him, |
| 5.4/8.2,7.14 | "Felipe, tu también canta." He sings louder. He has his hands clasped in front of him. He looks at the girls to his left. He has his hands behind his head and half yawns. He pushes his ears back the wrong way, I think, against his head. He makes a techo with his hands and sings "La casita." He looks at Tony when the lattor says, "Mira Robert." He puts his hands down and looks ahead as the song ends. He says something. The next song is "Las olas del mar." Felipe moves both hands and arms and then only one in imitation of the waves. He says something. He's not singing for a while and then begins again. He watches his hand as he moves it. Now he switches to his left hand. He sings. He apparently says that no le va a hacer, ¿verdad? ... He moves his hands and arms out on the rug like the others imitating a frog. I can't tell whether he's singing or not. He hits at Aviel and then sits back, not participating anymore. He's sitting on his knees. He rubs his chin as the song ends. He says "Miss Yo." He sings "Elena la ballena." He's sitting on his knees with his hands together. He looks towards the girls to the left again. He sings and then scratches his neck and yawns. He puts his hands in his lap. He's not singing now. Angie says, "Felipe, canta." He sings loud and then stops again. The song ends. Angie announces that they're going to sing "A la derecha." Felipe stretches. |
| 5.7.1/5.7.23 | |
| 6.5.1 | |
| 7.2/7.1 | |
| 5.7.1/5.7.7/5.7.13 | |
| 6.5.3 | |
| 5.3 | |
| 7.16 | |
| 5.4/8.2 | |

# APPENDIX J

## UNADJUSTED MEAN VALUES ON SELECTED CONSTRUCTS FOR SPANISH-PREFERRING EXPERIMENTAL HEAD START AND COMPARISON CHILDREN GROUPED BY ENGLISH ENTRY LEVEL ABILITY AT EACH OF EIGHT SITES

UNADJUSTED MEAN VALUES ON SELECTED CONSTRUCTS FOR SPANISH-PREFERRING EXPERIMENTAL HEAD START AND COMPARISON CHILDREN GROUPED BY ENGLISH ENTRY LEVEL ABILITY AT EACH OF EIGHT SITES[1]

SPANISH

| | LANGUAGE ACQUISITION | | | | LANGUAGE COMPREHENSION | | | | CONCEPT DEVELOPMENT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $SP_1$ | | $SP_2$ | | $SP_1$ | | $SP_2$ | | $SP_1$ | | $SP_2$ | |
| | (Pre) X | (Post) X | (Pre) X | (Post) X | (Pre) X | (Post) X | (Pre) X | (Post) X | (Pre) X | (Post) X | (Pre) X | (Post) X |
| UN MARCO ABIERTO | | | | | | | | | | | | |
| Site I - Experimental | 3.29 N=15 | 4.23 | 3.26 N=5 | 4.56 | 4.40 N=10 | 8.50 | 7.60 N=10 | 9.80 | 10.33 N=15 | 19.53 | 15.20 N=5 | 22.00 |
| Site I - Comparison$_{HS}$ | 3.58 N=16 | 3.83 | 3.37 N=7 | 3.96 | 6.11 N=9 | 8.56 | 7.57 N=14 | 9.14 | 11.75 N=16 | 18.25 | 13.00 N=7 | 20.14 |
| Site II - Experimental | 4.03 N=9 | 4.41 | 3.41 N=7 | 4.47 | 5.20 N=5 | 6.20 | 6.27 N=11 | 9.64 | 10.38 N=8 | 14.50 | 13.75 N=8 | 16.50 |
| Site II - Comparison$_{HS}$ | 3.50 N=7 | 4.71 | 3.00 N=1 | 4.00 | 8.00 N=2 | 10.00 | 7.00 N=6 | 8.67 | 12.43 N=7 | 13.86 | 8.00 N=1 | 12.00 |
| Site II - Comparison$_{SH}$ | 3.13 N=6 | 4.18 | 3.65 N=4 | 3.80 | 8.50 N=2 | 9.00 | 5.25 N=8 | 6.88 | 8.00 N=5 | 13.20 | 13.00 N=5 | 17.00 |
| AMANECER | | | | | | | | | | | | |
| Site I - Experimental | 3.12 N=6 | 3.42 | 4.27 N=3 | 2.97 | - N=0 | - | 7.90 N=10 | 7.70 | 15.67 N=3 | 11.33 | 9.43 N=7 | 9.57 |
| Site I - Comparison$_{SH}$ | 2.95 N=4 | 3.42 | 1.80 N=1 | 2.70 | 9.50 N=2 | 5.00 | 8.33 N=3 | 6.00 | 10.00 N=1 | 3.00 | 11.25 N=4 | 9.00 |
| Site II - Experimental | 4.02 N=19 | 4.34 | 3.39 N=21 | 4.40 | - N=0 | - | 9.65 N=40 | 9.47 | 16.36 N=22 | 20.14 | 17.67 N=18 | 20.44 |
| Site II - Comparison$_{HS}$ | 3.70 N=22 | 4.02 | 3.90 N=4 | 4.52 | 11.00 N=1 | 7.00 | 9.76 N=25 | 9.12 | 14.67 N=21 | 18.00 | 18.80 N=5 | 21.00 |
| Site II - Comparison$_{SH}$ | 3.50 N=7 | 3.93 | 3.65 N=2 | 3.05 | - N=0 | - | 10.56 N=9 | 7.89 | 16.33 N=6 | 17.83 | 17.67 N=3 | 15.33 |
| ALERTA | | | | | | | | | | | | |
| Site I - Experimental | 3.85 N=4 | 4.50 | 3.67 N=3 | 4.00 | 7.00 N=3 | 8.67 | 8.50 N=4 | 9.75 | 11.67 N=3 | 17.33 | 15.50 N=4 | 17.75 |
| Site I - Comparison$_{SH}$ | 3.50 N=1 | 3.90 | 5.20 N=2 | 4.55 | 2.00 N=1 | 9.00 | 9.33 N=3 | 10.00 | 13.00 N=1 | 10.00 | 15.67 N=3 | 14.33 |
| Site II - Experimental | - N=0 | - | 4.05 N=4 | 4.32 | - N=0 | - | 5.75 N=4 | 8.25 | - N=0 | - | 10.25 N=4 | 8.75 |
| Site II - Comparison$_{SH}$ | 2.30 N=2 | 4.00 | - N=0 | - | 9.00 N=2 | 2.00 | 11.00 N=1 | 9.00 | 11.00 N=2 | 12.50 | - N=0 | - |
| NUEVAS FRONTERAS | | | | | | | | | | | | |
| Site I - Experimental | 3.39 N=28 | 4.01 | 3.70 N=2 | 4.50 | 4.67 N=3 | 7.67 | 6.93 N=27 | 8.74 | 13.96 N=25 | 18.60 | 14.40 N=5 | 20.20 |
| Site I - Comparison$_{HS}$ | 3.26 N=31 | 3.92 | 3.17 N=3 | 4.10 | 7.13 N=8 | 8.38 | 6.81 N=26 | 8.31 | 11.86 N=29 | 17.41 | 12.00 N=5 | 17.60 |
| Site II - Experimental | 3.40 N=6 | 3.58 | 4.35 N=4 | 4.30 | 7.00 N=2 | 5.00 | 7.88 N=8 | 10.00 | 10.17 N=6 | 19.00 | 15.50 N=4 | 20.25 |
| Site II - Comparison$_{HS}$ | 3.67 N=12 | 4.34 | 3.37 N=3 | 3.43 | 7.33 N=9 | 8.78 | 8.00 N=6 | 10.00 | 12.64 N=14 | 16.07 | 8.00 N=1 | 17.00 |

Key to Abbreviations:

$SP_1$ = Spanish-preferring Group$_1$

$SP_2$ = Spanish-preferring Group$_2$

Comparison$_{HS}$ = Comparison Head Start Group

Comparison$_{SH}$ = Comparison Stay-at-Home Group

[1]Children were grouped by English entry level ability as follows: Spanish-preferring Group$_1$ includes all children who showed little or no ability on the pretest measures (EMLU = 0, PSIE $\leq$ 3, ECOMP $\leq$ 3). Spanish-preferring Group$_2$ includes all children who demonstrated some ability in English on the pretest measures (EMLU > 0, PSIE > 3, ECOMP > 3).

UNADJUSTED MEAN VALUES ON SELECTED CONSTRUCTS FOR SPANISH-PREFERRING EXPERIMENTAL HEAD START AND COMPARISON CHILDREN GROUPED BY ENGLISH ENTRY LEVEL ABILITY AT EACH OF EIGHT SITES[1]

ENGLISH

| | LANGUAGE ACQUISITION | | | | LANGUAGE COMPREHENSION | | | | CONCEPT DEVELOPMENT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $SP_1$ | | $SP_2$ | | $SP_1$ | | $SP_2$ | | $SP_1$ | | $SP_2$ | |
| | (Pre) X | (Post) $\bar{X}$ | (Pre) X | (Post) $\bar{X}$ | (Pre) X | (Post) $\bar{X}$ | (Pre) X | (Post) $\bar{X}$ | (Pre) X | (Post) $\bar{X}$ | (Pre) X | (Post) $\bar{X}$ |
| UN MARCO ABIERTO | | | | | | | | | | | | |
| Site I - Experimental | 0.00 N=15 | 1.47 | 2.72 N=5 | 4.14 | 0.50 N=10 | 7.70 | 7.80 N=10 | 9.30 | 0.87 N=15 | 15.67 | 8.40 N=5 | 19.40 |
| Site I - Comparison$_{HS}$ | 0.00 N=16 | 0.99 | 2.26 N=7 | 3.50 | 0.22 N=9 | 6.67 | 7.07 N=14 | 7.86 | 0.63 N=16 | 11.81 | 8.00 N=7 | 17.14 |
| Site II - Experimental | 0.00 N=9 | 2.21 | 2.36 N=7 | 3.81 | 1.80 N=5 | 6.40 | 5.45 N=11 | 6.91 | 0.71 N=7 | 6.86 | 12.00 N=8 | 17.38 |
| Site II - Comparison$_{HS}$ | 0.00 N=7 | 0.61 | 2.00 N=1 | 1.50 | 1.50 N=2 | 6.00 | 5.33 N=6 | 3.33 | 0.57 N=7 | 2.71 | 5.00 N=1 | 7.00 |
| Site II - Comparison$_{SH}$ | 0.00 N=6 | 0.63 | 3.42 N=4 | 4.10 | 0.50 N=2 | 9.00 | 6.38 N=8 | 7.50 | 1.00 N=5 | 7.00 | 13.00 N=5 | 17.80 |
| AMANECER | | | | | | | | | | | | |
| Site I - Experimental | 0.00 N=6 | 2.35 | 2.02 N=4 | 2.57 | - N=0 | - | 8.00 N=10 | 7.10 | 2.00 N=3 | 9.00 | 10.71 N=7 | 9.86 |
| Site I - Comparison$_{SH}$ | 0.00 N=4 | 1.47 | 0.30 N=1 | 0.90 | 1.50 N=2 | 3.50 | 5.67 N=3 | 5.33 | 3.00 N=1 | 3.00 | 9.50 N=4 | 9.25 |
| Site II - Experimental | 0.00 N=19 | 0.33 | 1.73 N=21 | 2.40 | - N=0 | - | 8.55 N=20 | 8.50 | 1.18 N=22 | 8.50 | 11.89 N=18 | 17.28 |
| Site II - Comparison$_{HS}$ | 0.00 N=23 | 0.08 | 1.73 N=3 | 2.00 | - N=0 | - | 9.08 N=26 | 8.04 | 0.59 N=22 | 4.27 | 11.00 N=5 | 16.40 |
| Site II - Comparison$_{SH}$ | 0.00 N=7 | 0.23 | 2.90 N=2 | 3.65 | - N=0 | - | 9.11 N=9 | 7.89 | 0.67 N=6 | 3.33 | 14.00 N=3 | 10.00 |
| ALERTA | | | | | | | | | | | | |
| Site I - Experimental | 0.00 N=4 | 3.12 | 2.90 N=3 | 3.90 | 1.00 N=2 | 7.00 | 8.50 N=4 | 9.75 | 0.67 N=3 | 16.00 | 12.75 N=4 | 17.00 |
| Site I - Comparison$_{SH}$ | 0.00 N=1 | 0.00 | 2.70 N=3 | 3.60 | - N=0 | - | 9.00 N=3 | 8.67 | 0.00 N=1 | 0.00 | 9.67 N=3 | 15.33 |
| Site II - Experimental | - N=0 | - | 3.47 N=4 | 3.87 | - N=0 | - | 5.25 N=4 | 9.00 | - N=0 | - | 8.50 N=4 | 12.00 |
| Site II - Comparison$_{SH}$ | 0.00 N=2 | 0.00 | - N=0 | - | 0.00 N=1 | 0.00 | 5.00 N=1 | 0.00 | 0.00 N=2 | 0.50 | - N=0 | - |
| NUEVAS FRONTERAS | | | | | | | | | | | | |
| Site I - Experimental | 0.00 N=28 | 0.64 | 1.50 N=1 | 3.60 | 3.00 N=3 | 10.00 | 6.00 N=27 | 8.15 | 0.64 N=25 | 7.80 | 9.00 N=5 | 16.80 |
| Site I - Comparison$_{HS}$ | 0.00 N=31 | 0.12 | 2.30 N=3 | 2.00 | 2.63 N=8 | 7.63 | 5.77 N=26 | 6.48 | 0.38 N=29 | 5.21 | 9.40 N=5 | 15.60 |
| Site II - Experimental | 0.00 N=6 | 1.73 | 2.57 N=3 | 3.87 | 0.50 N=2 | 6.00 | 6.63 N=8 | 10.00 | 0.83 N=6 | 12.00 | 13.50 N=4 | 21.75 |
| Site II - Comparison$_{HS}$ | 0.00 N=12 | 1.23 | 3.00 N=3 | 3.27 | 1.67 N=9 | 6.44 | 6.50 N=6 | 11.17 | 0.43 N=14 | 10.64 | 13.00 N=1 | 18.00 |

Key to Abbreviations:

$SP_1$ = Spanish-preferring Group$_1$

$SP_2$ = Spanish-preferring Group$_2$

Comparison$_{HS}$ = Comparison Head Start Group

Comparison$_{SH}$ = Comparison Stay-at-Home Group

[1]Children were grouped by English entry level ability as follows: Spanish-preferring Group$_1$ includes all children who showed little or no ability on the pretest measures (EMLU = 0, PSIE $\leq$ 3, ECOMP $\leq$ 3). Spanish-preferring Group$_2$ includes all children who demonstrated some ability in English on the pretest measures (EMLU > 0, PSIE > 3, ECOMP > 3).

# APPENDIX K

## COMPARISON OF OBSERVED PRACTICE IN DIFFERENT AREAS OF LANGUAGE, CONCEPT, AND SOCIOEMOTIONAL DEVELOPMENT BY ALL SUBSAMPLE CHILDREN FROM THE FIRST TO THE THIRD OBSERVATION PERIOD.

COMPARISON OF OBSERVED PRACTICE IN DIFFERENT AREAS OF LANGUAGE, CONCEPT, AND SOCIOEMOTIONAL DEVELOPMENT BY ALL SUBSAMPLE CHILDREN FROM THE FIRST TO THE THIRD OBSERVATION PERIOD.[1]

| | Spanish - Preferring Children | | English - Preferring Children | |
|---|---|---|---|---|
| | Spanish | English | Spanish | English |
| **LANGUAGE DEVELOPMENT** | | | | |
| LINGUISTIC COMPETENCE | % | % | % | % |
| Complete Sentences | 50 | 54 | 18 | 64 |
| Incomplete Sentences | 46 | 69 | 41 | 32 |
| Plural Nouns | 50 | 50 | 5 | 45 |
| Negative Form | 58 | 42 | 9 | 64 |
| Interrogative Form | 58 | 46 | 14 | 41 |
| Present Tense | 54 | 46 | 14 | 55 |
| Past Tense | 50 | 27 | 5 | 68 |
| Future Tense | 38 | 38 | 9 | 50 |
| Incorrect Grammatical Usage | 46 | 53 | 9 | 68 |
| Diversification | 81 | 92 | 41 | 86 |
| FUNCTIONAL COMPETENCE | | | | |
| Description of Self | 19 | 19 | 0 | 36 |
| Description of Others | 15 | 12 | 5 | 27 |
| Description of Own Feelings | 12 | 8 | 0 | 32 |
| Telling of a Story/Event | 4 | 4 | 5 | 5 |
| Verbal Instruction | 38 | 31 | 5 | 50 |
| Diversification | 38 | 46 | 9 | 64 |

| | Spanish | English | NLS | Overall | Spanish | English | NLS | Overall |
|---|---|---|---|---|---|---|---|---|
| **CONCEPT DEVELOPMENT** | | | | | | | | |
| Visual Discrimination | 35 | 73 | 4 | 50 | 9 | 41 | 14 | 36 |
| Seriation/Sequencing | 19 | 27 | 38 | 54 | 5 | 23 | 41 | 41 |
| Matching/Classification/ Grouping of Objects | 0 | 8 | 27 | 35 | 0 | 23 | 36 | 55 |
| Spatial and Time Relations | 8 | 12 | 8 | 19 | 0 | 5 | 14 | 18 |
| Symbolic Representation | 8 | 19 | 73 | 65 | 0 | 14 | 55 | 55 |
| Utilization of Objects | 19 | 12 | 4 | 31 | 0 | 23 | 0 | 23 |
| Overall | 38 | 77 | 81 | NA | 9 | 50 | 59 | NA |

| | Appropriate | Inappropriate | Appropriate | Inappropriate |
|---|---|---|---|---|
| **SOCIOEMOTIONAL DEVELOPMENT** | | | | |
| School Readiness | 46 | 46 | 59 | 45 |
| Self-Esteem | 42 | 19 | 27 | 9 |
| Motivation | 58 | 19 | 50 | 14 |
| Overall | 42 | 35 | 27 | 50 |

[1]Indicates the percentage of subsample children who increased the relative frequency of practice in an area from the first to the third observation period.

# APPENDIX L

## BACKGROUND CHARACTERISTICS OF SAMPLE FAMILIES

# BACKGROUND CHARACTERISTICS OF SAMPLE FAMILIES

| | UN MARCO ABIERTO | | AMANECER | | ALERTA | | NUEVAS FRONTERAS | |
|---|---|---|---|---|---|---|---|---|
| | I | II | I | II | I | II | I | II |
| **ETHNICITY** | | | | | | | | |
| EXPERIMENTAL | | | | | | | | |
| Hispanic | 27 | 28 | 26 | 33 | 14 | 7 | 21 | 19 |
| Anglo | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 9 |
| Black | 1 | 0 | 0 | 1 | 5 | 3 | 0 | 1 |
| Other | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| COMPARISON | | | | | | | | |
| Hispanic | 27 | 17 | 23 | 29 | 0 | 4 | 28 | 26 |
| Anglo | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 3 |
| Black | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 1 |
| Other | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **OCCUPATION OF RESPONDENT** | | | | | | | | |
| EXPERIMENTAL | | | | | | | | |
| Professional/Managerial | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 2 |
| Clerical/Sales | 1 | 3 | 1 | 17 | 0 | 3 | 9 | 0 |
| Crafts | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Skilled/semi-skilled laborer | 0 | 4 | 2 | 3 | 1 | 0 | 0 | 1 |
| Service | 4 | 2 | 7 | 6 | 1 | 0 | 1 | 3 |
| No Response | 22 | 23 | 17 | 5 | 18 | 8 | 10 | 23 |
| COMPARISON | | | | | | | | |
| Professional/Managerial | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| Clerical/Sales | 2 | 0 | 0 | 11 | 0 | 0 | 3 | 2 |
| Crafts | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Skilled/semi-skilled laborer | 2 | 2 | 0 | 2 | 0 | 0 | 1 | 2 |
| Service | 2 | 1 | 4 | 12 | 0 | 0 | 7 | 2 |
| No Response | 21 | 14 | 20 | 4 | 6 | 3 | 17 | 22 |
| **FAMILY INCOME** | | | | | | | | |
| EXPERIMENTAL | 6350 | 8500 | 5150 | 8500 | 6300 | 7250 | 6450 | 7750 |
| COMPARISON | 8850 | 9800 | 6700 | 7650 | 9500 | 7250 | 6250 | 6750 |
| **EDUCATION OF RESPONDENT** (Mean years of schooling) | | | | | | | | |
| EXPERIMENTAL | 8.8 | 8.9 | 9.1 | 10.8 | 10.5 | 11.8 | 9.4 | 9.4 |
| COMPARISON | 8.3 | 5.9 | 9.3 | 9.3 | 9.5 | 6.8 | 6.9 | 7.4 |
| **YEARS IN U.S.** | | | | | | | | |
| EXPERIMENTAL | 15.3 | 17.6 | 22.6 | 21.6 | 10.4 | 23.3 | 17.9 | 3.7 |
| COMPARISON | 15.1 | 10.7 | 27.8 | 24.1 | 12.5 | 14.3 | 15.1 | 13.8 |
| **AVERAGE FAMILY SIZE** | | | | | | | | |
| EXPERIMENTAL | 4.1 | 5.5 | 5.4 | 4.8 | 4.5 | 3.7 | 5.0 | 5.4 |
| COMPARISON | 4.8 | 6.2 | 5.4 | 4.8 | 4.6 | 5.5 | 5.1 | 4.6 |
| **AVERAGE NUMBER OF CHILDREN** | | | | | | | | |
| EXPERIMENTAL | 2.4 | 3.5 | 3.3 | 2.9 | 3.2 | 1.9 | 3.0 | 3.0 |
| COMPARISON | 2.8 | 4.5 | 3.3 | 2.8 | 2.7 | 3.0 | 3.1 | 3.2 |
| **AVERAGE AGE OF CHILDREN** | | | | | | | | |
| EXPERIMENTAL | 5.4 | 5.5 | 5.4 | 6.0 | 5.6 | 5.7 | 5.2 | 5.2 |
| COMPARISON | 5.7 | 5.8 | 6.0 | 7.1 | 3.3 | 4.8 | 5.8 | 4.6 |

# APPENDIX M

## BACKGROUND CHARACTERISTICS OF SAMPLE TEACHERS

# BACKGROUND CHARACTERISTICS OF SAMPLE TEACHERS

| | EN PARCO ABIERTO | | AMANECER | | ALERTA | | NUEVAS FRONTERAS | | ALL SITES |
|---|---|---|---|---|---|---|---|---|---|
| | I | II | I | II | I | II | I | II | |
| | N=4 | N=6 | N=3 | N=4 | N=3 | N=2 | N=5 | N=6 | N=33 |
| **SEX** | | | | | | | | | |
| Male | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Female | 4 | 6 | 3 | 4 | 3 | 1 | 5 | 6 | 32 |
| **ETHNICITY** | | | | | | | | | |
| Mexican American | 4 | 1 | 3 | 4 | 0 | 0 | 5 | 2 | 19 |
| Caucasian/White | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| Hispanic Other | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| Puerto Rican | 0 | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 7 |
| Negro/Black | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| **LANGUAGE PREFERENCE** | | | | | | | | | |
| English | 4 | 2 | 1 | 1 | 0 | 1 | 0 | 6 | 15 |
| Spanish | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 4 |
| Bilingual[2] | 0 | 4 | 2 | 2 | 3 | 1 | 2 | 0 | 14 |
| **AGE**[3] | - | 42.2 | 27.0/27.3 | | 34.3/ 46 | | 49.4/40.0 | | 38.1 |
| **RESIDENCE** | | | | | | | | | |
| Years in U.S. | - | 30.3 | 26.7/23 | | 27.7/33.5 | | 49.4/40.0 | | 33.0 |
| Years in neighborhood | 1.5[4]/15.5 | | 2.7[4]/ 1.1 | | 9.3/10.0 | | 9.4/13.0 | | 8.6 |
| **EDUCATION** | | | | | | | | | |
| Years of Schooling | 13.4/11.0 | | 13.3/12.8 | | 14.0/16.0 | | 14.8/14.2 | | 13.7 |
| Highest Degree/Certification | | | | | | | | | |
| High School Diploma/G.E.D. | 1 | 2 | 1 | 3 | 1 | 0 | 3 | 3 | 14 |
| C.D.A. Credential | 0 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 6 |
| Children's Center Permit | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| A.A. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| B.A. | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 3 |
| M.A. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| **TEACHING EXPERIENCE**[5] | | | | | | | | | |
| Less than one year | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 5 |
| 1-2 years | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 4 |
| 3-5 years | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 6 |
| Over five years | 3 | 4 | 1 | 1 | 2 | 2 | 2 | 3 | 18 |

[1] "Teacher" refers to both teachers and aides. Age, years of schooling and residence information is reported in mean number of years. All other data represent frequency counts.

[2] "Bilingual category" refers to respondents who classified themselves as speaking Spanish and English "about equally" the majority of the time.

[3] A dash indicates missing data. Any total of frequency counts which do not equal N are due to missing data.

[4] Mean number of "years in neighborhood" is skewed by one respondent's residence in the neighborhood.

[5] "Teaching experience" refers to full-time teaching experience only. Additional part-time experience was reported for the following sites: Amanecer I- less than one year, Amanecer II- 1 to 2 years, Alerta I- over five years, Alerta I, less than one year, and Nuevas Fronteras II- over five years.

# APPENDIX N

## BACKGROUND CHARACTERISTICS OF SAMPLE CHILDREN AT EACH SITE

# BACKGROUND DATA ON THE EXPERIMENTAL HEAD START CHILDREN FOR EACH TREATMENT SITE

| | UN MARCO ABIERTO | | AMANECER | | ALERTA | | NUEVAS FRONTERAS | |
|---|---|---|---|---|---|---|---|---|
| | I | II | I | II | I | II | I | II |
| AGE (Mean in months) | | | | | | | | |
| EXPERIMENTAL HEAD START | 52.6 | 50.4 | 52.7 | 52.4 | 49.9 | 51.1 | 54.0 | 51.8 |
| COMPARISON HEAD START | 51.3 | 49.7 | - | 49.6 | - | - | 53.8 | 50.3 |
| STAY-AT-HOME COMPARISON | - | 48.2 | 51.3 | 55.9 | 49.6 | 53.3 | - | - |
| SEX | | | | | | | | |
| EXPERIMENTAL HEAD START | | | | | | | | |
| Boys | 18 | 23 | 18 | 18 | 5 | 7 | 13 | 17 |
| Girls | 16 | 15 | 12 | 25 | 20 | 8 | 19 | 15 |
| COMPARISON HEAD START | | | | | | | | |
| Boys | 16 | 3 | 0 | 12 | 0 | 0 | 17 | 19 |
| Girls | 17 | 9 | 0 | 17 | 0 | 0 | 18 | 17 |
| STAY-AT-HOME COMPARISON | | | | | | | | |
| Boys | 0 | 5 | 16 | 3 | 6 | 3 | 0 | 0 |
| Girls | 0 | 6 | 12 | 6 | 2 | 1 | 0 | 0 |
| LANGUAGE PREFERENCE | | | | | | | | |
| EXPERIMENTAL HEAD START | | | | | | | | |
| Spanish | 20 | 17 | 6 | 41 | 9 | 3 | 30 | 10 |
| English | 14 | 21 | 24 | 2 | 16 | 12 | 2 | 22 |
| COMPARISON HEAD START | | | | | | | | |
| Spanish | 23 | 10 | 0 | 27 | 0 | 0 | 4 | 16 |
| English | 10 | 2 | 0 | 2 | 0 | 0 | 1 | 20 |
| STAY-AT-HOME COMPARISON | | | | | | | | |
| Spanish | 0 | 1 | 5 | 9 | 4 | 2 | 0 | 0 |
| English | 0 | 1 | 23 | 0 | 4 | 2 | 0 | 0 |
| ETHNICITY | | | | | | | | |
| EXPERIMENTAL HEAD START | | | | | | | | |
| Hispanic | 32 | 32 | 29 | 42 | 18 | 9 | 32 | 33 |
| Anglo | 0 | 6 | 2 | 1 | 0 | 0 | 0 | 9 |
| Black | 1 | 0 | 0 | 0 | 6 | 6 | 0 | 0 |
| Other | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| COMPARISON HEAD START | | | | | | | | |
| Hispanic | 33 | 12 | 0 | 28 | 0 | 0 | 35 | 28 |
| Anglo | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| STAY-AT-HOME COMPARISON | | | | | | | | |
| Hispanic | 0 | 11 | 26 | 9 | 4 | 6 | 0 | 0 |
| Anglo | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Black | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

# APPENDIX O

## COMPARISON OF OBSERVED PRACTICE WITH SPANISH AND ENGLISH BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME

# COMPARISON OF OBSERVED PRACTICE WITH SPANISH BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: UN MARCO ABIERTO

| | SPANISH-PREFERRING (N = 6) | | | | | | ENGLISH-PREFERRING (N = 5) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| **LINGUISTIC COMPETENCE** | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 17 | 83 | 0 | 50 | 50 | 0 | 20 | 0 | 80 | NO[1] | NO | NO |
| Incomplete Sentences | 83 | 17 | 0 | 33 | 50 | 17 | NO | NO | NO | NO | NO | NO |
| Plural Nouns | 50 | 33 | 17 | 67 | 17 | 17[2] | NO | NO | NO | NO | NO | NO |
| Negative Form | 67 | 17 | 17 | 67 | 33 | 0 | NO | NO | NO | NO | NO | NO |
| Interrogative Form | 33 | 33 | 33 | 50 | 33 | 17 | NO | NO | NO | NO | NO | NO |
| Present Tense | 50 | 50 | 0 | 50 | 50 | 0 | 20 | 0 | 80 | NO | NO | NO |
| Past Tense | 50 | 50 | 0 | 50 | 50 | 0 | NO | NO | NO | NO | NO | NO |
| Future Tense | 50 | 33 | 17 | 17 | 67 | 17 | NO | NO | NO | NO | NO | NO |
| Grammatically Incorrect Usage | 17 | 17 | 67 | 17 | 17 | 67 | NO | NO | NO | NO | NO | NO |
| **FUNCTIONAL COMPETENCE** | | | | | | | | | | | | |
| Description of Self | 17 | 0 | 83 | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Description of Others | NO | NO | NO | 17 | 0 | 83 | NO | NO | NO | NO | NO | NO |
| Description of Own Feelings | 0 | 17 | 83 | 0 | 17 | 83 | NO | NO | NO | NO | NO | NO |
| Telling of a Story or Event | 33 | 0 | 67 | 17 | 0 | 83 | NO | NO | NO | NO | NO | NO |
| Verbal Instruction | 50 | 33 | 17 | 33 | 33 | 33 | NO | NO | NO | NO | NO | NO |

[1] NO = Not observed

[2] Percentage totals may not equal 100% due to rounding.

-A 85-

# COMPARISON OF OBSERVED PRACTICE WITH ENGLISH BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: EN MARCO ABIERTO 1

## SPANISH-PREFERRING (N=6)

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| **LINGUISTIC COMPETENCE** | | | | | | |
| Complete Sentences | 67 | 0 | 33 | 67 | 17 | 17 |
| Incomplete Sentences | 50 | 33 | 17 | 50 | 33 | 17 |
| Plural Nouns | 17 | 33 | 50 | 50 | 17 | 33 |
| Negative Form | 33 | 0 | 67 | 67 | 0 | 33 |
| [illegible]gative Form | 33 | 0 | 67 | 67 | 17 | 17 |
| Present Tense | 50 | 17 | 33 | 67 | 17 | 17 |
| Past Tense | 33 | 17 | 50 | 33 | 17 | 50 |
| Future Tense | 17 | 17 | 67 | 50 | 17 | 33 |
| Grammatically Incorrect Usage | 50 | 17 | 33 | 50 | 17 | 33 |
| **FUNCTIONAL COMPETENCE** | | | | | | |
| Description of Self | 17 | 0 | 83 | 50 | 0 | 50 |
| Description of Others | 17 | 0 | 83 | 0 | 17 | 83 |
| Description of Own Feelings | 0 | 17 | 83 | 17 | 17 | 67 |
| Telling of a Story or Event | 0 | 17 | 83 | 0 | 17 | 83 |
| Instruction | 50 | 0 | 50 | 50 | 17 | 33 |

## ENGLISH-PREFERRING (N=5)

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| **LINGUISTIC COMPETENCE** | | | | | | |
| Complete Sentences | 60 | 40 | 0 | 80 | 20 | 0 |
| Incomplete Sentences | 20 | 80 | 0 | 20 | 80 | 0 |
| Plural Nouns | 20 | 60 | 20 | 20 | 80 | 0 |
| Negative Form | 60 | 40 | 0 | 60 | 20 | 20 |
| [illegible]gative Form | 60 | 40 | 0 | 20 | 80 | 0 |
| Present Tense | 40 | 60 | 0 | 60 | 40 | 0 |
| Past Tense | 100 | 0 | 0 | 80 | 20 | 0 |
| Future Tense | 40 | 20 | 40 | 40 | 40 | 20 |
| Grammatically Incorrect Usage | 80 | 0 | 20 | 60 | 40 | 0 |
| **FUNCTIONAL COMPETENCE** | | | | | | |
| Description of Self | 20 | 0 | 80 | 60 | 0 | 40 |
| Description of Others | 0 | 20 | 80 | 20 | 0 | 80 |
| Description of Own Feelings | 40 | 20 | 40 | 60 | 40 | 0 |
| Telling of a Story or Event | 20 | 0 | 80 | 20 | 40 | 40 |
| Instruction | 80 | 0 | 20 | 60 | 20 | 20 |

# COMPARISON OF OBSERVED PRACTICE WITH SPANISH BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: AMANECER

| | SPANISH-PREFERRING (N=5) | | | | | | ENGLISH-PREFERRING (N=6) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| **LINGUISTIC COMPETENCE** | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 0 | 100 | 0 | 0 | 100 | 0 | 17 | 33 | 50 | 17 | 33 | 50 |
| Incomplete Sentences | 80 | 20 | 0 | 60 | 20 | 20 | 50 | 0 | 50 | 50 | 0 | 50 |
| Plural Nouns | 0 | 0 | 100 | 60 | 0 | 40 | NO[1] | NO | NO | NO | NO | NO |
| Negative Form | 40 | 20 | 40 | 20 | 20 | 60 | 17 | 0 | 83 | NO | NO | NO |
| Interrogative Form | 0 | 60 | 40 | 40 | 20 | 20 | 17 | 17 | 67[2] | 0 | 17 | 83 |
| Present Tense | 40 | 60 | 0 | 40 | 60 | 0 | 33 | 17 | 50 | 0 | 17 | 83 |
| Past Tense | 40 | 20 | 40 | 40 | 20 | 40 | NO | NO | NO | NO | NO | NO |
| Future Tense | 40 | 20 | 40 | 0 | 40 | 60 | NO | NO | NO | NO | NO | NO |
| Grammatically Incorrect Usage | 20 | 20 | 60 | 40 | 20 | 40 | NO | NO | NO | 17 | 0 | 83 |
| **FUNCTIONAL COMPETENCE** | | | | | | | | | | | | |
| Description of Self | 20 | 0 | 80 | 20 | 0 | 80 | NO | NO | NO | NO | NO | NO |
| Description of Others | 20 | 20 | 60 | 0 | 20 | 80 | 17 | 0 | 83 | NO | NO | NO |
| Description of Own Feelings | NO | NO | NO | 20 | 0 | 80 | NO | NO | NO | NO | NO | NO |
| Telling of a Story or Event | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Verbal Instruction | 20 | 40 | 40 | 20 | 60 | 20 | NO | NO | NO | NO | NO | NO |

[1] NO = Not observed

[2] Percentage totals may not equal 100% due to rounding.

# COMPARISON OF OBSERVED PRACTICE WITH ENGLISH BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: AMANECER[1]

| | SPANISH-PREFERRING (N=5) | | | | | | ENGLISH-PREFERRING (N=6) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| **LINGUISTIC COMPETENCE** | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 60 | 20 | 20 | 60 | 0 | 40 | 67 | 33 | 0 | 67 | 17 | 17 |
| Incomplete Sentences | 60 | 40 | 0 | 40 | 40 | 20 | 50 | 50 | 0 | 33 | 67 | 0 |
| Plural Nouns | 20 | 0 | 80 | 40 | 0 | 60 | 0 | 17 | 83 | 50 | 17 | 33 |
| Negative Form | 40 | 0 | 60 | 20 | 0 | 80 | 67 | 33 | 0 | 50 | 50 | 0 |
| Interrogative Form | 40 | 0 | 60 | 40 | 0 | 60 | 0 | 83 | 17 | 33 | 67 | 0 |
| Present Tense | 80 | 0 | 20 | 60 | 0 | 40 | 67 | 33 | 0 | 50 | 50 | 0 |
| Past Tense | 20 | 20 | 60 | 20 | 20 | 60 | 67 | 33 | 0 | 83 | 17 | 0 |
| Future Tense | 40 | 0 | 60 | 40 | 0 | 60 | 33 | 50 | 17 | 50 | 33 | 17 |
| Grammatically Incorrect Usage | 40 | 20 | 40 | 20 | 20 | 60 | 0 | 83 | 17 | 33 | 67 | 0 |
| **FUNCTIONAL COMPETENCE** | | | | | | | | | | | | |
| Description of Self | 20 | 0 | 80 | 20 | 0 | 80 | 67 | 0 | 33 | 17 | 0 | 83 |
| Description of Others | 40 | 0 | 60 | 20 | 0 | 80 | 67 | 0 | 33 | 33 | 0 | 67 |
| Description of Own Feelings | 40 | 0 | 60 | 0 | 0 | 100 | 33 | 17 | 50 | 50 | 33 | 17 |
| Telling of a Story or Event | NO[2] | NO | NO | NO | NO | NO | 17 | 0 | 83 | NO | NO | NO |
| Verbal Instruction | 40 | 0 | 60 | 40 | 0 | 60 | 0 | 83 | 17 | 33 | 67 | 0 |

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed

# COMPARISON OF OBSERVED PRACTICE WITH SPANISH BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: ALERTA[1]

| | SPANISH-PREFERRING (N=6) | | | | | | ENGLISH-PREFERRING (N=8) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| **LINGUISTIC COMPETENCE** | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 67 | 17 | 17[1] | 50 | 17 | 33 | 13 | 0 | 87 | 25 | 13 | 63 |
| Incomplete Sentences | 50 | 0 | 50 | 83 | 0 | 17 | 13 | 25 | 63 | 63 | 13 | 25 |
| Plural Nouns | NO | NO | NO[2] | 50 | 0 | 50 | NO | NO | NO | NO | NO | NO |
| Negative Form | 50 | 0 | 50 | 50 | 0 | 50 | 0 | 13 | 87 | 0 | 13 | 87 |
| Interrogative Form | 67 | 0 | 33 | 83 | 0 | 17 | 13 | 0 | 87 | 13 | 0 | 87 |
| Present Tense | 67 | 0 | 33 | 50 | 17 | 33 | 13 | 0 | 87 | 13 | 0 | 87 |
| Past Tense | 50 | 17 | 33 | 33 | 17 | 50 | 0 | 13 | 87 | 0 | 13 | 87 |
| Future Tense | 50 | 0 | 50 | 50 | 0 | 50 | NO | NO | NO | 13 | 0 | 87 |
| Grammatically Incorrect Usage | 50 | 0 | 50 | 50 | 0 | 50 | 13 | 13 | 75 | 13 | 0 | 87 |
| **FUNCTIONAL COMPETENCE** | | | | | | | | | | | | |
| Description of Self | NO | NO | NO | 17 | 0 | 83 | NO | NO | NO | NO | NO | NO |
| Description of Others | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Description of Own Feelings | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Telling of a Story or Event | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Verbal Instruction | 50 | 17 | 33 | 17 | 17 | 67 | 13 | 0 | 87 | 0 | 0 | 100 |

[1] Percentage totals may not equal 100% due to rounding.

[2] NO= Not observed

# COMPARISON OF OBSERVED PRACTICE WITH ENGLISH BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: ALERTA[1]

| | SPANISH-PREFERRING (N=6) | | | | | | ENGLISH-PREFERRING (N=8) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| **LINGUISTIC COMPETENCE** | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 50 | 33 | 17 | 67 | 33 | 0 | 13 | 87 | 0 | 25 | 75 | 0 |
| Incomplete Sentences | 50 | 33 | 17 | 67 | 33 | 0 | 50 | 50 | 0 | 63 | 37 | 0 |
| Plural Nouns | NO[1] | NO | NO | 67 | 0 | 33 | 0 | 63 | 37 | 50 | 37 | 13 |
| Negative Form | 67 | 0 | 33 | 100 | 0 | 0 | 75 | 25 | 0 | 87 | 13 | 0 |
| Interrogative Form | 33 | 33 | 33 | 50 | 33 | 17 | 75 | 13 | 13[2] | 50 | 37 | 13 |
| Present Tense | 33 | 33 | 33 | 50 | 33 | 17 | 63 | 37 | 0 | 63 | 37 | 0 |
| Past Tense | 33 | 17 | 50 | 50 | 17 | 33 | 25 | 50 | 25 | 63 | 37 | 0 |
| Future Tense | 33 | 0 | 67 | 25 | 0 | 17 | 50 | 13 | 37 | 75 | 13 | 13 |
| Grammatically Incorrect Usage | 67 | 0 | 33 | 100 | 0 | 0 | 75 | 25 | 0 | 87 | 13 | 0 |
| **FUNCTIONAL COMPETENCE** | | | | | | | | | | | | |
| Description of Self | 33 | 0 | 67 | 17 | 0 | 83 | 25 | 0 | 75 | 37 | 0 | 63 |
| Description of Others | NO | NO | NO | 33 | 0 | 67 | 25 | 13 | 63 | 37 | 13 | 50 |
| Description of Own Feelings | 17 | 0 | 83 | 17 | 0 | 83 | 13 | 13 | 75 | 13 | 13 | 75 |
| Telling of a Story or Event | 17 | 0 | 83 | 17 | 0 | 83 | NO | NO | NO | NO | NO | NO |
| Verbal Instruction | 33 | 33 | 33 | 50 | 33 | 17 | 50 | 25 | 25 | 63 | 25 | 13 |

[1] NO = Not observed

[2] Percentage totals may not equal 100% due to rounding.

# COMPARISON OF OBSERVED PRACTICE WITH SPANISH BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: NUEVAS FRONTERAS[1]

| | SPANISH-PREFERRING ( N=9 ) | | | | | | ENGLISH-PREFERRING ( N=3 ) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| **LINGUISTIC COMPETENCE** | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 78 | 22 | 0 | 78 | 22 | 0 | 0 | 0 | 100 | 33 | 0 | 67 |
| Incomplete Sentences | 33 | 67 | 0 | 22 | 78 | 0 | 33 | 67 | 0 | 33 | 67 | 0 |
| Plural Nouns | 44 | 33 | 22 | 33 | 44 | 22 | 33 | 33 | 33 | 33 | 33 | 33 |
| Negative Form | 44 | 44 | 11 | 78 | 22 | 0 | 67 | 0 | 33 | 67 | 33 | 0 |
| Interrogative Form | 44 | 56 | 0 | 56 | 44 | 0 | 67 | 0 | 33 | 67 | 33 | 0 |
| Present Tense | 67 | 33 | 0 | 67 | 33 | 0 | 67 | 33 | 0 | 67 | 33 | 0 |
| Past Tense | 56 | 33 | 11 | 67 | 33 | 0 | 0 | 67 | 33 | 33 | 67 | 0 |
| Future Tense | 56 | 11 | 33 | 56 | 0 | 44 | 33 | 0 | 67 | 33 | 67 | 0 |
| Grammatically Incorrect Usage | 33 | 33 | 33 | 67 | 33 | 0 | 33 | 0 | 67 | 0 | 33 | 66 |
| **FUNCTIONAL COMPETENCE** | | | | | | | | | | | | |
| Description of Self | 11 | 22 | 67 | 33 | 22 | 44 | 0 | 33 | 67 | 0 | 33 | 67 |
| Description of Others | NO[2] | NO | NO | 33 | 0 | 67 | NO | NO | NO | 33 | 0 | 67 |
| Description of Own Feelings | NO | NO | NO | 22 | 0 | 78 | NO | NO | NO | NO | NO | NO |
| Telling of a Story or Event | 0 | 11 | 89 | 0 | 11 | 89 | NO | NO | NO | 33 | 0 | 67 |
| Verbal Instruction | 44 | 33 | 22 | 44 | 44 | 11 | 33 | 33 | 33 | 33 | 0 | 67 |

[1] Percentage totals may not equal 100% due to rounding.

[2]

# COMPARISON OF OBSERVED PRACTICE WITH ENGLISH BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: NUEVAS FRONTERAS

SPANISH-PREFEPRING (N = 9)

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| LINGUISTIC COMPETENCE | % | % | % | % | % | % |
| Complete Sentences | 11 | 0 | 89 | 33 | 0 | 67 |
| Incomplete Sentences | 33 | 0 | 67 | 100 | 0 | [redacted] |
| Plural Nouns | 11 | 0 | 89 | 44 | 0 | 56 |
| Negative Form | NO | NO | NO | NO | NO | NO |
| Interrogative Form | NO | NO | NO | 33 | 0 | 67 |
| Present Tense | 11 | 0 | 89 | 22 | 0 | 78 |
| Past Tense | NO | NO | NO | 11 | 0 | 89 |
| Future Tense | NO | NO | NO | NO | NO | NO |
| Grammatically Incorrect Usage | 33 | 0 | 67 | 44 | 0 | 56 |
| FUNCTIONAL COMPETENCE | | | | | | |
| Description of Self | NO | NO | NO | NO | NO | NO |
| Description of Others | NO | NO | NO | NO | NO | NO |
| Description of Own Feelings | NO | NO | NO | NO | NO | NO |
| Telling of a Story or Event | NO | NO | NO | NO | NO | NO |
| Verbal Instruction | 11 | 0 | 89 | 11 | 0 | 89 |

ENGLISH-PREFERRING (N = 3)

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| LINGUISTIC COMPETENCE | % | % | % | % | % | % |
| Complete Sentences | 33 | 67 | 0 | 33 | 67 | 0 |
| Incomplete Sentences | 67 | 33 | 0 | 67 | 33 | 0 |
| Plural Nouns | 33 | 0 | 67 | 67 | 0 | 33 |
| Negative Form | 33 | 0 | 67 | 33 | 0 | 67 |
| Interrogative Form | 33 | 33 | 33 | 67 | 33 | 0 |
| Present Tense | 33 | 33 | 33 | 67 | 33 | 0 |
| Past Tense | 0 | 33 | 67 | 33 | 33 | 33 |
| Future Tense | 0 | 33 | 67 | 0 | 33 | 67 |
| Grammatically Incorrect Usage | 33 | 0 | 67 | 67 | 33 | 0 |
| FUNCTIONAL COMPETENCE | | | | | | |
| Description of Self | NO | NO | NO | 33 | 0 | 67 |
| Description of Others | NO | NO | NO | NO | NO | NO |
| Description of Own Feelings | NO | NO | NO | NO | NO | NO |
| Telling of a Story or Event | NO | NO | NO | NO | NO | NO |
| Verbal Instruction | NO | NO | NO | 33 | 33 | 33 |

# APPENDIX A

## RELATIVE FREQUENCY OF OBSERVED PRACTICE WITH LANGUAGE COMPETENCIES BY INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME

# RELATIVE FREQUENCY OF OBSERVED PRACTICE WITH LANGUAGE COMPETENCIES BY INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: UN MARCO ABIERTO

SPANISH-PREFERRING

| CHILD'S NAME | Irma | | | Victoria | | | Crispino | | | Lea | | | Carolina | | | Jose | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SPANISH N= | 16 | 61 | 58 | 18 | 47 | 90 | 24 | 89 | 73 | 29 | 2 | 16 | 24 | 96 | 69 | 50 | 24 | 4 |
| LINGUISTIC COMPETENCE | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 44 | 36 | 39 | 27 | 40 | 34 | 50 | 30 | 41 | 31 | 0 | 50 | 42 | 33 | 51 | 34 | 29 | 0 |
| Incomplete Sentences | 6 | 8 | 2 | 22 | 6 | 4 | 4 | 9 | 4 | 7 | 0 | 0 | 4 | 9 | 7 | 20 | 25 | 25 |
| Plural Nouns | 0 | 8 | 0 | 11 | 5 | 12 | 0 | 9 | 4 | 0 | 0 | 6 | 4 | 8 | 7 | 8 | 0 | 0 |
| Negative Form | 0 | 5 | 2 | 0 | 2 | 2 | 0 | 7 | 4 | 10 | 0 | 6 | 4 | 7 | 2 | 0 | 0 | 25 |
| Interrogative Form | 6 | 3 | 17 | 0 | 0 | 9 | 0 | 4 | 4 | 17 | 0 | 13 | 4 | 6 | 2 | 0 | 0 | 0 |
| Present Tense | 38 | 25 | 26 | 6 | 21 | 26 | 21 | 24 | 27 | 28 | 50 | 13 | 25 | 17 | 14 | 28 | 13 | 50 |
| Past Tense | 0 | 3 | 7 | 11 | 5 | 8 | 17 | 4 | 8 | 7 | 0 | 13 | 0 | 3 | 6 | 4 | 13 | 0 |
| Future Tense | 6 | 12 | 7 | 17 | 19 | 4 | 8 | 7 | 5 | 0 | 0 | 0 | 17 | 16 | 11 | 0 | 21 | 0 |
| Grammatically Incorrect Usage | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FUNCTIONAL COMPETENCE N= | 3 | 9 | 1 | 0 | 7 | 9 | 2 | 5 | 8 | 2 | 2 | 3 | 2 | 2 | 7 | 8 | 5 | 0 |
| Description of Self | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Description of Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Description of Own Feelings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| Telling of a Story/ Event | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 20 | 0 |
| Verbal Instruction | 100 | 100 | 100 | 0 | 86 | 100 | 100 | 80 | 63 | 100 | 100 | 100 | 50 | 100 | 100 | 88 | 80 | 0 |
| ENGLISH N= | 0 | 2 | 0 | 0 | 1 | 12 | 0 | 7 | 54 | 33 | 57 | 53 | 4 | 37 | 93 | 19 | 9 | 48 |
| LINGUISTIC COMPETENCE | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 42 | 33 | 30 | 33 | 34 | 0 | 24 | 34 | 37 | 44 | 35 |
| Incomplete Sentences | 0 | 50 | 0 | 0 | 0 | 8 | 0 | 29 | 13 | 24 | 9 | 3 | 50 | 16 | 6 | 5 | 11 | 10 |
| Plural Nouns | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 2 | 3 | 1 | 4 | 25 | 0 | 1 | 0 | 0 | 4 |
| Negative Form | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 4 | 5 | 0 | 8 | 6 | 0 | 0 | 2 |
| Interrogative Form | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 4 | 3 | 4 | 8 | 0 | 3 | 10 | 11 | 11 | 2 |
| Present Tense | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 29 | 22 | 21 | 28 | 26 | 0 | 27 | 24 | 26 | 22 | 25 |
| Past Tense | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | [illegible] | [illegible] | 7 | 4 | 0 | 8 | 4 | 21 | 0 | 10 |
| Future Tense | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [illegible] | 15 | 7 | 8 | 0 | 3 | 5 | 0 | 0 | 2 |
| Grammatically Incorrect Usage | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 7 | 5 | 25 | 11 | 10 | 0 | 11 | 8 |
| FUNCTIONAL COMPETENCE N= | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 4 | 5 | 6 | 0 | 0 | 3 | 4 | 1 | 6 |
| Description of Self | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 33 | 0 | 0 | 33 | 0 | 0 | 17 |
| Description of Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Description of Own Feelings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| Telling of a Story/ Event | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 |
| Verbal Instruction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 100 | 50 | 60 | 67 | 0 | 0 | 67 | 75 | 100 | 33 |

ENGLISH-PREFERRING

| Ernesto | | | Lucia | | | Candido | | | Barbara | | | Danny | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 70 | 95 | 11 | 62 | 31 | 46 | 46 | 75 | 20 | 79 | 63 | 48 | 122 | 191 |
| % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| 13 | 31 | 36 | 9 | 21 | 35 | 32 | 26 | 35 | 20 | 24 | 33 | 38 | 34 | 31 |
| 25 | 8 | 11 | 45 | 24 | 3 | 11 | 13 | 9 | 35 | 15 | 11 | 8 | 7 | 11 |
| 13 | 6 | 4 | 9 | 21 | 35 | 0 | 0 | 5 | 20 | 10 | 5 | 6 | 10 | 6 |
| 6 | 0 | 4 | 0 | 10 | 13 | 0 | 9 | 5 | 5 | 4 | 5 | 0 | 2 | 2 |
| 4 | 10 | 2 | 0 | 3 | 0 | 9 | 2 | 7 | 0 | 8 | 8 | 6 | 2 | 5 |
| 18 | 23 | 24 | 36 | 31 | 32 | 28 | 22 | 29 | 15 | 25 | 19 | 35 | 30 | 28 |
| 0 | 6 | 6 | 0 | 3 | 3 | 9 | 17 | 3 | 0 | 4 | 14 | 2 | 7 | 9 |
| 13 | 6 | 7 | 0 | 5 | 0 | 0 | 0 | 1 | 5 | 5 | 2 | 4 | 5 | 8 |
| 6 | 10 | 5 | 0 | 6 | 13 | 11 | 11 | 5 | 0 | 5 | 5 | 0 | 3 | 4 |
| 0 | 4 | 11 | 0 | 5 | 4 | 3 | 3 | 12 | 2 | 2 | 2 | 11 | 5 | 17 |
| 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 6 |
| 0 | 25 | 18 | 0 | 0 | 25 | 0 | 0 | 17 | 50 | 0 | 0 | 18 | 40 | 0 |
| 0 | 25 | 18 | 0 | 0 | 0 | 33 | 33 | 25 | 0 | 0 | 0 | 73 | 20 | 0 |
| 0 | 50 | 54 | 0 | 80 | 75 | 67 | 67 | 50 | 50 | 100 | 50 | 0 | 40 | 94 |

# RELATIVE FREQUENCY OF OBSERVED PRACTICE WITH LANGUAGE COMPETENCIES BY INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: AMANECER[1]

| | SPANISH-PREFERRING | | | | | | | | | | | | ENGLISH-PREFERRING | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHILD'S NAME | Julio | | | Ramona | | | Doris | | | James | | | Claudia | | | Clotilde | | | David | | | Judy | | |
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SPANISH N= | 22 | 23 | 67 | 4 | 5 | 0 | 5 | 14 | 18 | 28 | 19 | 10 | 18 | 23 | 4 | 3 | 0 | 0 | 2 | 5 | 0 | 0 | 1 | 0 |
| LINGUISTIC COMPETENCE | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 36 | 30 | 34 | 50 | 20 | 0 | 60 | 43 | 17 | 43 | 26 | 30 | 50 | 48 | 25 | 33 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| Incomplete Sentences | 18 | 13 | 15 | 0 | 60 | 0 | 0 | 14 | 39 | 0 | 16 | 20 | 0 | 4 | 25 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 100 | 0 |
| Plural Nouns | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Negative Form | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interrogative Form | 18 | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 11 | 18 | 11 | 0 | 6 | 0 | 25 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Present Tense | 23 | 26 | 28 | 50 | 20 | 0 | 20 | 36 | 22 | 36 | 32 | 20 | 33 | 30 | 25 | 33 | 0 | 0 | 50 | 60 | 0 | 0 | 0 | 0 |
| Past Tense | 0 | 9 | 8 | 0 | 0 | 0 | 20 | 7 | 0 | 0 | 0 | 10 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Tense | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grammatically Incorrect Usage | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 7 | 6 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N= | 3 | 2 | 7 | 0 | 1 | 0 | 1 | 2 | 0 | 3 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| FUNCTIONAL COMPETENCE | | | | | | | | | | | | | | | | | | | | | | | | |
| Description of Self | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Description of Others | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 |
| Description of Own Feelings | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Telling of a Story/ Event | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Verbal Instruction | 100 | 100 | 72 | 0 | 0 | 0 | 100 | 50 | 0 | 97 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENGLISH N= | 10 | 4 | 4 | 0 | 3 | 0 | 5 | 25 | 26 | 1 | 14 | 9 | 1 | 46 | 23 | 5 | 53 | 70 | 18 | 64 | 40 | 50 | 58 | 74 |
| LINGUISTIC COMPETENCE | | | | | | | | | | | | | | | | | | | | | | | | |
| Complete Sentences | 0 | 25 | 0 | 0 | 0 | 0 | 40 | 28 | 42 | 0 | 29 | 22 | 0 | 33 | 44 | 40 | 45 | 40 | 40 | 42 | 50 | 44 | 43 | 43 |
| Incomplete Sentences | 0 | 25 | 75 | 0 | 100 | 0 | 0 | 20 | 8 | 100 | 29 | 56 | 100 | 7 | 4 | 20 | 11 | 6 | 6 | 6 | 10 | 0 | 7 | 4 |
| Plural Nouns | 0 | 50 | 25 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 |
| Negative Form | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 4 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 13 | 3 | 6 | 6 | 5 | 8 | 5 | 7 |
| Interrogative Form | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 13 | 4 | 0 | 0 | 13 | 6 | 4 | 15 | 12 | 5 | 7 |
| Present Tense | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 12 | 23 | 0 | 36 | 22 | 0 | 24 | 17 | 40 | 9 | 16 | 17 | 30 | 3 | 26 | 28 | 27 |
| Past Tense | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 0 | 15 | 14 | 11 | 8 | 15 | 6 | 9 | 7 |
| Future Tense | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 7 | 9 | 0 | 4 | 3 | 6 | 0 | 0 | 4 | 2 | 4 |
| Grammatically Incorrect Usage | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 12 | 8 | 0 | 7 | 1 | 0 | 7 | 9 | 0 | 2 | 4 | 6 | 3 | 3 | 0 | 2 | 1 |
| N= | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 5 | 1 | 0 | 5 | 2 | 1 | 9 | 8 | 4 | 14 | 7 | 5 | 10 | 2 |
| FUNCTIONAL COMPETENCE | | | | | | | | | | | | | | | | | | | | | | | | |
| Description of Self | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 20 | 30 | 0 |
| Description of Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 100 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 21 | 14 | 0 | 20 | 0 |
| Description of Own Feelings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 60 | 0 | 0 | 0 | 25 | 25 | 0 | 0 | 20 | 20 | 0 |
| Telling of a Story/ Event | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| Verbal Instruction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 75 | 0 | 20 | 0 | 0 | 0 | 100 | 100 | 100 | 75 | 75 | 43 | 86 | 60 | 30 | 100 |

| | ENGLISH-PREFERRING | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHILD'S NAME | Martin | | | Gregorio | | | Ruth | | | | | |
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | | | |
| SPANISH N= | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 17 | 3 | | | |
| LINGUISTIC COMPETENCE | % | % | % | % | % | % | % | % | % | | | |
| Complete Sentences | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 33 | | | |
| Incomplete Sentences | 0 | 0 | 100 | 0 | 0 | 100 | 0 | 12 | 33 | | | |
| Plural Nouns | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Negative Form | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | | | |
| Interrogative Form | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | | | |
| Present Tense | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | | | |
| Past Tense | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Future Tense | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Grammatically Incorrect Usage | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | | | |
| N= | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| FUNCTIONAL COMPETENCE | | | | | | | | | | | | |
| Description of Self | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Description of Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Description of Own Feelings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Telling of a Story/ Event | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Verbal Instruction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| ENGLISH N= | 31 | 59 | 63 | 6 | 26 | 17 | 28 | 47 | 41 | | | |
| LINGUISTIC COMPETENCE | | | | | | | | | | | | |
| Complete Sentences | 42 | 41 | 48 | 17 | 43 | 47 | 29 | 36 | 51 | | | |
| Incomplete Sentences | 0 | 3 | 6 | 50 | 0 | 12 | 14 | 17 | 5 | | | |
| Plural Nouns | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | | | |
| Negative Form | 0 | 7 | 5 | 0 | 12 | 6 | 11 | 0 | 5 | | | |
| Interrogative Form | 16 | 7 | 10 | 17 | 4 | 0 | 11 | 6 | 10 | | | |
| Present Tense | 26 | 24 | 22 | 17 | 27 | 18 | 18 | 38 | 7 | | | |
| Past Tense | 7 | 11 | 3 | 0 | 8 | 18 | 4 | 0 | 12 | | | |
| Future Tense | 0 | 7 | 3 | 0 | 0 | 0 | 11 | 0 | 2 | | | |
| Grammatically Incorrect Usage | 3 | 2 | 2 | 0 | 8 | 0 | 4 | 2 | 5 | | | |
| N= | 3 | 7 | 13 | 1 | 4 | 3 | 2 | 6 | 13 | | | |
| FUNCTIONAL COMPETENCE | | | | | | | | | | | | |
| Description of Self | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 17 | 8 | | | |
| Description of Others | 0 | 43 | 0 | 0 | 25 | 33 | 0 | 0 | 0 | | | |
| Description of Own Feelings | 0 | 0 | 15 | 0 | 25 | 0 | 0 | 33 | 8 | | | |
| Telling of a Story/ Event | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | | | |
| Verbal Instruction | 100 | 29 | 85 | 100 | 50 | 67 | 100 | 50 | 85 | | | |

[1] Percentage totals may not equal 100% due to rounding.

# RELATIVE FREQUENCY OF OBSERVED PRACTICE WITH LANGUAGE COMPETENCIES BY INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME:

ALERTA 1



## SPANISH-PREFERRING

| CHILD'S NAME | Francisco | | | Alicia | | | Maria | | | Judith | | | Veronica | | | Shirley | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TYPE | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SPANISH N= | 0 | 32 | 32 | 4 | 55 | 120 | 0 | 6 | 11 | 0 | 7 | 1 | 0 | 5 | 49 | 0 | 0 | 1 |
| LINGUISTIC COMPETENCE | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 0 | 41 | 22 | 50 | 42 | 36 | 0 | 17 | 36 | 0 | 43 | 0 | 0 | 20 | 20 | 0 | 0 | 0 |
| Incomplete Sentences | 0 | 9 | 19 | 0 | 4 | 14 | 0 | 33 | 18 | 0 | 0 | 100 | 0 | 0 | 22 | 0 | 0 | 0 |
| Plural Nouns | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Negative Form | 0 | 3 | 3 | 0 | 9 | 9 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 14 | 0 | 0 | 0 |
| Interrogative Form | 0 | 16 | 16 | 0 | 9 | 2 | 0 | 17 | 9 | 0 | 0 | 0 | 0 | 40 | 8 | 0 | 0 | 100 |
| Present Tense | 0 | 16 | 25 | 25 | 26 | 16 | 0 | 0 | 27 | 0 | 14 | 0 | 0 | 20 | 20 | 0 | 0 | 0 |
| Past Tense | 0 | 6 | 3 | 25 | 7 | 14 | 0 | 17 | 9 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Tense | 0 | 6 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 20 | 6 | 0 | 0 | 0 |
| Grammatically Incorrect Usage | 0 | 3 | 6 | 0 | 4 | 6 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| FUNCTIONAL COMPETENCE N= | 0 | 3 | 0 | 1 | 6 | 24 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Description of Self | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Description of Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Description of Own Feelings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Telling of a Story/ Event | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Verbal Instruction | 0 | 100 | 0 | 100 | 100 | 87 | 0 | 100 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0 |
| ENGLISH N= | 0 | 0 | 17 | 3 | 11 | 74 | 0 | 17 | 44 | 3 | 12 | 65 | 14 | 45 | 85 | 8 | 81 | 111 |
| LINGUISTIC COMPETENCE | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 0 | 0 | 18 | 0 | 36 | 37 | 0 | 35 | 18 | 67 | 8 | 20 | 21 | 33 | 30 | 50 | 28 | 28 |
| Incomplete Sentences | 0 | 0 | 41 | 100 | 19 | 16 | 0 | 24 | 25 | 0 | 33 | 34 | 29 | 11 | 12 | 13 | 19 | 23 |
| Plural Nouns | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 6 | | 0 | | 0 | 0 | 2 |
| Negative Form | 0 | 0 | 18 | 0 | 27 | 3 | 0 | 0 | 5 | 0 | 8 | 3 | 0 | 9 | 7 | 0 | 7 | 5 |
| Interrogative Form | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 12 | 14 | 0 | 25 | 3 | 7 | 4 | 1 | 13 | 7 | 5 |
| Present Tense | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 29 | 18 | 33 | 0 | 19 | 14 | 16 | 25 | 25 | 16 | 18 |
| Past Tense | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 17 | 3 | 21 | 7 | 5 | 0 | 9 | 6 |
| Future Tense | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 9 | 3 | 0 | 3 | 3 |
| Grammatically Incorrect Usage | 0 | 0 | 18 | 0 | 18 | 18 | 0 | 0 | 14 | 0 | 0 | 9 | 9 | 11 | 14 | 0 | 11 | 9 |
| N= | 0 | 0 | 2 | 0 | 2 | 11 | 0 | 4 | 3 | 1 | 4 | 0 | 2 | 6 | 7 | 2 | 14 | 15 |
| Description of Self | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 7 | 0 |
| Description of others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 |
| Description of Own Feelings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 7 |
| Story/ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 7 |
| uction | 0 | 0 | 100 | 0 | 100 | 90 | 0 | 100 | 87 | 100 | 100 | 100 | 100 | 50 | 71 | 100 | 93 | 87 |

## ENGLISH-PREFERRING

| | Kun'jani | | | Kurt | | | Vanda | | | Donald | | | Elizabeth | | | Harold | | | Jajue | | | Jody | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 3 | 2 | 0 | 2 | 0 | 2 | 3 | 6 | 29 | 5 |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 50 | 0 | 0 | 0 | 17 | 35 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 33 | 100 | 0 | 0 | 0 | 50 | 100 | 17 | 3 | 60 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 20 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 7 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 17 | 14 | 20 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 2 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 100 |
| | 33 | 69 | 130 | 0 | 26 | 22 | 9 | 6 | 42 | 4 | 23 | 32 | 34 | 39 | 63 | 10 | 144 | 188 | 21 | 69 | 48 | 19 | 102 | 80 |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| | 25 | 42 | 30 | 0 | 39 | 41 | 22 | 50 | 33 | 25 | 17 | 22 | 35 | 33 | 38 | 40 | 27 | 37 | 29 | 40 | 42 | 32 | 30 | 24 |
| | 33 | 4 | 17 | 0 | 12 | 27 | 33 | 0 | 19 | 50 | 30 | 28 | 9 | 8 | 16 | 40 | 13 | 15 | 29 | 13 | 8 | 21 | 6 | 18 |
| | 6 | 4 | 8 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 6 | 3 | 0 | 6 | 0 | 0 | 1 | 5 | 0 | 4 | 5 | 0 | 3 |
| | 6 | 7 | 6 | 0 | 8 | 5 | 0 | 33 | 2 | 0 | 4 | 6 | 6 | 0 | 3 | 0 | 10 | 4 | 5 | 3 | 6 | 0 | 7 | 1 |
| | 0 | 6 | 1 | 0 | 4 | 0 | 0 | 0 | 5 | 0 | 17 | 3 | 6 | 15 | 5 | 0 | 10 | 4 | 5 | 3 | 2 | 10 | 13 | 9 |
| | 21 | 25 | 13 | 0 | 31 | 5 | 22 | 17 | 17 | 0 | 17 | 19 | 21 | 15 | 19 | 20 | 20 | 21 | 19 | 28 | 23 | 21 | 21 | 21 |
| | 6 | 3 | 14 | 0 | 0 | 9 | 0 | 0 | 7 | 25 | 4 | 6 | 9 | 5 | 5 | 0 | 5 | 4 | 0 | 4 | 2 | 11 | 0 | 9 |
| | 0 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 11 | 2 | 0 | 4 | 1 | 5 | 3 | 0 | 0 | 2 | 1 |
| | 6 | 3 | 9 | 0 | 8 | 14 | 11 | 0 | 14 | 0 | 9 | 6 | 12 | 13 | 6 | 0 | 18 | 12 | 5 | 6 | 15 | 0 | 14 | 16 |
| | 3 | 13 | 9 | 0 | 1 | 7 | 0 | 4 | 5 | 0 | 3 | 4 | 3 | 2 | 7 | 2 | 17 | 32 | 1 | 13 | 7 | 3 | 9 | 6 |
| | 0 | 15 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 11 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 25 | 67 | 60 | 14 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 33 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 33 | 0 | 17 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 100 | 69 | 78 | 0 | 100 | 100 | 0 | 100 | 90 | 0 | 100 | 50 | 33 | 60 | 86 | 100 | 100 | 81 | 100 | 100 | 100 | 67 | 56 | 83 |

# RELATIVE FREQUENCY OF OBSERVED PRACTICE WITH LANGUAGE COMPETENCIES BY INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: NUEVAS FRONTERAS

SPANISH-PREFERRING

| CHILD'S NAME | Miguel | | | Evelyn | | | Nelda | | | Odon | | | Juan | | | Ray | | | Arturo | | | Lina | | | Bonita | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SPANISH N= | 7 | 57 | 62 | 11 | 51 | 124 | 5 | 51 | 60 | 16 | 11 | 40 | 4 | 24 | 20 | 13 | 31 | 22 | 19 | 27 | 44 | 20 | 38 | 42 | 33 | 36 | 96 |
| LINGUISTIC COMPETENCE | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 29 | 33 | 34 | 27 | 36 | 29 | 20 | 26 | 40 | 6 | 18 | 35 | 25 | 38 | 30 | 15 | 29 | 36 | 42 | 33 | 32 | 50 | 29 | 24 | 24 | 28 | 31 |
| Incomplete Sentences | 29 | 23 | 16 | 27 | 10 | 21 | 40 | 35 | 12 | 38 | 55 | 13 | 50 | 17 | 35 | 39 | 23 | 14 | 5 | 33 | 14 | 5 | 13 | 29 | 33 | 19 | 11 |
| Plural Nouns | 0 | 0 | 6 | 9 | 0 | 4 | 0 | 4 | 10 | 31 | 9 | 3 | 0 | 8 | 0 | 0 | 3 | 0 | 0 | 0 | 5 | 5 | 3 | 2 | 9 | 14 | 5 |
| Negative Form | 14 | 5 | 8 | 0 | 6 | 8 | 0 | 2 | 3 | 0 | 0 | 8 | 0 | 4 | 5 | 6 | 7 | 5 | 5 | 0 | 9 | 5 | 10 | 10 | 3 | 3 | 12 |
| Interrogative Form | 0 | 7 | 3 | 9 | 12 | 6 | 40 | 2 | 10 | 25 | 0 | 5 | 25 | 4 | 10 | 0 | 7 | 9 | 11 | 4 | 11 | 10 | 11 | 12 | 3 | 3 | 6 |
| Present Tense | 29 | 18 | 11 | 28 | 26 | 19 | 0 | 22 | 15 | 0 | 9 | 20 | 0 | 25 | 5 | 15 | 26 | 23 | 32 | 22 | 23 | 15 | 29 | 19 | 12 | 22 | 15 |
| Past Tense | 0 | 9 | 3 | 0 | 4 | 10 | 0 | 2 | 3 | 0 | 18 | 13 | 0 | 0 | 10 | 15 | 7 | 9 | 5 | 0 | 5 | 5 | 3 | 0 | 6 | 8 | 13 |
| Future Tense | 0 | 2 | 10 | 0 | 4 | 2 | 0 | 4 | 5 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 2 | 3 | 0 | 4 |
| Grammatically Incorrect Usage | 0 | 4 | 8 | 0 | 4 | 2 | 0 | 4 | 2 | 0 | 0 | 5 | 0 | 0 | 4 | 8 | 0 | 5 | 0 | 0 | 2 | 5 | 3 | 2 | 6 | 3 | 4 |
| N= | 1 | 14 | 6 | 0 | 11 | 9 | 1 | 6 | 10 | 1 | 1 | 4 | 1 | 6 | 7 | 0 | 5 | 1 | 2 | 6 | 8 | 6 | 7 | 4 | 1 | 6 | 7 |
| FUNCTIONAL COMPETENCE | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Description of Self | 100 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 29 | 0 | 0 | 0 | 0 | 0 | 38 | 17 | 0 | 0 | 0 | 0 | 0 |
| Description of Others | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 |
| Description of Own Feelings | 0 | 0 | 17 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Telling of a Story/ Event | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Verbal Instruction | 0 | 100 | 83 | 0 | 100 | 67 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 83 | 43 | 0 | 100 | 100 | 50 | 100 | 63 | 83 | 100 | 75 | 100 | 100 | 100 |
| ENGLISH N= | 0 | 0 | 1 | 0 | 1 | 16 | 0 | 0 | 10 | 0 | 0 | 7 | 0 | 0 | 5 | 0 | 2 | 5 | 0 | 3 | 14 | 0 | 0 | 16 | 0 | 19 | 52 |
| LINGUISTIC COMPETENCE | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Complete Sentences | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 10 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 6 |
| Incomplete Sentences | 0 | 0 | 100 | 0 | 0 | 56 | 0 | 0 | 60 | 0 | 0 | 86 | 0 | 0 | 80 | 0 | 100 | 100 | 0 | 33 | 93 | 0 | 0 | 88 | 0 | 63 | 83 |
| Plural Nouns | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 6 | 0 | 5 | 2 |
| Negative Form | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interrogative Form | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 4 |
| Present Tense | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 |
| Past Tense | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Tense | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grammatically Incorrect Usage | 0 | 0 | 0 | 0 | 100 | 6 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 67 | 0 | 0 | 0 | 0 | 0 | 16 | 2 |
| N= | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| FUNCTIONAL COMPETENCE | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Description of Self | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Description of Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Description of Own Feelings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Telling of a Story/ Event | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 |
| Verbal Instruction | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

ENGLISH-PREFERRING

| CHILD'S NAME | Alberto | | | Janet | | | Tommy | | |
|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SPANISH N= | 5 | 9 | 14 | 28 | 48 | 64 | 3 | 11 | 41 |
| LINGUISTIC COMPETENCE | % | % | % | % | % | % | % | % | % |
| Complete Sentences | 60 | 11 | 29 | 43 | 38 | 44 | 33 | 18 | 29 |
| Incomplete Sentences | 0 | 56 | 43 | 11 | 8 | 5 | 67 | 18 | 24 |
| Plural Nouns | 0 | 0 | 0 | 4 | 2 | 3 | 0 | 27 | 7 |
| Negative Form | 0 | 22 | 7 | 4 | 4 | 3 | 0 | 0 | 2 |
| Interrogative Form | 0 | 0 | 7 | 11 | 15 | 6 | 0 | 27 | 12 |
| Present Tense | 80 | 11 | 15 | 11 | 17 | 33 | 0 | 9 | 14 |
| Past Tense | 20 | 0 | 0 | 14 | 4 | 5 | 0 | 0 | 10 |
| Future Tense | 0 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 |
| Grammatically Incorrect Usage | 0 | 0 | 0 | 4 | 6 | 0 | 0 | 0 | 0 |
| N= | 1 | 0 | 3 | 8 | 11 | 8 | 1 | 1 | 7 |
| FUNCTIONAL COMPETENCE | | | | | | | | | |
| Description of Self | 0 | 0 | 0 | 57 | 0 | 0 | 0 | 0 | 0 |
| Description of Others | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 |
| Description of Own Feelings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Telling of a Story/ Event | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 |
| Verbal Instruction | 100 | 0 | 100 | 43 | 100 | 75 | 100 | 100 | 100 |
| ENGLISH N= | 4 | 24 | 30 | 2 | 3 | 33 | 6 | 3 | 22 |
| LINGUISTIC COMPETENCE | | | | | | | | | |
| Complete Sentences | 50 | 21 | 33 | 0 | 33 | 21 | 17 | 0 | 5 |
| Incomplete Sentences | 0 | 13 | 23 | 100 | 67 | 39 | 33 | 67 | 59 |
| Plural Nouns | 0 | 8 | 3 | 0 | 0 | 9 | 0 | 0 | 0 |
| Negative Form | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interrogative Form | 0 | 8 | 10 | 0 | 0 | 6 | 17 | 0 | 9 |
| Present Tense | 0 | 33 | 17 | 0 | 0 | 15 | 17 | 0 | 14 |
| Past Tense | 25 | 4 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Future Tense | 25 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grammatically Incorrect Usage | 0 | 0 | 7 | 0 | 0 | 3 | 17 | 33 | 14 |
| N= | 1 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 |
| FUNCTIONAL COMPETENCE | | | | | | | | | |
| Description of Self | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 |
| Description of Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Description of Own Feelings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Telling of a Story/ Event | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Verbal Instruction | 100 | 0 | 75 | 0 | 0 | 100 | 0 | 0 | 0 |

-A 97-

# APPENDIX Q

## RELATIVE FREQUENCY OF OBSERVED PRACTICE WITH RECALL AND COMPREHENSION COMPETENCIES FOR INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME

# RELATIVE FREQUENCY OF OBSERVED PRACTICE WITH RECALL AND COMPREHENSION COMPETENCIES FOR INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: UN MARCO ABIERTO [1]

## SPANISH-PREFERRING

| CHILD'S NAME | Irma | | | Victoria | | | Crispine | | | Lea | | | Carolina | | | Jose | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 0 | 0 | 3 | 3 | 0 | 4 | 9 | 3 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 2 | 0 |
| **SPANISH** | | | | | | | | | | | | | | | | | | |
| Recall of outstanding events from a story | 0 | 0 | 0 | 67 | 0 | 60 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 33 | 33 | 0 | 20 | 22 | 33 | 100 | 0 | 0 | 100 | 0 | 100 | 0 | 75 | 50 | 0 |
| Provision of details about the home or classroom | 0 | 0 | 67 | 0 | 0 | 0 | 0 | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 50 | 0 |
| Identification of common sounds from home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N= | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 2 | 0 | 0 | 7 | 0 | 1 | 2 |
| **ENGLISH** | | | | | | | | | | | | | | | | | | |
| Recall of outstanding events from a story | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 61 | 0 | 100 | 0 |
| Provision of details about the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 0 | 0 |
| Identification of common sounds from home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | | | | | | | | | | | | | | | | | | |
| Spanish | NO | NO | 100 | 100 | NO | 100 | 100 | 100 | 17 | 0 | NO | 33 | NO | 100 | 0 | 100 | 67 | 0 |
| English | NO | NO | 0 | 0 | NO | 0 | 0 | 0 | 83 | 100 | NO | 67 | NO | 0 | 100 | 0 | 33 | 100 |

## ENGLISH-PREFERRING

| CHILD'S NAME | Ernesto | | | Lucia | | | Candido | | | Barbara | | | Danny | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **SPANISH** | | | | | | | | | | | | | | | |
| Recall of outstanding events from a story | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Provision of details about the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of common sounds from home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N= | 0 | 4 | 6 | 0 | 3 | 2 | 1 | 3 | 2 | 2 | 6 | 4 | 0 | 2 | 7 |
| **ENGLISH** | | | | | | | | | | | | | | | |
| Recall of outstanding events from a story | 0 | 25 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recall of what s/he did in the home or classroom | 0 | 75 | 50 | 0 | 33 | 0 | 100 | 100 | 50 | 100 | 100 | 100 | 0 | 100 | 0 |
| Provision of details about the home or classroom | 0 | 0 | 17 | 0 | 33 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of common sounds from home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | | | | | | | | | | | | | | | |
| Spanish | NO | 0 | 0 | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NO | 0 | NO |
| English | NO | 100 | 100 | NO | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | NO | 100 | NO |

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed.

# RELATIVE FREQUENCY OF OBSERVED PRACTICE WITH RECALL AND COMPREHENSION COMPETENCIES FOR INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: AMANECER





| CHILD'S NAME | SPANISH-PREFERRING | | | | | | | | | | | | ENGLISH-PREFERRING | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Julio | | | Ramona | | | Doris | | | James | | | Claudia | | | Clotilde | | | David | | | Judy | | | Martin | | | Gregorio | | | Ruth | | |
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SPANISH N= | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 4 | 4 | 1 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Recall of outstanding events from a story | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 | % 0 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| Provision of details about the home or classroom | 0 | 100 | 50 | 0 | 0 | 0 | 100 | 75 | 100 | 100 | 100 | 100 | 100 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of common sounds from home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENGLISH N= | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 1 | 0 | 2 | 2 | 2 | 2 | 7 | 2 | 4 | 3 | 3 | 1 | 8 | 2 | 5 | 2 | 0 | 1 | 1 | 2 | 3 | 3 |
| Recall of outstanding events from a story | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 50 | 50 | 33 | 0 | 0 | 13 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 |
| Provision of details about the home or community | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 71 | 50 | 50 | 67 | 67 | 100 | 87 | 0 | 100 | 100 | 0 | 100 | 100 | 100 | 67 | 100 |
| Identification of common sounds from home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 100 | 50 | NO[2] | NO | NO | 50 | 58 | 80 | 100 | 100 | 67 | 100 | 50 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| English | 0 | 0 | 50 | NO | NO | NO | 50 | 43 | 20 | 0 | 0 | 33 | 0 | 50 | 100 | 100 | 100 | 100 | 100 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 100 | 75 |

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed.

# RELATIVE FREQUENCY OF OBSERVED PRACTICE WITH RECALL AND COMPREHENSION COMPETENCIES FOR INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: ALERTA

QUALITY OF RECALL AND COMPREHENSION BY INDIVIDUAL SUBSAMPLE CHILDREN[1]

SPANISH-PREFERRING

| CHILD'S NAME | Francisco | | | Alicia | | | Karla | | | Judith | | | Veronica | | | Shi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SPANISH N= | 0 | 0 | 2 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| Recall of outstanding events from a story | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 0 | 0 | 0 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 25 | 0 | 0 | 0 |
| Provision of details about the home or classroom | 0 | 0 | 100 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of common sounds from home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENGLISH N= | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 13 | 1 | 0 | 3 | 0 | 2 | 2 |
| Recall of outstanding events from a story | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 0 |
| Provision of details about the home or classroom | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 75 | 0 | 100 |
| Identification of common sounds from home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | | | | | | | | | | | | | | | | | | |
| Spanish | NO[2] | NO | 100 | NO | NO | 83 | NO | NO | NO | NO | NO | 0 | 0 | 100 | 25 | NO | 0 | 0 |
| English | NO | NO | 0 | NO | NO | 20 | NO | NO | NO | NO | 100 | 100 | 100 | 0 | 75 | NO | 100 | 100 |

ENGLISH-PREFERRING

| CHILD'S NAME | Kun'jani | | | Kurt | | | Wanda | | | Donald | | | Elizabeth | | | Harold | | | Jaime | | | Jody | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SPANISH N= | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Recall of outstanding events from a story | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| Provision of details about the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of common sounds from home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENGLISH N= | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 3 |
| Recall of outstanding events from a story | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| Provision of details about the home or classroom | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 33 |
| Identification of common sounds from home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | NO | NO | 0 | NO | NO | NO | NO | NO | 0 | 0 | 0 | NO | 0 | NO | NO | NO | NO | NO | 0 | NO | 50 | NO | NO | 0 |
| English | NO | NO | 100 | NO | NO | NO | NO | NO | 100 | 100 | 100 | NO | 100 | NO | NO | NO | NO | NO | 100 | NO | 50 | NO | NO | 100 |

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed.

# RELATIVE FREQUENCY OF OBSERVED PRACTICE WITH RECALL AND COMPREHENSION COMPETENCIES FOR INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: NUEVAS FRONTERAS[1]

SPANISH-PREFERRING

| CHILD'S NAME | Miguel | | | Evelyn | | | Nelda | | | Odon | | | Juan | | | Ray | | | Arturo | | | Linda | | | Bonita | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SPANISH N= | 2 | 1 | 5 | 0 | 0 | 12 | 0 | 0 | 7 | 0 | 3 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 1 | 9 |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Recall of outstanding events from a story | 100 | 100 | 60 | 0 | 0 | 67 | 0 | 0 | 14 | 0 | 33 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 89 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 |
| Provision of details about the home or classroom | 0 | 0 | 40 | 0 | 0 | 17 | 0 | 0 | 86 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 100 | 0 | 0 | 100 | 11 |
| Identification of common sounds from the home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENGLISH N= | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 20 | 0 |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Recall of outstanding events from a story | 100 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Provision of details about the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 |
| Identification of common sounds from the home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 100 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 67 | 100 | 100 | NO[2] | NO | 92 | NO | NO | 88 | NO | 60 | 100 | NO | 0 | 75 | NO | 0 | NO | NO | NO | 40 | NO | 50 | 0 | 100 | 5 | 100 |
| English | 33 | 0 | 0 | NO | NO | 8 | NO | NO | 12 | NO | 40 | 0 | NO | 100 | 25 | NO | 100 | NO | NO | NO | 60 | NO | 50 | 100 | 0 | 95 | 0 |

ENGLISH-PREFERRING

| CHILD'S NAME | Alberto | | | Janet | | | Tommy | | |
|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SPANISH N= | 0 | 0 | 1 | 2 | 0 | 3 | 0 | 0 | 5 |
| | % | % | % | % | % | % | % | % | % |
| Recall of outstanding events from a story | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 5 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Provision of details about the home or classroom | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 0 | 20 |
| Identification of common sounds from the home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENGLISH N= | | | | | | | | | |
| | % | % | % | % | % | % | % | % | % |
| Recall of outstanding events from a story | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recall of what s/he did in the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Provision of details about the home or classroom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of common sounds from the home or community | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of familiar voices | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Identification of spoken phrases, sentences, story with pictures | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Incorrect response in terms of context | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to understand at all | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | | | | | | | | | |
| Spanish | NO | NO | 50 | 100 | NO | NO | NO | NO | 100 |
| English | NO | NO | 50 | 0 | NO | NO | NO | NO | 0 |

[1] Percentage totals may not equal 100% due to roundings.

[2] NO = Not observed.

# APPENDIX R

## COMPARISON OF OBSERVED PRACTICE WITH DIFFERENT AREAS OF CONCEPT DEVELOPMENT BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME

# COMPARISON OF OBSERVED PRACTICE WITH DIFFERENT AREAS OF CONCEPT DEVELOPMENT BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME:

## UN MARCO ABIERTO[1]

### SPANISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| VISUAL DISCRIMINATION | | | | | | |
| Spanish | 33 | 50 | 17 | 0 | 67 | 33 |
| English | 33 | 33 | 33 | 67 | 17 | 17 |
| Non Language Specific | 67 | 33 | 0 | 17 | 50 | 33 |
| SERIATION/SEQUENCING | | | | | | |
| Spanish | 17 | 0 | 83 | 33 | 0 | 67 |
| English | NO | NO | NO | 30 | 0 | 67 |
| Non Language Specific | NO | NO | NO | 33 | 0 | 67 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | 17 | 17 | 67 | 0 | 17 | 83 |
| Non Language Specific | 67 | 33 | 0 | 50 | 33 | 17 |
| SPATIAL AND TIME RELATIONS | | | | | | |
| Spanish | 17 | 17 | 67 | 0 | 17 | 83 |
| English | NO | NO | NO | 17 | 0 | 83 |
| Non Language Specific | NO | NO | NO | NO | NO | NO |
| SYMBOLIC REPRESENTATION | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | 0 | 17 | 83 | 17 | 17 | 67 |
| Non Language Specific | 100 | 0 | 0 | 83 | 17 | 0 |
| UTILIZATION OF OBJECTS | | | | | | |
| Spanish | 0 | 83 | 17 | 17 | 83 | 0 |
| English | NO | NO | NO | 33 | 0 | 67 |
| Non Language Specific | NO | NO | NO | NO | NO | NO |
| OVERALL | | | | | | |
| Spanish | 17 | 83 | 0 | 17 | 83 | 0 |
| English | 33 | 33 | 33 | 67 | 33 | 0 |
| Non Language Specific | 67 | 17 | 17 | 83 | 17 | 0 |

N=6

### ENGLISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| VISUAL DISCRIMINATION | | | | | | |
| Spanish | 20 | 0 | 80 | NO | NO | NO |
| English | 40 | 40 | 20 | 60 | 40 | 0 |
| Non Language Specific | 20 | 40 | 40 | 20 | 40 | 40 |
| SERIATION/SEQUENCING | | | | | | |
| Spanish | 20 | 0 | 80 | NO | NO | NO |
| English | NO | NO | NO | 40 | 0 | 60 |
| Non Language Specific | 0 | 20 | 80 | 40 | 20 | 40 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | |
| Spanish | 20 | 0 | 80 | NO | NO | NO |
| English | NO | NO | NO | 20 | 0 | 80 |
| Non Language Specific | 0 | 60 | 40 | 60 | 40 | 0 |
| SPATIAL AND TIME RELATIONS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | 60 | 0 | 40 | 20 | 0 | 80 |
| Non Language Specific | 20 | 0 | 80 | NO | NO | NO |
| SYMBOLIC REPRESENTATION | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | NO | NO | NO | 20 | 0 | 80 |
| Non Language Specific | 40 | 60 | 0 | 40 | 60 | 0 |
| UTILIZATION OF OBJECTS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | 40 | 40 | 20 | 20 | 40 | 40 |
| Non Language Specific | 20 | 0 | 80 | NO | NO | NO |
| OVERALL | | | | | | |
| Spanish | 60 | 0 | 40 | NO | NO | NO |
| English | 60 | 40 | 0 | 60 | 40 | 0 |
| Non Language Specific | 40 | 60 | 0 | 40 | 60 | 0 |

N=5

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed.

# COMPARISON OF OBSERVED PRACTICE WITH DIFFERENT AREAS OF CONCEPT DEVELOPMENT BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: ALERTA [1]

## SPANISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| VISUAL DISCRIMINATION | | | | | | |
| Spanish | 33 | 17 | 50 | 50 | 0 | 50 |
| English | 33 | 50 | 17 | 50 | 50 | 0 |
| Non Language Specific | NO | NO | NO | NO | NO | NO |
| SERIATION/SEQUENCING | | | | | | |
| Spanish | 33 | 0 | 67 | 17 | 0 | 83 |
| English | 33 | 0 | 67 | 33 | 0 | 67 |
| Non Language Specific | 17 | 0 | 83 | 67 | 0 | 33 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | |
| Spanish | 17 | 0 | 83 | NO | NO | NO |
| English | 17 | 0 | 83 | 17 | 0 | 83 |
| Non Language Specific | NO | NO | NO | 17 | 0 | 83 |
| SPATIAL AND TIME RELATIONS | | | | | | |
| Spanish | NO | NO | NO | 17 | 0 | 83 |
| English | 0 | 17 | 83 | 12 | 17 | 67 |
| Non Language Specific | 33 | 0 | 67 | 17 | 0 | 83 |
| SYMBOLIC REPRESENTATION | | | | | | |
| Spanish | 33 | 0 | 67 | NO | NO | NO |
| English | NO | NO | NO | 17 | 0 | 83 |
| Non Language Specific | 67 | NO | 33 | 100 | 0 | 0 |
| UTILIZATION OF OBJECTS | | | | | | |
| Spanish | NO | NO | NO | 33 | 0 | 67 |
| English | NO | NO | NO | NO | NO | NO |
| Non Language Specific | NO | NO | NO | 17 | 0 | 83 |
| OVERALL | | | | | | |
| Spanish | 67 | 0 | 33 | 67 | 0 | 33 |
| English | 50 | 33 | 17 | 67 | 33 | 0 |
| Non Language Specific | 100 | 0 | 0 | 100 | 0 | 0 |

N = 6

## ENGLISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| VISUAL DISCRIMINATION | | | | | | |
| Spanish | 37 | 0 | 63 | NO [2] | NO | NO |
| English | 50 | 50 | 0 | 13 | 63 | 25 |
| Non Language Specific | NO | NO | NO | 13 | 0 | 87 |
| SERIATION/SEQUENCING | | | | | | |
| Spanish | 37 | 0 | 63 | 13 | 0 | 87 |
| English | 63 | 13 | 25 | 13 | 13 | 75 |
| Non Language Specific | 75 | 25 | 50 | 25 | 13 | 63 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | 50 | 0 | 50 | 13 | 0 | 87 |
| Non Language Specific | 13 | 0 | 87 | 63 | 0 | 37 |
| SPATIAL AND TIME RELATIONS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | 13 | 0 | 87 | NO | NO | NO |
| Non Language Specific | 13 | 25 | 63 | 37 | 13 | 50 |
| SYMBOLIC REPRESENTATION | | | | | | |
| Spanish | 13 | 0 | 87 | NO | NO | NO |
| English | 63 | 0 | 37 | 13 | 0 | 87 |
| Non Language Specific | 37 | 25 | 37 | 50 | 37 | 13 |
| UTILIZATION OF OBJECTS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | 0 | 13 | 87 | 50 | 0 | 50 |
| Non Language Specific | NO | NO | NO | NO | NO | NO |
| OVERALL | | | | | | |
| Spanish | 75 | 0 | 25 | 135 | 0 | 87 |
| English | 50 | 50 | 0 | 37 | 50 | 13 |
| Non Language Specific | 50 | 25 | 13 | 67 | 37 | 0 |

N = 8

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed.

# COMPARISON OF OBSERVED PRACTICE WITH DIFFERENT AREAS OF CONCEPT DEVELOPMENT BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME:

## AMANECER[1]

### SPANISH PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| VISUAL DISCRIMINATION | | | | | | |
| Spanish | 40 | 20 | 40 | 40 | 20 | 40 |
| English | 80 | 0 | 20 | 80 | 0 | 20 |
| Non Language Specific | NO[2] | NO | NO | NO | NO | NO |
| SERIATION/SEQUENCING | | | | | | |
| Spanish | NO | NO | | 20 | 0 | 80 |
| English | 20 | 20 | 60 | 0 | 20 | 80 |
| Non Language Specific | 20 | 0 | 80 | 20 | 0 | 80 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | |
| Spanish | 0 | 60 | 40 | 0 | 60 | 40 |
| English | NO | NO | NO | 20 | 0 | 80 |
| Non Language Specific | 0 | 20 | 80 | 0 | 20 | 80 |
| SPATIAL AND TIME RELATIONS | | | | | | |
| Spanish | 0 | 20 | 80 | 0 | 20 | 80 |
| English | NO | NO | NO | 20 | 0 | 80 |
| Non Language Specific | NO | NO | NO | 20 | 0 | 80 |
| SYMBOLIC REPRESENTATION | | | | | | |
| Spanish | NO | NO | NO | 20 | 0 | 80 |
| English | 20 | 0 | 80 | 40 | 0 | 60 |
| Non Language Specific | 60 | 20 | 20 | 60 | 40 | 0 |
| UTILIZATION OF OBJECTS | | | | | | |
| Spanish | 0 | 20 | 80 | 0 | 20 | 80 |
| English | NO | NO | NO | NO | NO | NO |
| Non Language Specific | 20 | 0 | 80 | NO | NO | NO |
| OVERALL | | | | | | |
| Spanish | 40 | 0 | 60 | 20 | 60 | 20 |
| English | 80 | 0 | 20 | 60 | 20 | 20 |
| Non Language Specific | 90 | 60 | 0 | 40 | 40 | 20 |

N = 5

### ENGLISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| VISUAL DISCRIMINATION | | | | | | |
| Spanish | 17 | 0 | 83 | 17 | 0 | 83 |
| English | 100 | 0 | 0 | 67 | 17 | 17 |
| Non Language Specific | 17 | 0 | 83 | NO | NO | NO |
| SERIATION/SEQUENCING | | | | | | |
| Spanish | 0 | 17 | 83 | 0 | 17 | 83 |
| English | 17 | 0 | 83 | 17 | 0 | 83 |
| Non Language Specific | 0 | 33 | 67 | 67 | 17 | 17 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | 17 | 50 | 33 | 50 | 17 | 33 |
| Non Language Specific | 17 | 0 | 83 | NO | NO | NO |
| SPATIAL AND TIME RELATIONS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | NO | NO | NO | NO | NO | NO |
| Non Language Specific | NO | NO | NO | NO | NO | NO |
| SYMBOLIC REPRESENTATION | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | NO | NO | NO | NO | NO | NO |
| Non Language Specific | 67 | 17 | 17 | 50 | 17 | 33 |
| UTILIZATION OF OBJECTS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | NO | NO | NO | NO | NO | NO |
| Non Language Specific | 17 | 17 | 67 | 0 | 17 | 83 |
| OVERALL | | | | | | |
| Spanish | 17 | 17 | 67 | 17 | 17 | 67 |
| English | 67 | 17 | 17 | 67 | 33 | 0 |
| Non Language Specific | 33 | 50 | 17 | 50 | 50 | 0 |

N=6

1 Percentage totals may not equal 100% due to rounding.

2 NO = Not observed.

# COMPARISON OF OBSERVED PRACTICE WITH DIFFERENT AREAS OF CONCEPT DEVELOPMENT BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: NUEVAS FRONTERAS[1]

## SPANISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| VISUAL DISCRIMINATION | | | | | | |
| Spanish | 44 | 33 | 22 | 44 | 44 | 11 |
| English | 33 | 0 | 67 | 89 | 11 | 0 |
| Non Language Specific | 33 | 67 | 0 | NO[2] | NO | NO |
| SERIATION/SEQUENCING | | | | | | |
| Spanish | 0 | 11 | 89 | 11 | 11 | 78 |
| English | 0 | 11 | 89 | 33 | 11 | 56 |
| Non Language Specific | NO | NO | NO | 33 | 0 | 67 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | NO | NO | NO | NO | NO | NO |
| Non Language Specific | 11 | 0 | 89 | 33 | 0 | 67 |
| SPATIAL AND TIME RELATIONS | | | | | | |
| Spanish | 22 | 0 | 78 | NO | NO | NO |
| English | NO | NO | NO | NO | NO | NO |
| Non Language Specific | NO | NO | NO | NO | NO | NO |
| SYMBOLIC REPRESENTATION | | | | | | |
| Spanish | 11 | 22 | 67 | 22 | 22 | 56 |
| English | 22 | 11 | 67 | 22 | 11 | 67 |
| Non Language Specific | 67 | 33 | 0 | 56 | 33 | 11 |
| UTILIZATION OF OBJECTS | | | | | | |
| Spanish | 11 | 0 | 89 | 22 | 0 | 78 |
| English | NO | NO | NO | 11 | 0 | 89 |
| Non Language Specific | 11 | 0 | 89 | NO | NO | NO |
| OVERALL | | | | | | |
| Spanish | 56 | 44 | 0 | 44 | 56 | 0 |
| English | 56 | 11 | 33 | 89 | 11 | 0 |
| Non Language Specific | 89 | 11 | 0 | 89 | 11 | 0 |

N = 9

## ENGLISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| VISUAL DISCRIMINATION | | | | | | |
| Spanish | 33 | 33 | 33 | 33 | 33 | 33 |
| English | 33 | 33 | 33 | 67 | 33 | 0 |
| Non Language Specific | NO | NO | NO | 33 | 0 | 67 |
| SERIATION/SEQUENCING | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | 0 | 33 | 67 | 33 | 33 | 33 |
| Non Language Specific | 33 | 0 | 67 | 33 | 0 | 67 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | |
| Spanish | 0 | 33 | 67 | 0 | 33 | 67 |
| English | NO | NO | NO | NO | NO | NO |
| Non Language Specific | 0 | 33 | 67 | 0 | 33 | 67 |
| SPATIAL AND TIME RELATIONS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | NO | NO | NO | NO | NO | NO |
| Non Language Specific | NO | NO | NO | NO | NO | NO |
| SYMBOLIC REPRESENTATION | | | | | | |
| Spanish | 0 | 33 | 67 | 0 | 33 | 67 |
| English | 33 | 0 | 67 | 33 | 0 | 67 |
| Non Language Specific | 100 | 0 | 0 | 100 | 0 | 0 |
| UTILIZATION OF OBJECTS | | | | | | |
| Spanish | NO | NO | NO | NO | NO | NO |
| English | NO | NO | NO | NO | NO | NO |
| Non Language Specific | NO | NO | NO | NO | NO | NO |
| OVERALL | | | | | | |
| Spanish | 0 | 67 | 33 | 0 | 67 | 33 |
| English | 0 | 100 | 0 | 33 | 67 | 0 |
| Non Language Specific | 100 | 0 | 0 | 100 | 0 | 0 |

N = 3

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed.

# APPENDIX S

## RELATIVE FREQUENCY OF OBSERVED PRACTICE IN SIX AREAS OF CONCEPT DEVELOPMENT FOR INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME

# RELATIVE FREQUENCY OF OBSERVED PRACTICE IN SIX AREAS OF CONCEPT DEVELOPMENT FOR INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: ALERTA

## SPANISH-PREFERRING

| CHILD'S NAME | Francisco | | | Alicia | | | Maria | | | Judith | | | Veronica | | | Shirley | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 0 | 3 | 7 | 3 | 4 | 22 | 0 | 11 | 7 | 0 | 8 | 35 | 6 | 11 | 17 | 1 | 11 | |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| VISUAL DISCRIMINATION | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 67 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 25 | 3 | 33 | 18 | 35 | 0 | 0 | 0 |
| English | 0 | 0 | 43 | 67 | 25 | 9 | 0 | 9 | 29 | 0 | 13 | 9 | 67 | 9 | 0 | 100 | 9 | 50 |
| N.L.S.[2] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SERIATION/SEQUENCING | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 38 | 0 | 0 | 37 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 18 | 0 | 0 | 13 | 17 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 14 | 0 | 0 | 29 | 0 | 9 | 5 | 0 | 0 | 0 |
| MATCHING/CLASSIFICATION/GROUPING OF OBJECTS | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SPATIAL & TIME RELATIONS | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 |
| SYMBOLIC REPRESENTATION | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 29 | 0 | 50 | 14 | 0 | 56 | 57 | 0 | 13 | 11 | 0 | 0 | 29 | 0 | 91 | 50 |
| UTILIZATION OF OBJECTS | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 29 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | | | | | | | | | | |
| Spanish | NO[3] | 67 | 29 | 0 | 25 | 32 | NO | 0 | 0 | NO | 63 | 3 | 33 | 82 | 41 | 0 | 0 | 0 |
| English | NO | 0 | 43 | 100 | 25 | 18 | NO | 37 | 29 | NO | 25 | 57 | 67 | 9 | 6 | 0 | 9 | 50 |
| N.L.S. | NO | 33 | 29 | 0 | 50 | 50 | NO | 64 | 71 | NO | 13 | 40 | 0 | 9 | 53 | 100 | 91 | 50 |

## ENGLISH-PREFERRING

| CHILD'S NAME | Kumjani | | | Kurt | | | Wanda | | | Donald | | | Elizabeth | | | Harold | | | Jaime | | | Jody | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 7 | 20 | 5 | 0 | 11 | 1 | 3 | 4 | 5 | 1 | 7 | 6 | 4 | 10 | 11 | 4 | 15 | 23 | 7 | 20 | 11 | 2 | 10 | 2 |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| VISUAL DISCRIMINATION | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 20 | 0 |
| English | 57 | 25 | 40 | 0 | 64 | 0 | 67 | 50 | 20 | 0 | 14 | 0 | 50 | 0 | 27 | 25 | 27 | 26 | 71 | 15 | 0 | 50 | 70 | 0 |
| N.L.S.[2] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SERIATION/SEQUENCING | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 15 | 0 | 0 | 9 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 10 | 0 | 0 | 18 | 0 | 0 | 50 | 0 | 0 | 43 | 0 | 0 | 0 | 18 | 75 | 7 | 0 | 0 | 25 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 10 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 29 | 14 | 0 | 9 | 50 | 0 | 50 |
| MATCHING/CLASSIFICATION/GROUPING OF OBJECTS | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 10 | 0 | 0 | 67 | 18 | 0 | 10 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 10 | 9 | 0 | 0 | 9 | 0 | 0 | 9 | 0 | 0 | 0 |
| SPATIAL & TIME RELATIONS | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 20 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 7 | 4 | 14 | 0 | 18 | 0 | 0 | 0 |
| SYMBOLIC REPRESENTATION | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 9 | 0 | 13 | 0 | 0 | 5 | 0 | 0 | 10 | 0 |
| N.L.S. | 0 | 30 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 67 | 50 | 40 | 0 | 0 | 27 | 26 | 0 | 30 | 64 | 0 | 0 | 50 |
| UTILIZATION OF OBJECTS | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 14 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 9 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 15 | 0 | 0 | 9 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 13 | 0 | 0 | 15 | 0 | 0 | 20 | 0 |
| English | 71 | 45 | 80 | 0 | 82 | 0 | 67 | 100 | 20 | 0 | 100 | 17 | 50 | 30 | 64 | 100 | 53 | 52 | 71 | 55 | 0 | 50 | 80 | 0 |
| N.L.S. | 29 | 40 | 20 | 0 | 9 | 100 | 33 | 0 | 60 | 100 | 0 | 83 | 50 | 50 | 36 | 0 | 33 | 48 | 29 | 30 | 100 | 50 | 0 | 100 |

[1] Percentage totals may not equal 100% due to rounding.

[2] N.L.S. = Non Language Specific

[3] NO = Not observed

# RELATIVE FREQUENCY OF OBSERVED PRACTICE IN SIX AREAS OF CONCEPT DEVELOPMENT FOR INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: AMANECER

## SPANISH-PREFERRING

| CHILD'S NAME | Julio | | | Ramona | | | Doris | | | James | | | Claudia | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 3 | 5 | 15 | 1 | 8 | 1 | 1 | 6 | 7 | 4 | 14 | 7 | 5 | 6 | |
| VISUAL DISCRIMINATION | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Spanish | 67 | 0 | 47 | 0 | 38 | 0 | 0 | 17 | 28 | 0 | 0 | 14 | 0 | 0 | 0 |
| English | 0 | 20 | 13 | 0 | 0 | 0 | 0 | 33 | 14 | 0 | 7 | 14 | 20 | 50 | 25 |
| N.L.S.[2] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [illegible] | 0 |
| SERIATION/ SEQUENCING | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 17 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 28 | 0 | 0 | 0 |
| MATCHING/CLASSIFICATION/GROUPING OF OBJECTS | | | | | | | | | | | | | | | |
| Spanish | 33 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 20 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SPATIAL & TIME RELATIONS | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 |
| SYMBOLIC REPRESENTATION | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 14 | 0 | 28 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 80 | 13 | 100 | 50 | 100 | 100 | 17 | 29 | 25 | 57 | 43 | 20 | 33 | 25 |
| UTILIZATION OF OBJECTS | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 20 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | | | | | | | |
| Spanish | 100 | 0 | 67 | 0 | 37 | 0 | 0 | 17 | 29 | 50 | 7 | 14 | 40 | 0 | 0 |
| English | 0 | 20 | 13 | 0 | 0 | 0 | 0 | 50 | 29 | 25 | 36 | 14 | 20 | 67 | 75 |
| N.L.S. | 0 | 80 | 13 | 100 | 63 | 100 | 100 | 33 | 42 | 25 | 57 | 71 | 40 | 33 | 25 |

## ENGLISH-PREFERRING

| CHILD'S NAME | Clotilde | | | David | | | Judy | | | Martin | | | Gregorio | | | Ruth | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 1 | 6 | 9 | 0 | 4 | 4 | 13 | 11 | 10 | 4 | 2 | 12 | 1 | 5 | 3 | 2 | 17 | 6 |
| VISUAL DISCRIMINATION | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 33 |
| English | 0 | 33 | 44 | 0 | 25 | 50 | 15 | 45 | 60 | 50 | 100 | 42 | 0 | 40 | 67 | 0 | 71 | 0 |
| N.L.S.[2] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SERIATION/ SEQUENCING | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 44 | 0 | 0 | 25 | 8 | 0 | 10 | 0 | 0 | 8 | 0 | 0 | 0 | 50 | 0 | 0 |
| MATCHING/CLASSIFICATION/GROUPING OF OBJECTS | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 50 | 11 | 0 | 0 | 0 | 26 | 0 | 20 | 50 | 0 | 8 | 0 | 0 | 0 | 50 | 6 | 67 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SPATIAL & TIME RELATIONS | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SYMBOLIC REPRESENTATION | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 17 | 0 | 0 | 75 | 25 | 62 | 18 | 0 | 0 | 0 | 42 | 0 | 40 | 33 | 0 | 12 | 0 |
| UTILIZATION OF OBJECTS | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | NO | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 33 |
| English | 0 | 88 | 56 | NO | 25 | 50 | 23 | 64 | 90 | 100 | 100 | 50 | 100 | 40 | 67 | 50 | 77 | 67 |
| N.L.S. | 100 | 17 | 45 | NO | 75 | 50 | 69 | 45 | 10 | 0 | 0 | 50 | 0 | 60 | 33 | 50 | 11 | 0 |

[1] Percentage totals may not equal 100% due to rounding.

[2] N.L.S. = Non Language Specific

# RELATIVE FREQUENCY OF OBSERVED PRACTICE IN SIX AREAS OF CONCEPT DEVELOPMENT FOR INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: UN MARCO ABIERTO

SPANISH-PREFERRING

| CHILD'S NAME | Irma | | | Victoria | | | Crispine | | | Lea | | | Carolina | | | Jose | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| | 3 | 5 | 5 | 7 | 12 | 17 | 10 | 10 | 10 | 13 | 15 | 12 | 10 | 23 | 14 | 21 | 13 | 19 |
| VISUAL DISCRIMINATION | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 20 | 0 | 57 | 33 | 47 | 30 | 10 | 17 | 0 | 0 | 0 | 10 | 22 | 0 | 43 | 15 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 20 | 25 | 54 | 40 | 27 | 10 | 39 | 14 | 19 | 0 | 26 |
| N.L.S.[2] | 0 | 20 | 0 | 14 | 25 | 6 | 30 | 10 | 17 | 8 | 13 | 8 | 10 | 9 | 0 | 5 | 31 | 11 |
| SERIATION/SEQUENCING | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 16 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 21 | 0 | 0 | 0 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 20 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 67 | 20 | 0 | 0 | 8 | 29 | 0 | 10 | 12 | 0 | 7 | 0 | 20 | 0 | 0 | 0 | 8 | 16 |
| SPATIAL & TIME RELATIONS | | | | | | | | | | | | | | | | | | |
| Spanish | 33 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SYMBOLIC REPRESENTATION | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| N.L.S. | 0 | 40 | 40 | 14 | 33 | 12 | 0 | 10 | 25 | 15 | 33 | 42 | 20 | 26 | 43 | 19 | 46 | 21 |
| UTILIZATION OF OBJECTS | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 20 | 14 | 0 | 0 | 40 | 20 | 0 | 15 | 0 | 0 | 10 | 0 | 7 | 14 | 0 | 0 |
| English | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | | | | | | | | | | |
| Spanish | 33 | 20 | 40 | 71 | 33 | 47 | 70 | 50 | 21 | 15 | 0 | 0 | 20 | 26 | 7 | 57 | 15 | 5 |
| English | 0 | 0 | 20 | 0 | 0 | 6 | 0 | 20 | 25 | 62 | 47 | 25 | 30 | 39 | 28 | 19 | 0 | 47 |
| N.L.S. | 67 | 80 | 40 | 28 | 66 | 47 | 30 | 30 | 54 | 23 | 53 | 75 | 50 | 35 | 64 | 24 | 85 | 48 |

ENGLISH-PREFERRING

| CHILD'S NAME | Ernesto | | | Lucia | | | Candido | | | Barbara | | | Danny | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| | 2 | 4 | 12 | 7 | 11 | 2 | 7 | 5 | 15 | 4 | 19 | 10 | 14 | 18 | 20 |
| VISUAL DISCRIMINATION | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| English | 50 | 25 | 59 | 14 | 45 | 0 | 0 | 0 | 7 | 75 | 53 | 30 | 14 | 72 | 25 |
| N.L.S.[2] | 0 | 0 | 0 | 43 | 18 | 0 | 14 | 20 | 0 | 0 | 0 | 0 | 21 | 6 | 10 |
| SERIATION/SEQUENCING | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 5 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 20 | 7 | 0 | 5 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 8 | 14 | 0 | 0 | 0 | 0 | 13 | 25 | 0 | 10 | 7 | 0 | 15 |
| SPATIAL & TIME RELATIONS | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 40 | 7 | 0 | 5 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| SYMBOLIC REPRESENTATION | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| N.L.S. | 50 | 25 | 25 | 14 | 9 | 0 | 14 | 20 | 53 | 0 | 12 | 30 | 50 | 11 | 25 |
| UTILIZATION OF OBJECTS | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 25 | 0 | 14 | 9 | 0 | 71 | 20 | 0 | 0 | 0 | 10 | 0 | 5 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 6 | 0 |
| English | 50 | 75 | 59 | 28 | 54 | 100 | 71 | 60 | 27 | 75 | 58 | 40 | 14 | 77 | 45 |
| N.L.S. | 50 | 25 | 41 | 71 | 36 | 0 | 28 | 40 | 73 | 25 | 37 | 60 | 85 | 17 | 55 |

[1] Percentage totals may not equal 100% due to rounding.

[2] N.L.S. = Non Language Specific

# RELATIVE FREQUENCY OF OBSERVED PRACTICE IN SIX AREAS OF CONCEPT DEVELOPMENT FOR INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: NUEVAS FRONTERAS[1]

SPANISH- PREFERRING

| CHILD'S NAME | Miguel | | | Evelyn | | | Nelda | | | Odon | | | Juan | | | Ray | | | Arturo | | | Linda | | | Bonita | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 0 | 10 | 15 | 3 | 7 | 13 | 0 | 4 | 14 | 6 | 1 | 20 | 2 | 6 | 7 | 1 | 13 | 15 | 4 | 10 | 14 | 1 | 6 | 10 | 5 | 20 | 84 |
| VISUAL DISCRIMINATION | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Spanish | 0 | 40 | 0 | 0 | 0 | 39 | 0 | 25 | 18 | 0 | 0 | 15 | 50 | 67 | 29 | 100 | 8 | 20 | 75 | 20 | 14 | 0 | 17 | 10 | 60 | 5 | 1 |
| English | 0 | 10 | 7 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 14 | 0 | 8 | 47 | 0 | 0 | 7 | 0 | 0 | 10 | 0 | 60 | 75 |
| N.L.S.[2] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| CREATION/SEQUENCING | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 17 | 0 | 5 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 10 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SPATIAL & TIME RELATIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SYMBOLIC REPRESENTATION | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 40 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 0 | 0 | 33 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 14 | 0 | 16 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 10 | 80 | 0 | 0 | 0 | 0 | 75 | 35 | 33 | 0 | 15 | 50 | 17 | 14 | 0 | 46 | 33 | 25 | 50 | 65 | 100 | 67 | 30 | 0 | 25 | 20 |
| UTILIZATION OF OBJECTS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spanish | NO | 40 | 13 | 100 | 14 | 46 | NO | 25 | 18 | 17 | 0 | 30 | 50 | 83 | 29 | 100 | 39 | 20 | 75 | 20 | 14 | 0 | 17 | 30 | 100 | 10 | |
| English | NO | 10 | 7 | 0 | 0 | 46 | NO | 0 | 29 | 50 | 0 | 20 | 0 | 0 | 43 | 0 | 8 | 47 | 0 | 10 | 21 | 0 | 17 | 20 | 0 | 60 | 79 |
| N.L.S. | NO | 50 | 80 | 0 | 86 | 0 | NO | 75 | 53 | 33 | 100 | 50 | 50 | 17 | 29 | 0 | 54 | 33 | 25 | 70 | 64 | 100 | 67 | 50 | 0 | 30 | 20 |

ENGLISH-PREFERRING

| CHILD'S NAME | Alberto | | | Janet | | | Tommy | | |
|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 1 | 7 | 11 | 3 | 11 | 26 | 6 | 9 | 24 |
| VISUAL DISCRIMINATION | % | % | % | % | % | % | % | % | % |
| Spanish | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 14 | 4 |
| English | 0 | 14 | 18 | 0 | 0 | 46 | 33 | 14 | 8 |
| N.L.S. | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| CREATION/SEQUENCING | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 18 | 33 | 0 | 15 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 37 | 15 | 0 | 0 | 0 |
| MATCHING/CLASSIFICATION/ GROUPING OF OBJECTS | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SPATIAL & TIME RELATIONS | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SYMBOLIC REPRESENTATION | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 |
| English | 0 | 86 | 55 | 0 | 55 | 23 | 50 | 71 | 75 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| UTILIZATION OF OBJECTS | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.L.S. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | |
| Spanish | 0 | 0 | 0 | 67 | 0 | 0 | 17 | 14 | 4 |
| English | 0 | 14 | 36 | 33 | 9 | 62 | 33 | 14 | 20 |
| N.L.S. | 100 | 86 | 64 | 0 | 91 | 39 | 50 | 71 | 75 |

[1] Percentage totals may not equal 100% due to rounding.

[2]

# APPENDIX T

## COMPARISON OF OBSERVED SOCIOEMOTIONAL BEHAVIOR IN THREE AREAS BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME

# COMPARISON OF OBSERVED SOCIOEMOTIONAL BEHAVIOR IN THREE AREAS BY SUBSAMPLE - CHILDREN OVER THREE POINTS IN TIME: UN MARCO ABIERTO[1]

## SPANISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | |
| Appropriate | 33 | 67 | 0 | 67 | 33 | 0 |
| Inappropriate | 33 | 33 | 33 | 17 | 50 | 33 |
| SELF ESTEEM | | | | | | |
| Appropriate | 33 | 50 | 17 | 50 | 50 | 0 |
| Inappropriate | 17 | 0 | 83 | 17 | 0 | 83 |
| MOTIVATION | | | | | | |
| Appropriate | 67 | 17 | 17 | 83 | 17 | 0 |
| Inappropriate | 0 | 17 | 83 | 0 | 17 | 83 |
| TOTALS | | | | | | |
| Appropriate | 17 | 50 | 33 | 50 | 17 | 33 |
| Inappropriate | 33 | 33 | 33 | 17 | 50 | 33 |

N = 6

## ENGLISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | |
| Appropriate | 60 | 20 | 20 | 80 | 20 | 0 |
| Inappropriate | 40 | 20 | 40 | 40 | 20 | 40 |
| SELF ESTEEM | | | | | | |
| Appropriate | 0 | 20 | 80 | 40 | 20 | 40 |
| Inappropriate | NO[2] | NO | NO | NO | NO | NO |
| MOTIVATION | | | | | | |
| Appropriate | 20 | 60 | 20 | 20 | 80 | 0 |
| Inappropriate | NO | NO | NO | 20 | 0 | 80 |
| TOTALS | | | | | | |
| Appropriate | 20 | 40 | 40 | 20 | 60 | 20 |
| Inappropriate | 40 | 20 | 40 | 40 | 20 | 40 |

N = 5

1 Percentage totals may not equal 100% due to rounding.

2 NO = Not equal.

# COMPARISON OF OBSERVED SOCIOEMOTIONAL BEHAVIOR IN THREE AREAS BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: ALERTA[1]

## SPANISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | |
| Appropriate | 17 | 50 | 33 | 17 | 67 | 17 |
| Inappropriate | 17 | 33 | 50 | 33 | 33 | 33 |
| SELF ESTEEM | | | | | | |
| Appropriate | 50 | 17 | 33 | 33 | 33 | 33 |
| Inappropriate | 17 | 0 | 83 | 17 | 0 | 83 |
| MOTIVATION | | | | | | |
| Appropriate | 33 | 0 | 67 | 67 | 0 | 33 |
| Inappropriate | 0 | 17 | 83 | 0 | 17 | 83 |
| TOTALS | | | | | | |
| Appropriate | 33 | 17 | 50 | 33 | 33 | 33 |
| Inappropriate | 17 | 33 | 50 | 33 | 33 | 33 |

N = 6

## ENGLISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | |
| Appropriate | 13 | 63 | 13 | 38 | 50 | 13 |
| Inappropriate | 38 | 13 | 50 | 50 | 25 | 25 |
| SELF ESTEEM | | | | | | |
| Appropriate | 63 | 0 | 38 | 25 | 50 | 25 |
| Inappropriate | NO[2] | NO | NO | NO | NO | NO |
| MOTIVATION | | | | | | |
| Appropriate | 13 | 13 | 75 | 63 | 0 | 38 |
| Inappropriate | 13 | 0 | 87 | NO | NO | NO |
| TOTALS | | | | | | |
| Appropriate | 25 | 38 | 38 | 25 | 50 | 25 |
| Inappropriate | 38 | 13 | 50 | 50 | 25 | 25 |

N = 8

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed.

# COMPARISON OF OBSERVED SOCIOEMOTIONAL BEHAVIOR IN THREE AREAS BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: AMANECER

## SPANISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | |
| Appropriate | 40 | 40 | 20 | 40 | 60 | 0 |
| Inappropriate | 20 | 40 | 40 | 60 | 40 | 0 |
| SELF ESTEEM | | | | | | |
| Appropriate | NO[2] | NO | NO | NO | NO | NO |
| Inappropriate | 20 | 0 | 80 | NO | NO | NO |
| MOTIVATION | | | | | | |
| Appropriate | 40 | 60 | 0 | 60 | 40 | 0 |
| Inappropriate | NO | NO | NO | NO | NO | NO |
| TOTALS | | | | | | |
| Appropriate | 20 | 60 | 20 | 40 | 40 | 20 |
| Inappropriate | 40 | 40 | 20 | 40 | 40 | 20 |

N = 5

## ENGLISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | |
| Appropriate | 50 | 17 | 33 | 50 | 33 | 17 |
| Inappropriate | 33 | 33 | 33 | 33 | 50 | 17 |
| SELF ESTEEM | | | | | | |
| Appropriate | 33 | 50 | 17 | 17 | 50 | 33 |
| Inappropriate | NO | NO | NO | NO | NO | NO |
| MOTIVATION | | | | | | |
| Appropriate | 17 | 33 | 50 | 83 | 17 | 0 |
| Inappropriate | NO | NO | NO | NO | NO | NO |
| TOTALS | | | | | | |
| Appropriate | 33 | 50 | 17 | 33 | 50 | 17 |
| Inappropriate | 33 | 33 | 33 | 50 | 33 | 17 |

N = 6

1 Percentage totals may not equal 100% due to rounding.

2 NO = Not observed.

# COMPARISON OF OBSERVED SOCIOEMOTIONAL BEHAVIOR IN THREE AREAS BY SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME: NUEVAS FRONTERAS [1]

## SPANISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | |
| Appropriate | 56 | 44 | 0 | 56 | 44 | 0 |
| Inappropriate | 78 | 0 | 22 | 67 | 11 | 22 |
| SELF ESTEEM | | | | | | |
| Appropriate | 33 | 11 | 56 | 67 | 22 | 11 |
| Inappropriate | 56 | 11 | 33 | 33 | 11 | 56 |
| MOTIVATION | | | | | | |
| Appropriate | 44 | 33 | 22 | 33 | 33 | 33 |
| Inappropriate | 56 | 22 | 22 | 56 | 22 | 22 |
| TOTALS | | | | | | |
| Appropriate | 22 | 67 | 11 | 44 | 44 | 11 |
| Inappropriate | 78 | 11 | 11 | 56 | 33 | 11 |

N = 9

## ENGLISH-PREFERRING

| | FROM TIME ONE TO TIME TWO | | | FROM TIME ONE TO TIME THREE | | |
|---|---|---|---|---|---|---|
| | INCREASE | DECREASE | NO CHANGE | INCREASE | DECREASE | NO CHANGE |
| | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | |
| Appropriate | 33 | 67 | 0 | 100 | 0 | 0 |
| Inappropriate | 100 | 0 | 0 | 33 | 33 | 33 |
| SELF ESTEEM | | | | | | |
| Appropriate | 0 | 33 | 67 | 33 | 33 | 33 |
| Inappropriate | 100 | 0 | 0 | 67 | 0 | 33 |
| MOTIVATION | | | | | | |
| Appropriate | 33 | 67 | 0 | 0 | 67 | 33 |
| Inappropriate | 67 | 33 | 0 | 67 | 33 | 0 |
| TOTALS | | | | | | |
| Appropriate | 0 | 100 | 0 | 33 | 67 | 0 |
| Inappropriate | 100 | 0 | 0 | 67 | 33 | 0 |

N = 3

[1] Percentage totals may not equal 100% due to rounding.

# APPENDIX U

## RELATIVE FREQUENCY OF OBSERVED APPROPRIATE AND INAPPROPRIATE SOCIOEMOTIONAL BEHAVIOR IN THREE AREAS FOR INDIVIDUAL SUBSAMPLE CHILDREN OVER THREE POINTS IN TIME

# RELATIVE FREQUENCY OF OBSERVED APPROPRIATE AND INAPPROPRIATE SOCIOEMOTIONAL BEHAVIOR IN THREE AREAS FOR INDIVIDUAL SUBSAMPLE CHILDREN: UN MARCO ABIERTO[1]

| | SPANISH-PREFERRING | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHILD'S NAME | Irma | | | Victoria | | | Crispine | | | Lea | | | Carolina | | | Jose | | |
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SCHOOL READINESS N= | 3 | 2 | 8 | 1 | 6 | 16 | 5 | 2 | 10 | 3 | 6 | 15 | 3 | 0 | 8 | 10 | 2 | 18 |
| Appropriate | 67 | 0 | 75 | 0 | 17 | 56 | 0 | 50 | 70 | 67 | 17 | 47 | 33 | 0 | 56 | 20 | 0 | 11 |
| Inappropriate | 0 | 0 | 0 | 100 | 17 | [illegible] | 20 | 50 | 0 | 0 | 0 | 0 | 33 | 0 | 11 | 30 | 50 | 39 |
| SELF ESTEEM | | | | | | | | | | | | | | | | | | |
| Appropriate | 0 | 50 | 13 | 0 | 0 | 13 | 40 | 0 | 0 | 0 | 17 | 7 | 33 | 0 | 0 | 30 | 0 | 17 |
| Inappropriate | 0 | 0 | 0 | 0 | 17 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MOTIVATION | | | | | | | | | | | | | | | | | | |
| Appropriate | 33 | 50 | 13 | 0 | 50 | 13 | 20 | 0 | 30 | 33 | 67 | 47 | 0 | 0 | 33 | 20 | 50 | 33 |
| Inappropriate | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | | | | | | | | | | |
| Appropriate | 100 | 100 | 100 | 0 | 67 | 82 | 60 | 50 | 100 | 100 | 100 | 100 | 67 | 0 | 89 | 70 | 50 | 61 |
| Inappropriate | 0 | 0 | 0 | 100 | 34 | 19 | 40 | 50 | 0 | 0 | 0 | 0 | 33 | 0 | 11 | 30 | 50 | 39 |

| | ENGLISH-PREFERRING | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ernesto | | | Lucia | | | Candido | | | Barbara | | | Danny | | | | | |
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | | | |
| | 2 | 5 | 19 | 3 | 2 | 3 | 1 | 2 | 7 | 2 | 3 | 16 | 5 | 1 | 19 | | | |
| | 0 | 40 | 32 | 0 | 50 | 67 | 0 | 0 | 71 | 50 | 0 | 13 | 60 | 100 | 60 | | | |
| | 50 | 40 | 5 | 33 | 50 | 33 | 0 | 50 | 0 | 0 | 0 | 44 | 0 | 0 | 21 | | | |
| | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 40 | 0 | 11 | | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | 50 | 20 | 32 | 67 | 0 | 0 | 100 | 50 | 14 | 50 | 100 | 44 | 0 | 0 | 5 | | | |
| | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | 50 | 60 | 90 | 67 | 50 | 67 | 100 | 50 | 100 | 100 | 100 | 57 | 100 | 100 | 79 | | | |
| | 50 | 40 | 10 | 33 | 50 | 33 | 0 | 50 | 0 | 0 | 0 | 44 | 0 | 0 | 21 | | | |

[1] Parcentage totals may not equal 100% due to rounding.

# RELATIVE FREQUENCY OF OBSERVED APPROPRIATE AND INAPPROPRIATE SOCIOEMOTIONAL BEHAVIOR IN THREE AREAS FOR INDIVIDUAL SUBSAMPLE CHILDREN: AMANECER[1]

## SPANISH-PREFERRING

| CHILD'S NAME | Julio | | | Ramona | | | Doris | | | James | | | Claudia | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 1 | 2 | 5 | 3 | 3 | 5 | 1 | 3 | 3 | 2 | 2 | 3 | 8 | 0 | 2 |
| SCHOOL READINESS | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Appropriate | 0 | 50 | 40 | 33 | 33 | 20 | 100 | 0 | 67 | 0 | 100 | 33 | 50 | NO[2] | 0 |
| Inappropriate | 100 | 50 | 40 | 0 | 33 | 40 | 0 | 0 | 0 | 0 | 0 | 33 | 25 | NO | 0 |
| SELF-ESTEEM | | | | | | | | | | | | | | | |
| Appropriate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NO | 0 |
| Inappropriate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | NO | 0 |
| MOTIVATION | | | | | | | | | | | | | | | |
| Appropriate | 0 | 0 | 20 | 67 | 33 | 40 | 0 | 67 | 33 | 100 | 0 | 33 | 25 | NO | 100 |
| Inappropriate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NO | 0 |
| TOTALS | | | | | | | | | | | | | | | |
| Appropriate | 0 | 50 | 60 | 100 | 66 | 60 | 100 | 67 | 100 | 100 | 100 | 66 | 75 | NO | 100 |
| Inappropriate | 100 | 50 | 40 | 0 | 33 | 40 | 0 | 33 | 0 | 0 | 0 | 33 | 25 | NO | 0 |

## ENGLISH-PREFERRING

| Clotilde | | | David | | | Judy | | | Martin | | | Gregorio | | | Ruth | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| 3 | 4 | 6 | 6 | 6 | 6 | 4 | 3 | 8 | 4 | 4 | 5 | 1 | 0 | 5 | 7 | 4 | 10 |
| % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| 0 | 50 | 17 | 67 | 50 | 50 | 75 | 67 | 50 | 75 | 100 | 80 | 100 | NO | 40 | 43 | 50 | 70 |
| 67 | 25 | 33 | 0 | 17 | 17 | 25 | 0 | 13 | 0 | 0 | 0 | 0 | NO | 40 | 0 | 50 | 10 |
| 0 | 25 | 0 | 33 | 0 | 17 | 0 | 33 | 13 | 25 | 0 | 0 | 0 | NO | 0 | 14 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NO | 0 | 0 | 0 | 0 |
| 33 | 0 | 50 | 0 | 33 | 17 | 0 | 0 | 25 | 0 | 0 | 20 | 0 | NO | 20 | 43 | 0 | 20 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NO | 0 | 0 | 0 | 0 |
| 33 | 75 | 67 | 100 | 83 | 84 | 75 | 100 | 88 | 100 | 100 | 100 | 100 | NO | 60 | 100 | 50 | 90 |
| 67 | 25 | 33 | 0 | 17 | 17 | 24 | 0 | 13 | 0 | 0 | 0 | 0 | NO | 40 | 0 | 50 | 10 |

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed.

# RELATIVE FREQUENCY OF OBSERVED APPROPRIATE AND INAPPROPRIATE SOCIOEMOTIONAL BEHAVIOR IN THREE AREAS FOR INDIVIDUAL SUBSAMPLE CHILDREN: ALERTA[1]

SPANISH-PREFERRING

| CHILD'S NAME | Francisco | | | Alicia | | | Maria | | | Judith | | | Veronica | | | Shirley | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 2 | 9 | 4 | 3 | 3 | 5 | 2 | 1 | 2 | 1 | 3 | 4 | 7 | 2 | 1 | 2 | 5 | 1 |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | | | | | | | | | | | | | |
| Appropriate | 0 | 22 | 25 | 33 | 33 | 20 | 0 | 0 | 0. | 100 | 67 | 50 | 57 | 0 | 0 | 50 | 40 | 0 |
| Inappropriate | 50 | 33 | 25 | 0 | 0 | 20 | 100 | 0 | 50 | 0 | 33 | 25 | 0 | 0 | 0 | 0 | 0 | 0 |
| SELF ESTEEM | | | | | | | | | | | | | | | | | | |
| Appropriate | 0 | 22 | 25 | 67 | 67 | 40 | 0 | 100 | 0 | 0 | 0 | 0 | 43 | 100 | 100 | 50 | 40 | 0 |
| Inappropriate | 0 | 11 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MOTIVATION | | | | | | | | | | | | | | | | | | |
| Appropriate | 0 | 11 | 25 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 20 | 100 |
| Inappropriate | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | | | | | | | | | | |
| Appropriate | 0 | 55 | 75 | 100 | 100 | 60 | 0 | 100 | 50 | 100 | 67 | 75 | 100 | 100 | 100 | 100 | 100 | 100 |
| Inappropriate | 100 | 45 | 25 | 0 | 0 | 40 | 100 | 0 | 50 | 0 | 33 | 25 | 0 | 0 | 0 | 0 | 0 | 0 |

ENGLISH-PREFERRING

| CHILD'S NAME | Kum'Jeni | | | Kurt | | | Wanda | | | Donald | | | Elizabeth | | | Harold | | | Jaime | | | Jody | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 2 | 4 | 2 | 1 | 6 | 5 | 6 | 1 | 2 | 1 | 9 | 4 | 3 | 1 | 1 | 4 | 3 | 4 | 0 | 0 | 8 | 5 | 2 | 0 |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | | | | | | | | | | | | | | | | | | | |
| Appropriate | 100 | 0 | 50 | 0 | 17 | 40 | 67 | 0 | 0 | 100 | 0 | 25 | 0 | 0 | 0 | 50 | 0 | 75 | NO[2] | NO | 38 | 20 | 0 | 0 |
| Inappropriate | 0 | 25 | 50 | 100 | 83 | 0 | 0 | 0 | 50 | 0 | 44 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | NO | NO | 25 | 40 | 50 | 0 |
| SELF ESTEEM | | | | | | | | | | | | | | | | | | | | | | | | |
| Appropriate | 0 | 50 | 0 | 0 | 0 | 20 | 16 | 100 | 0 | 0 | 44 | 0 | 100 | 100 | 100 | 50 | 100 | 0 | NO | NO | 13 | 40 | 50 | 0 |
| Inappropriate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NO | NO | 0 | 0 | 0 | 0 |
| MOTIVATION | | | | | | | | | | | | | | | | | | | | | | | | |
| Appropriate | 0 | 0 | 0 | 0 | 0 | 40 | 16 | 0 | 50 | 0 | 11 | 25 | 0 | 0 | 0 | 0 | 0 | 25 | NO | NO | 25 | 0 | 0 | 0 |
| Inappropriate | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NO | NO | 0 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | | | | | | | | | | | | | | | | |
| Appropriate | 100 | 50 | 50 | 0 | 17 | 100 | 99 | 100 | 50 | 100 | 55 | 50 | 100 | 100 | 100 | 100 | 100 | 100 | NO | NO | 75 | 60 | 50 | NO |
| Inappropriate | 0 | 50 | 50 | 0 | 83 | 0 | 0 | 0 | 50 | 0 | 45 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | NO | NO | 25 | 40 | 50 | NO |

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed

# RELATIVE FREQUENCY OF OBSERVED APPROPRIATE AND INAPPROPRIATE SOCIOEMOTIONAL BEHAVIOR IN THREE AREAS FOR INDIVIDUAL SUBSAMPLE CHILDREN NUEVAS FRONTERAS[1]

SPANISH-PREFERRING

| CHILD'S NAME | Miguel | | | Evelyn | | | Nelda | | | Odon | | | Juan | | | Ray | | | Arturo | | | Linda | | | Bonita | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 0 | 7 | 11 | 6 | 12 | 17 | 2 | 12 | 7 | 1 | 10 | 13 | 4 | 11 | 18 | 4 | 33 | 36 | 3 | 33 | 10 | 3 | 11 | 9 | 4 | 9 | 5 |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Appropriate | NO[2] | 14 | 45 | 17 | 42 | 41 | 100 | 50 | 43 | 0 | 50 | 54 | 100 | 45 | 22 | 25 | 21 | 17 | 67 | 39 | 50 | 33 | 55 | 56 | 50 | 56 | 80 |
| Inappropriate | NO | 0 | 9 | 0 | 8 | 12 | 0 | 25 | 0 | 0 | 20 | 15 | 0 | 18 | 22 | 25 | 52 | 33 | 33 | 39 | 10 | 0 | 36 | 22 | 0 | 0 | 0 |
| SELF ESTEEM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Appropriate | NO | 0 | 18 | 0 | 25 | 12 | 0 | 0 | 14 | 0 | 0 | 15 | 0 | 9 | 0 | 50 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 22 | 25 | 33 | 20 |
| Inappropriate | NO | 29 | 18 | 50 | 17 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 9 | 17 | 0 | 12 | 11 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MOTIVATION | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Appropriate | NO | 14 | 0 | 0 | 0 | 6 | 0 | 8 | 0 | 100 | 20 | 15 | 0 | 18 | 22 | 0 | 0 | 3 | 0 | 3 | 0 | 33 | 9 | 0 | 25 | 11 | 0 |
| Inappropriate | NO | 43 | 9 | 33 | 8 | 29 | 0 | 8 | 43 | 0 | 10 | 0 | 0 | 0 | 17 | 0 | 15 | 36 | 0 | 15 | 20 | 33 | 0 | 0 | 0 | 0 | 0 |
| TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Appropriate | NO | 28 | 63 | 17 | 67 | 59 | 100 | 58 | 57 | 100 | 70 | 84 | 100 | 72 | 44 | 75 | 21 | 20 | 67 | 42 | 70 | 66 | 64 | 78 | 100 | 100 | 100 |
| Inappropriate | NO | 72 | 36 | 83 | 33 | 41 | 0 | 41 | 43 | 0 | 30 | 15 | 0 | 27 | 56 | 25 | 79 | 80 | 33 | 57 | 30 | 33 | 36 | 22 | 0 | 0 | 0 |

ENGLISH-PREFERRING

| CHILD'S NAME | Alberto | | | Janet | | | Tommy | | |
|---|---|---|---|---|---|---|---|---|---|
| OBSERVATION TIME | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| N= | 9 | 22 | 10 | 1 | 13 | 7 | 3 | 20 | 38 |
| | % | % | % | % | % | % | % | % | % |
| SCHOOL READINESS | | | | | | | | | |
| Appropriate | 44 | 36 | 50 | 0 | 38 | 43 | 33 | 30 | 34 |
| Inappropriate | 22 | 41 | 30 | 0 | 23 | 0 | 33 | 40 | 26 |
| SELF ESTEEM | | | | | | | | | |
| Appropriate | 11 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| Inappropriate | 0 | 5 | 10 | 0 | 15 | 0 | 0 | 5 | 5 |
| MOTIVATION | | | | | | | | | |
| Appropriate | 0 | 6 | 0 | 100 | 0 | 0 | 33 | 0 | 3 |
| Inappropriate | 22 | 14 | 0 | 0 | 23 | 57 | 0 | 25 | 29 |
| TOTALS | | | | | | | | | |
| Appropriate | 55 | 41 | 60 | 100 | 38 | 43 | 66 | 30 | 40 |
| Inappropriate | 44 | 60 | 40 | 0 | 61 | 57 | 33 | 70 | 60 |

[1] Percentage totals may not equal 100% due to rounding.

[2] NO = Not observed

# APPENDIX V

## PROPORTION OF THE DAY SPENT IN DIFFERENT ACTIVITIES BY SAMPLE CHILDREN AT TWO POINTS IN TIME

## UN MARCO ABIERTO I EXPERIMENTAL HEAD START CHILDREN

| Time of Day | PRE ACTIVITIES Sleeping | TV | Playing | School | Meals/ Recreation | POST Sleeping | TV | Playing | School | Meals/ Recreation |
|---|---|---|---|---|---|---|---|---|---|---|
| 6:00 A.M. - 9:00 A.M. | 6.00 | 7.33 | 2.67 | 4.00 | 0.67 | 11.11 | 3.17 | 0 | 6.35 | 1.59 |
| 9:00 A.M. - 12:00 Noon | 0.67 | 2.67 | 4.67 | 11.33 | 0.67 | 0 | 0 | 3.17 | 25.40 | 0 |
| 12:00 Noon 3:00 P.M. | 1.33 | 4.00 | 6.67 | 7.33 | 0.67 | 1.59 | 1.59 | 3.17 | 14.29 | 3.17 |
| 3:00 P.M. - 6:00 P.M. | 0 | 5.33 | 14.00 | 0.67 | 0 | 0 | 4.76 | 11.11 | 1.59 | 1.59 |
| 6:00 P.M. - 9:00 P.M. | 4.00 | 9.33 | 6.00 | 0 | 0 | 3.17 | 1.59 | 0 | 0 | 1.59 |
| TOTAL | 12.00 | 28.67 | 34.00 | 23.33 | 2.00 | 15.87 | 11.11 | 17.46 | 47.62 | 7.94 |

## UN MARCO I COMPARISON CHILDREN

| Time of Day | PRE ACTIVITIES Sleeping | TV | Playing | School | Meals/ Recreation | POST Sleeping | TV | Playing | School | Meals/ Recreation |
|---|---|---|---|---|---|---|---|---|---|---|
| 6:00 A.M. - 9:00 A.M. | 2.19 | 9.49 | 2.92 | 5.11 | 0.73 | 1.79 | 0 | 0 | 7.14 | 1.79 |
| 9:00 A.M. - 12:00 Noon | 0 | 0.73 | 2.92 | 16.79 | 0 | 0 | 1.79 | 3.57 | 12.14 | 0 |
| 12:00 Noon 3:00 P.M. | 0 | 0.73 | 13.87 | 5.84 | 0 | 0 | 0 | 12.50 | 17.86 | 0 |
| 3:00 P.M. - 6:00 P.M. | 0 | 5.84 | 10.95 | 0.73 | 1.46 | 1.79 | 3.57 | 7.14 | 1.79 | 0 |
| 6:00 P.M. - 9:00 P.M. | 5.11 | 5.11 | 8.76 | 0 | 0.73 | 1.79 | 1.79 | 1.79 | 0 | 1.79 |
| TOTAL | 7.30 | 21.90 | 39.42 | 28.47 | 2.92 | 5.36 | 7.14 | 25.00 | 58.93 | 3.57 |

## UN MARCO ABIERTO II EXPERIMENTAL HEAD START CHILDREN

| Time of Day | ACTIVITIES, PRE Sleeping | TV | Playing | School | Meals/ Recreation | POST Sleeping | TV | Playing | School | Meals/ Recreation |
|---|---|---|---|---|---|---|---|---|---|---|
| 6:00 A.M. - 9:00 A.M. | 12.03 | 1.90 | 3.16 | 0 | 2.53 | 7.10 | 6.45 | 1.94 | 1.23 | 3.23 |
| 9:00 A.M. - 12:00 Noon | 0.63 | 1.90 | 1.90 | 11.39 | 4.43 | 0 | 3.23 | 5.81 | 10.97 | 0.65 |
| 12:00 Noon 3:00 P.M. | 1.27 | 1.90 | 6.96 | 8.86 | 1.27 | 0.65 | 3.87 | 6.45 | 9.03 | 0.65 |
| 3:00 P.M. - 6:00 P.M. | 0 | 3.80 | 9.49 | 2.27 | 5.70 | 0.65 | 6.45 | 12.26 | 0 | 1.29 |
| 6:00 P.M. - 9:00 P.M. | 5.06 | 3.80 | 7.59 | 0 | 3.16 | 1.94 | 9.03 | 4.52 | 0 | 2.58 |
| TOTAL | 18.99 | 13.29 | 29.11 | 21.52 | 17.09 | 10.32 | 29.03 | 30.97 | 21.29 | 8.39 |

## UN MARCO ABIERTO II COMPARISON CHILDREN

| Time of Day | ACTIVITIES PRE Sleeping | TV | Playing | School | Meals/ Recreation | POST Sleeping | TV | Playing | School | Meals/ Recreation |
|---|---|---|---|---|---|---|---|---|---|---|
| 6:00 A.M. - 9:00 A.M. | 5.49 | 5.49 | 7.69 | 0 | 2.20 | 2.70 | 5.41 | 10.81 | 0 | 1.35 |
| 9:00 A.M. - 12:00 Noon | 1.10 | 6.59 | 7.69 | 2.20 | 1.10 | 0 | 6.76 | 10.81 | 0 | 1.35 |
| 12:00 Noon 3:00 P.M. | 2.20 | 7.69 | 8.79 | 2.20 | 0 | 1.35 | 2.70 | 17.57 | 0 | 0 |
| 3:00 P.M. - 6:00 P.M. | 0 | 8.79 | 7.69 | 0 | 3.30 | 0 | 5.41 | 13.51 | 0 | 1.35 |
| 6:00 P.M. - 9:00 P.M. | 3.30 | 7.69 | 7.69 | 0 | 1.10 | 0 | 9.46 | 9.46 | 0 | 0 |
| TOTAL | 12.09 | 36.26 | 39.56 | 4.40 | 7.69 | 4.05 | 29.73 | 62.16 | 0 | 4.05 |

## AMANECER I EXPERIMENTAL HEAD START CHILDREN

| | ACTIVITIES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRE | | | | | POST | | | | |
| Time of Day | Sleeping | TV | Playing | School | Meals/ Recreation | Sleeping | TV | Playing | School | Meals/ Recreation |
| 6:00 A.M. - 9:00 A.M. | 0.72 | 3.62 | 3.62 | 7.25 | 4.35 | 2.02 | 4.04 | 1.01 | 9.09 | 2.02 |
| 9:00 A.M. - 12:00 Noon | 0 | 0 | 2.17 | 18.12 | 0 | 1.01 | 0 | 0 | 24.25 | 0 |
| 12:00 Noon 3:00 P.M. | 1.45 | 0 | 0.72 | 17.39 | 0.72 | 0 | 0 | 0 | 20.20 | 1.01 |
| 3:00 P.M. - 6:00 P.M. | 0.72 | 5.80 | 10.14 | 0.72 | 2.17 | 0 | 3.03 | 15.15 | 1.01 | 0 |
| 6:00 P.M. - 9:00 P.M. | 2.17 | 10.14 | 7.25 | 0 | 0.72 | 1.01 | 9.09 | 6.06 | 0 | 0 |
| TOTAL | 5.07 | 19.57 | 23.91 | 43.48 | 7.97 | 4.04 | 16.16 | 22.22 | 54.55 | 3.03 |

## AMANECER I COMPARISON CHILDREN

| | ACTIVITIES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRE | | | | | POST | | | | |
| Time of Day | Sleeping | TV | Playing | School | Meals/ Recreation | Sleeping | TV | Playing | School | Meals/ Recreation |
| 6:00 A.M. - 9:00 A.M. | 5.97 | 8.21 | 5.22 | 0 | 0.75 | 10.87 | 8.70 | 0 | 0 | 1.09 |
| 9:00 A.M. - 12:00 Noon | 0 | 5.97 | 12.69 | 0 | 1.49 | 1.09 | 2.17 | 11.87 | 1.09 | 6.52 |
| 12:00 Noon 3:00 P.M. | 5.97 | 5.97 | 7.46 | 0 | 0 | 3.26 | 3.26 | 7.61 | 1.09 | 1.09 |
| 3:00 P.M. - 6:00 P.M. | 0 | 11.94 | 8.21 | 0 | 0 | 0 | 10.87 | 7.61 | 0 | 2.17 |
| 6:00 P.M. - 9:00 P.M. | 1.49 | 12.69 | 5.22 | 0 | 0.75 | 3.26 | 9.78 | 3.26 | 0 | 4.35 |
| TOTAL | 13.43 | 44.78 | 38.81 | 0 | 2.99 | 18.48 | 34.78 | 29.35 | 2.17 | 15.22 |

## AMANECER II EXPERIMENTAL HEAD START CHILDREN

| Time of Day | ACTIVITIES PRE Sleeping | TV | Playing | School | Meals/ Recreation | POST Sleeping | TV | Playing | School | Meals/ Recreation |
|---|---|---|---|---|---|---|---|---|---|---|
| 6:00 A.M. - 9:00 A.M. | 7.18 | 1.54 | 1.54 | 8.72 | 1.03 | 7.95 | 2.84 | 3.98 | 2.84 | 2.84 |
| 9:00 A.M. - 12:00 Noon | 0 | 0 | 2.05 | 17.95 | 0 | 0.57 | 0 | 2.27 | 9.09 | 8.52 |
| 12:00 Noon 3:00 P.M. | 2.56 | 0 | 1.03 | 15.38 | 1.03 | 5.11 | 1.14 | 3.41 | 5.11 | 5.68 |
| 3:00 P.M. - 6:00 P.M. | 0 | 5.64 | 10.77 | 2.05 | 1.54 | 0 | 5.11 | 10.23 | 1.14 | 2.84 |
| 6:00 P.M. - 9:00 P.M. | 1.54 | 9.23 | 9.23 | 0 | 0 | 1.14 | 8.52 | 9.09 | 0 | 0.57 |
| TOTAL | 11.28 | 16.41 | 24.62 | 44.10 | 3.59 | 14.77 | 17.61 | 28.98 | 18.18 | 20.45 |

## AMANECER II COMPARISON CHILDREN

| Time of Day | ACTIVITIES PRE Sleeping | TV | Playing | School | Meals/ Recreation | POST Sleeping | TV | Playing | School | Meals/ Recreation |
|---|---|---|---|---|---|---|---|---|---|---|
| 6:00 A.M. - 9:00 A.M. | 8.07 | 3.11 | 1.24 | 6.83 | 1.24 | 3.68 | 5.88 | 6.62 | 2.21 | 2.21 |
| 9:00 A.M. - 12:00 Noon | 0 | 1.24 | 3.73 | 14.91 | 0 | 1.47 | 0.74 | 11.03 | 2.21 | 3.68 |
| 12:00 Noon 3:00 P.M. | 1.24 | 1.24 | 3.11 | 13.04 | 1.86 | 2.94 | 2.94 | 8.09 | 2.21 | 4.41 |
| 3:00 P.M. - 6:00 P.M. | 0 | 6.83 | 10.56 | 0.62 | 1.24 | 0 | 8.82 | 9.56 | 0.74 | 0.74 |
| 6:00 P.M. - 9:00 P.M. | 4.35 | 8.07 | 7.45 | 0 | 0 | 1.47 | 11.76 | 5.88 | 0.74 | 0 |
| TOTAL | 13.66 | 20.50 | 26.09 | 35.40 | 4.35 | 9.56 | 30.15 | 41.18 | 8.09 | 11.03 |

## ALERTA I EXPERIMENTAL HEAD START CHILDREN

| | ACTIVITIES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRE | | | | | POST | | | | |
| Time of Day | Sleeping | TV | Playing | School | Meals/ Recreation | Sleeping | TV | Playing | School | Meals/ Recreation |
| 6:00 A.M. - 9:00 A.M. | 5.93 | 3.39 | 5.93 | 0 | 5.08 | 8.06 | 1.61 | 4.84 | 3.23 | 4.84 |
| 9:00 A.M. - 12:00 Noon | 0 | 3.39 | 7.63 | 6.78 | 1.69 | 0 | 1.61 | 4.84 | 11.29 | 1.61 |
| 12:00 Noon 3:00 P.M. | 0 | 0.85 | 5.93 | 12.71 | 0 | 1.61 | 0 | 6.45 | 12.90 | 0 |
| 3:00 P.M. - 6:00 P.M. | 2.54 | 5.08 | 12.71 | 0 | 0 | 0 | 4.84 | 12.90 | 0 | 0 |
| 6:00 P.M. - 9:00 P.M. | 3.39 | 6.78 | 9.32 | 0 | 0.85 | 3.23 | 5.45 | 8.06 | 0 | 1.61 |
| TOTAL | 11.86 | 19.49 | 41.53 | 19.49 | 7.63 | 12.90 | 14.52 | 37.10 | 27.42 | 8.06 |

## ALERTA I COMPARISON CHILDREN

| | ACTIVITIES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRE | | | | | POST | | | | |
| Time of Day | Sleeping | TV | Playing | School | Meals/ Recreation | Sleeping | TV | Playing | School | Meals/ Recreation |
| 6:00 A.M. - 9:00 A.M. | 15.00 | 2.50 | 2.50 | 0 | 0 | 21.05 | 0 | 0 | 0 | 0 |
| 9:00 A.M. - 12:00 Noon | 0 | 7.50 | 12.50 | 0 | 0 | 12.50 | 25.00 | 50.00 | 0 | 12.50 |
| 12:00 Noon 3:00 P.M. | 0 | 2.50 | 17.50 | 0 | 0 | 2.63 | 2.63 | 13.16 | 0 | 0 |
| 3:00 P.M. - 6:00 P.M. | 0 | 12.50 | 7.50 | 0 | 0 | 0 | 7.89 | 10.53 | 0 | 2.63 |
| 6:00 P.M. - 9:00 P.M. | 0 | 5.00 | 15.00 | 0 | 0 | 0 | 5.26 | 13.16 | 0 | 0 |
| TOTAL | 15.00 | 30.00 | 55.00 | 0 | 0 | 26.32 | 21.05 | 47.37 | 0 | 5.26 |

## ALERTA II EXPERIMENTAL HEAD START CHILDREN

| Time of Day | ACTIVITIES PRE Sleeping | TV | Playing | School | Meals/ Recreation | POST Sleeping | TV | Playing | School | Meals/ Recreation |
|---|---|---|---|---|---|---|---|---|---|---|
| 6:00 A.M. - 9:00 A.M. | 5.17 | 5.17 | 5.17 | 3.45 | 1.72 | 23.81 | 0 | 0 | 0 | 0 |
| 9:00 A.M. - 12:00 Noon | 0 | 5.17 | 6.90 | 6.90 | 1.72 | 0 | 0 | 4.76 | 23.81 | 0 |
| 12:00 Noon 3:00 P.M. | 1.72 | 1.72 | 3.45 | 12.07 | 0 | 0 | 4.76 | 4.76 | 19.05 | 0 |
| 3:00 P.M. - 6:00 P.M. | 1.72 | 8.62 | 6.90 | 1.72 | 1.72 | 0 | 4.76 | 4.76 | 0 | 4.76 |
| 6:00 P.M. - 9:00 P.M. | 3.45 | 10.34 | 5.17 | 0 | 0 | 0 | 0 | 0 | 0 | 4.76 |
| TOTAL | 12.07 | 31.03 | 27.59 | 24.14 | 5.17 | 23.81 | 9.52 | 14.29 | 42.86 | 9.52 |

## ALERTA II COMPARISON CHILDREN

| Time of Day | ACTIVITIES PRE Sleeping | TV | Playing | School | Meals/ Recreation | POST Sleeping | TV | Playing | School | Meals/ Recreation |
|---|---|---|---|---|---|---|---|---|---|---|
| 6:00 A.M. - 9:00 A.M. | 15.00 | 0 | 5.00 | 0 | 0 | 12.50 | 12.50 | 0 | 0 | 0 |
| 9:00 A.M. - 12:00 Noon | 0 | 10.00 | 5.00 | 0 | 5.00 | 0 | 12.50 | 12.50 | 0 | 0 |
| 12:00 Noon 3:00 P.M. | 0 | 10.00 | 5.00 | 0 | 5.00 | 0 | 12.50 | 0 | 0 | 12.50 |
| 3:00 P.M. - 6:00 P.M. | 0 | 10.00 | 10.00 | 0 | 0 | 0 | 0 | 12.50 | 0 | 0 |
| 6:00 P.M. - 9:00 P.M. | 0 | 20.00 | 0 | 0 | 0 | 12.50 | 0 | 0 | 0 | 0 |
| TOTAL | 15.00 | 50.00 | 25.00 | 0 | 5.00 | 25.00 | 37.50 | 25.00 | 0 | 12.50 |

## NUEVAS FRONTERAS I EXPERIMENTAL HEAD START CHILDREN

| | ACTIVITIES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRE | | | | | POST | | | | |
| Time of Day | Sleeping | TV | Playing | School | Meals/ Recreation | Sleeping | TV | Playing | School | Meals/ Recreation |
| 6:00 A.M. - 9:00 A.M. | 2.02 | 6.06 | 0 | 4.04 | 0 | 8.33 | 1.04 | 2.08 | 3.13 | 2.08 |
| 9:00 A.M. - 12:00 Noon | 0 | 0 | 5.05 | 16.16 | 1.01 | 0 | 0 | 0 | 22.92 | 0 |
| 12:00 Noon 3:00 P.M. | 1.01 | 2.02 | 3.03 | 16.16 | 0 | 0 | 0 | 0 | 21.88 | 0 |
| 3:00 P.M. - 6:00 P.M. | 0 | 10.10 | 5.05 | 0 | 6.06 | 0 | 3.13 | 16.67 | 0 | 0 |
| 6:00 P.M. - 9:00 P.M. | 2.02 | 10.10 | 7.07 | 0 | 3.03 | 0 | 5.21 | 13.54 | 0 | 0 |
| TOTAL | 5.05 | 28.28 | 20.20 | 36.36 | 10.10 | 8.33 | 9.38 | 32.29 | 47.92 | 2.08 |

## NUEVAS FRONTERAS I COMPARISON CHILDREN

| | ACTIVITIES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRE | | | | | POST | | | | |
| Time of Day | Sleeping | TV | Playing | School | Meals/ Recreation | Sleeping | TV | Playing | School | Meals/ Recreation |
| 6:00 A.M. - 9:00 A.M. | 4.65 | 1.55 | 0 | 6.20 | 0.78 | 3.17 | 0.79 | 7.14 | 7.14 | 0 |
| 9:00 A.M. - 12:30 Noon | ) | 1.55 | 2.33 | 17.83 | 0 | 0 | 0 | 0 | 22.22 | 0 |
| 12:00 Noon 3:00 P.M. | 0.7 | 2.33 | 3.88 | 14.73 | 0 | 0 | 0 | 0.79 | 19.84 | 0 |
| 3:00 P.M. - 6:00 P.M. | 0.78 | 10.08 | 8.53 | 0.78 | 1.55 | 0 | 4.76 | 15.87 | 0 | 0 |
| 6:00 P.M. - 9:00 P.M. | 5.43 | 9.30 | 5.43 | 0 | 1.55 | 0.79 | 7.14 | 9.52 | 0 | 0.79 |
| TOTAL | 11.63 | 24.81 | 20.16 | 39.53 | 3.88 | 8.97 | 12.70 | 33.33 | 49.21 | 0.79 |

## NUEVAS FRONTERAS I-I EXPERIMENTAL HEAD START CHILDREN

| | ACTIVITIES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRE | | | | | POST | | | | |
| Time of Day | Sleeping | TV | Playing | School | Meals/ Recreation | Sleeping | TV | Playing | School | Meals/ Recreation |
| 6:00 A.M. - 9:00 A.M. | 7.46 | 0 | 0 | 0 | 1.49 | 1.54 | 0 | 0 | 0 | 0 |
| 9:00 A.M. - 12:00 Noon | 0 | 0 | 0 | 40.30 | 2.99 | 0 | 0 | 0 | 43.08 | 0 |
| 12:00 Noon 3:00 P.M. | 0 | 1.49 | 17.91 | 0 | 0 | 1.54 | 3.08 | 13.85 | 0 | 1.54 |
| 3:00 P.M. - 6:00 P.M. | 0 | 7.46 | 5.97 | 0 | 1.49 | 1.54 | 1.54 | 9.23 | 0 | 4.62 |
| 6:00 P.M. - 9:00 P.M. | 2.99 | 7.46 | 1.49 | 0 | 1.49 | 7.69 | 1.54 | 0 | 0 | 9.23 |
| TOTAL | 10.45 | 16.42 | 25.37 | 40.30 | 7.46 | 12.31 | 6.15 | 23.08 | 43.08 | 15.38 |

## NUEVAS FRONTERAS II COMPARISON CHILDREN

| | ACTIVITIES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRE | | | | | POST | | | | |
| Time of Day | Sleeping | TV | Playing | School | Meals/ Recreation | Sleeping | TV | Playing | School | Meals/ Recreation |
| 6:00 A.M. - 9:00 A.M. | 6.36 | 4.55 | 4.55 | 0 | 4.55 | 10.00 | 2.50 | 1.25 | 0 | 3.75 |
| 9:00 A.M. - 12:00 Noon | 0 | 0 | 1.82 | 27.27 | 0 | 0 | 0 | 0 | 21.25 | 1.25 |
| 12:00 Noon 3:00 P.M. | 1.82 | 2.73 | 13.64 | 0 | 0.91 | 6.25 | 1.25 | 13.75 | 0 | 1.25 |
| 3:00 P.M. - 6:00 P.M. | 0 | 5.45 | 12.73 | 0 | 0 | 1.25 | 3.75 | 15.00 | 0 | 1.25 |
| 6:00 P.M. - 9:00 P.M. | 4.55 | 4.55 | 3.64 | 0 | 0.91 | 1.25 | 10.00 | 2.50 | 0 | 2.50 |
| TOTAL | 12.73 | 17.27 | 36.46 | 27.27 | 6.36 | 18.75 | 17.50 | 32.50 | 21.25 | 10.00 |

# APPENDIX W

## RANK ORDER CORRELATIONS BETWEEN TEST RESULTS AND CLASSROOM OBSERVATIONS

## RANK ORDER CORRELATIONS BETWEEN TEST RESULTS AND CLASSROOM OBSERVATIONS

| | Un Marco Abierto | Alerta | Amanecer | Nuevas Fronteras |
|---|---|---|---|---|
| SMLU | .8970 | .8121 | .6786 | .6364 |
| EMLU | .3364 | -.0208 | .8572 | .4970 |
| Spanish Language Production | .9857 | [2] | [2] | .7375 |
| English Language Production | .8000 | .9000 | .3500 | [2] |
| Spanish Language Comprehension | .4303 | .5000 | .2232 | -.0152 |
| English Language Comprehension | -.1242 | .5958 | .9643 | .5152 |
| Spanish Concept Development | .4394 | .8819 | .0179 | -.2545 |
| English Concept Development | .5909 | .7455 | .7054 | .3637 |
| Socioemotional | .2030 | .5212 | .2679 | .4485 |

[1] With the exception of the constructs of English and Spanish language production, post-test scores of all Spanish and English subsample children for whom test results were available were correlated with frequency counts of their behaviors in the same area during the last period of classroom observations. On the measure of first language production, Spanish preferring children were used for Spanish language production and English preferring children for English language production.

[2] Rank order correlations were not computed due to insufficient cell size ($n<4$).

# APPENDIX X

## UNADJUSTED MEAN VALUES FROM PRE- AND POSTTEST INTERVIEWS ON FOUR MOTHER MEASURES FOR THE EXPERIMENTAL HEAD START AND COMPARISON MOTHER SAMPLES

| | EXPERIMENTAL | | | | | | COMPARISON | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference |
| **Language Assessment of Child** | | | | | | | | | | | | |
| Spanish Ability | 28 | 1.9 | 1.1 | 2.2 | 0.9 | 0.3 | 29 | 2.2 | 1.1 | 2.3 | 1.0 | 0.1 |
| English Ability | 28 | 1.7 | 1.1 | 2.0 | 1.0 | 0.3 | 29 | 1.4 | 1.2 | 1.8 | 0.9 | 0.3 |
| **Maternal Language Usage** | | | | | | | | | | | | |
| Spanish-Speaking Ability | 27 | 2.4 | 1.0 | 2.5 | 0.7 | 0.1 | 28 | 2.3 | 0.9 | 2.8 | 0.4 | 0.5 |
| Instructs in Spanish | 9 | 0.3 | 0.5 | 0.4 | 0.5 | 0.1 | 6 | 0.5 | 0.6 | 0.6 | 0.5 | 0.1 |
| English-Speaking Ability | 28 | 1.5 | 1.3 | 1.6 | 1.3 | 0.1 | 29 | 1.2 | 1.2 | 1.6 | 1.2 | 0.3 |
| Instructs in English | 9 | 0.7 | 0.5 | 0.6 | 0.5 | -0.1 | 6 | 0.5 | 0.5 | 0.4 | 0.5 | -0.1 |
| **Mother's Role as** | | | | | | | | | | | | |
| Provides Formal Instruction | 27 | 0.8 | 0.2 | 0.7 | 0.3 | -0.1 | 29 | 0.7 | 0.2 | 0.7 | 0.3 | -0.1 |
| Provides Instructional Playthings | 28 | 0.6 | 0.1 | 0.6 | 0.2 | 0.1 | 29 | 0.6 | 0.2 | 0.7 | 0.1 | 0.1 |
| **Mother's Belief About Education** | | | | | | | | | | | | |
| Overall School Effectiveness | 27 | 3.8 | 1.0 | 3.9 | 0.8 | 0.1 | 28 | 3.8 | 1.2 | 3.7 | 1.0 | -0.1 |
| Career Preparation | 17 | 2.6 | 0.9 | 2.1 | 0.5 | -0.5 | 23 | 2.5 | 1.0 | 2.4 | 0.8 | -0.1 |
| Importance of Bilingual Education | 24 | 4.6 | 0.7 | 4.1 | 0.3 | -0.5 | 24 | 4.6 | 0.4 | 4.1 | 0.2 | -0.5 |
| Importance of Self-Concept | 24 | 4.3 | 0.5 | 4.2 | 0.4 | -0.2 | 24 | 4.5 | 0.5 | 4.1 | 0.2 | -0.5 |
| Educational Aspiration for Child | 25 | 17.4 | 1.2 | 17.4 | 1.4 | 0.0 | 23 | 17.1 | 1.2 | 17.7 | 0.7 | 0.6 |

| | EXPERIMENTAL | | | | | | COMPARISON | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | (Pre) X̄ | (Pre) SD | (Post) X̄ | (Post) SD | X̄ Difference | N | (Pre) X̄ | (Pre) SD | (Post) X̄ | (Post) SD | X̄ Difference |
| **Language Assessment of Child** | | | | | | | | | | | | |
| Spanish Ability | 32 | 1.8 | 1.1 | 1.6 | 1.0 | -0.3 | 17 | 2.6 | 0.5 | 2.3 | 0.5 | -0.3 |
| English Ability | 32 | 2.0 | 0.9 | 2.0 | 0.8 | 0.1 | 17 | 1.1 | 0.8 | 1.2 | 0.6 | 0.1 |
| **Maternal Language Usage** | | | | | | | | | | | | |
| Spanish-Speaking Ability | 32 | 2.4 | 0.9 | 2.4 | 1.0 | -0.1 | 17 | 2.8 | 0.6 | 2.7 | 0.5 | -0.1 |
| Instructs in Spanish | 8 | 0.4 | 0.4 | 0.3 | 0.4 | -0.1 | 1 | 0.0 | - | 0.0 | - | 0.0 |
| English-Speaking Ability | 32 | 1.9 | 1.1 | 2.0 | 1.1 | 0.1 | 17 | 1.2 | 0.9 | 1.2 | 0.4 | 0.0 |
| Instructs in English | 8 | 0.6 | 0.4 | 0.7 | 0.4 | 0.1 | 1 | 1.0 | - | 1.0 | - | 0.0 |
| **Mother's Role as Teacher** | | | | | | | | | | | | |
| Provides Formal Instruction | 32 | 0.8 | 0.2 | 0.8 | 0.2 | 0.1 | 17 | 0.7 | 0.2 | 0.6 | 0.3 | -0.1 |
| Provides Instructional Playthings | 32 | 0.5 | 0.2 | 0.6 | 0.2 | 0.1 | 16 | 0.6 | 0.2 | 0.4 | 0.2 | -0.2 |
| **Mother's Belief About Education** | | | | | | | | | | | | |
| Overall School Effectiveness | 32 | 3.9 | 1.0 | 3.8 | 0.9 | -0.1 | 17 | 4.1 | 0.7 | 3.5 | 0.7 | -0.5 |
| Career Preparation | 26 | 2.4 | 0.9 | 2.6 | 1.0 | 0.2 | 12 | 2.2 | 0.4 | 2.2 | 0.6 | 0.0 |
| Importance of Bilingual Education | 28 | 4.1 | 0.6 | 4.0 | 0.6 | -0.1 | 14 | 4.6 | 0.4 | 4.0 | 0.1 | -0.6 |
| Importance of Self-Concept | 28 | 4.2 | 0.4 | 4.1 | 0.3 | -0.1 | 14 | 4.3 | 0.5 | 4.0 | 0.0 | -0.3 |
| Educational Aspiration for Child | 29 | 13.8 | 2.0 | 14.6 | 2.5 | 1.1 | 17 | 15.2 | 2.6 | 14.9 | 2.3 | -0.4 |

| | EXPERIMENTAL | | | | | | COMPARISON | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference |
| **Language Assessment of Child** | | | | | | | | | | | | |
| Spanish Ability | 27 | 1.7 | 1.0 | 1.5 | 1.0 | -0.2 | 25 | 2.0 | 1.0 | 2.0 | 0.9 | 0.0 |
| English Ability | 27 | 2.4 | 0.7 | 2.1 | 0.8 | -0.2 | 25 | 2.4 | 0.7 | 2.3 | 0.6 | -0.2 |
| **Maternal Language Usage** | | | | | | | | | | | | |
| Spanish-Speaking Ability | 27 | 2.5 | 0.6 | 2.3 | 0.7 | -0.1 | 25 | 2.4 | 0.8 | 2.2 | 0.8 | -0.2 |
| Instructs in Spanish | 10 | 0.1 | 0.1 | 0.1 | 0.2 | 0.0 | 9 | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 |
| English-Speaking Ability | 27 | 2.1 | 0.8 | 2.0 | 0.8 | -0.1 | 25 | 2.2 | 0.6 | 2.2 | 0.6 | 0.0 |
| Instructs in English | 10 | 0.9 | 0.1 | 0.9 | -0.2 | -0.1 | 9 | 0.9 | 0.2 | 0.9 | 0.1 | 0.0 |
| **Mother's Role as Teacher** | | | | | | | | | | | | |
| Provides Formal Instruction | 27 | 0.8 | 0.3 | 0.7 | 0.3 | -0.1 | 25 | 0.8 | 0.2 | 0.8 | 0.2 | 0.1 |
| Provides Instructional Playthings | 27 | 0.6 | 0.3 | 0.7 | 0.2 | 0.1 | 25 | 0.6 | 0.2 | 0.6 | 0.2 | 0.0 |
| **Mother's Belief About Education** | | | | | | | | | | | | |
| Overall School Effectiveness | 27 | 4.2 | 0.7 | 4.2 | 0.5 | 0.0 | 25 | 4.1 | 0.9 | 4.0 | 0.8 | -0.1 |
| Career Preparation | 23 | 2.3 | 0.8 | 2.0 | 0.7 | -0.3 | 22 | 2.0 | 0.9 | 2.0 | 1.0 | 0.3 |
| Importance of Bilingual Education | 22 | 4.6 | 0.6 | 4.3 | 0.7 | -0.3 | 23 | 4.5 | 0.6 | 4.2 | 0.6 | -0.3 |
| Importance of Self-Concept | 22 | 4.6 | 0.4 | 4.5 | 0.6 | -0.2 | 23 | 4.6 | 0.4 | 4.5 | 0.5 | -0.1 |
| Educational Aspiration for Child | 26 | 15.4 | 2.7 | 15.5 | 1.9 | 0.1 | 25 | 15.9 | 2.2 | 15.8 | 1.2 | -0.1 |

| | EXPERIMENTAL | | | | | | COMPARISON | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference |
| **Language Assessment of Child** | | | | | | | | | | | | |
| Spanish Ability | 36 | 2.6 | 0.5 | 2.4 | 0.5 | -0.3 | 30 | 2.4 | 0.6 | 2.4 | 0.6 | 0.1 |
| English Ability | 36 | 1.4 | 0.8 | 1.6 | 0.5 | 0.2 | 30 | 0.9 | 0.9 | 1.2 | 0.9 | 0.2 |
| **Maternal Language Usage** | | | | | | | | | | | | |
| Spanish-Speaking Ability | 36 | 2.5 | 0.5 | 2.5 | 0.6 | 0.0 | 30 | 2.3 | 0.5 | 2.3 | 0.7 | 0.0 |
| Instructs in Spanish | 15 | 0.4 | 0.2 | 0.4 | 0.2 | 0.0 | 12 | 0.5 | 0.3 | 0.5 | 0.3 | 0.0 |
| English-Speaking Ability | 36 | 2.1 | 0.9 | 2.1 | 0.9 | 0.0 | 30 | 1.8 | 1.0 | 1.8 | 0.9 | -0.1 |
| Instructs in English | 15 | 0.6 | 0.2 | 0.6 | 0.2 | 0.0 | 12 | 0.5 | 0.3 | 0.5 | 0.3 | 0.0 |
| **Mother's Role as Teacher** | | | | | | | | | | | | |
| Provides Formal Instruction | 36 | 0.9 | 0.2 | 0.9 | 0.2 | 0.0 | 30 | 0.8 | 0.2 | 0.8 | 0.2 | 0.1 |
| Provides Instructional Playthings | 36 | 0.6 | 0.2 | 0.7 | 0.2 | 0.0 | 30 | 0.6 | 0.2 | 0.6 | 0.2 | 0.1 |
| **Mother's Belief About Education** | | | | | | | | | | | | |
| Overall School Effectiveness | 36 | 4.1 | 0.7 | 4.0 | 0.6 | -0.1 | 30 | 4.0 | 0.7 | 4.0 | 0.7 | 0.1 |
| Career Preparation | 32 | 2.7 | 1.1 | 2.7 | 0.7 | -0.5 | 24 | 2.5 | 1.0 | 2.5 | 1.0 | 0.0 |
| Importance of Bilingual Education | 35 | 4.4 | 0.5 | 4.3 | 0.4 | -0.1 | 24 | 4.5 | 0.5 | 4.3 | 0.4 | -0.2 |
| Importance of Self-Concept | 35 | 4.2 | 0.5 | 4.1 | 0.4 | -0.1 | 24 | 4.2 | 0.4 | 4.2 | 0.4 | 0.0 |
| Educational Aspiration for Child | 36 | 16.8 | 1.6 | 16.3 | 1.9 | -0.4 | 29 | 16.7 | 2.0 | 16.1 | 2.0 | -0.5 |

| | EXPERIMENTAL | | | | | | COMPARISON | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference |
| **Language Assessment of Child** | | | | | | | | | | | | |
| Spanish Ability | 20 | 1.6 | 1.2 | 1.7 | 1.0 | 0.1 | 6 | 1.6 | 1.3 | 1.5 | 1.3 | -0.1 |
| English Ability | 20 | 2.4 | 0.8 | 2.5 | 0.7 | 0.1 | 6 | 2.0 | 1.1 | 1.8 | 1.2 | -0.2 |
| **Maternal Language Usage** | | | | | | | | | | | | |
| Spanish-Speaking Ability | 20 | 1.9 | 1.3 | 1.8 | 1.2 | -0.1 | 6 | 1.5 | 1.6 | 1.8 | 1.5 | 0.3 |
| Instructs in Spanish | 9 | 0.3 | 0.3 | 0.2 | 0.3 | 0.0 | 3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 |
| English-Speaking Ability | 20 | 2.3 | 0.7 | 2.4 | 0.7 | 0.1 | 6 | 2.2 | 1.2 | 2.0 | 0.9 | -0.2 |
| Instructs in English | 9 | 0.7 | 0.3 | 0.8 | 0.3 | 0.0 | 3 | 0.8 | 0.2 | 0.8 | 0.2 | 0.0 |
| **Mother's Role as Teacher** | | | | | | | | | | | | |
| Provides Formal Instruction | 20 | 0.9 | 0.1 | 0.9 | 0.1 | 0.0 | 6 | 0.8 | 0.4 | 0.9 | 0.1 | 0.1 |
| Provides Instructional Playthings | 19 | 0.6 | 0.2 | 0.7 | 0.1 | 0.1 | 6 | 0.6 | 0.2 | 0.5 | 0.2 | -0.1 |
| **Mother's Belief About Education** | | | | | | | | | | | | |
| Overall School Effectiveness | 20 | 3.5 | 1.0 | 3.2 | 1.0 | -0.3 | 6 | 3.0 | 1.1 | 3.3 | 0.8 | 0.3 |
| Career Preparation | 14 | 2.6 | 1.3 | 2.6 | 0.9 | -0.1 | 5 | 3.0 | 1.4 | 2.8 | 1.1 | -0.2 |
| Importance of Bilingual Education | 16 | 4.3 | 0.4 | 4.2 | 0.5 | -0.1 | 5 | 4.3 | 0.8 | 4.3 | 0.3 | -0.1 |
| Importance of Self-Concept | 16 | 4.5 | 0.5 | 4.2 | 0.7 | -0.2 | 5 | 4.2 | 0.8 | 4.3 | 0.5 | 0.1 |
| Educational Aspiration for Child | 20 | 15.8 | 1.0 | 17.0 | 1.1 | 1.3 | 6 | 16.3 | 2.3 | 16.2 | 0.4 | -0.2 |

| | EXPERIMENTAL | | | | | | COMPARISON | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference |
| **Language Assessment of Child** | | | | | | | | | | | | |
| Spanish Ability | 11 | 1.7 | 1.0 | 2.0 | 0.9 | 0.2 | 4 | 1.5 | 1.3 | 2.3 | 0.5 | 0.8 |
| English Ability | 11 | 2.6 | 0.7 | 2.8 | 0.4 | 0.1 | 4 | 1.0 | 1.4 | 0.8 | 1.0 | -0.3 |
| **Maternal Language Usage** | | | | | | | | | | | | |
| Spanish-Speaking Ability | 11 | 2.1 | 1.0 | 2.1 | 1.0 | 0.0 | 4 | 2.3 | 1.0 | 2.3 | 0.5 | 0.0 |
| Instructs in Spanish | 6 | 0.2 | 0.2 | 0.2 | 0.4 | 0.0 | 0 | - | - | - | - | - |
| English-Speaking Ability | 11 | 2.4 | 0.8 | 2.6 | 0.7 | 0.3 | 4 | 1.5 | 1.3 | 1.3 | 1.5 | -0.3 |
| Instructs in English | 6 | 0.8 | 0.2 | 0.8 | 0.4 | 0.0 | 0 | - | - | - | - | - |
| **Mother's Role as Teacher** | | | | | | | | | | | | |
| Provides Formal Instruction | 11 | 0.9 | 0.1 | 0.9 | 0.1 | 0.0 | 2 | 0.7 | 0.1 | 0.4 | 0.6 | -0.3 |
| Provides Instructional Playthings | 10 | 0.7 | 0.2 | 0.8 | 0.2 | 0.1 | 3 | 0.4 | 0.0 | 0.5 | 0.4 | 0.1 |
| **Mother's Belief About Education** | | | | | | | | | | | | |
| Overall School Effectiveness | 11 | 3.4 | 0.9 | 3.4 | 1.3 | 0.0 | 4 | 4.0 | 0.0 | 4.3 | 0.5 | 0.3 |
| Career Preparation | 7 | 3.4 | 1.4 | 2.4 | 1.1 | -1.0 | 4 | 3.0 | 1.2 | 2.5 | 1.0 | -0.5 |
| Importance of Bilingual Education | 8 | 4.3 | 0.8 | 4.2 | 0.6 | -0.1 | 3 | 4.0 | 0.0 | 4.0 | 0.0 | 0.0 |
| Importance of Self-Concept | 8 | 4.4 | 0.5 | 4.4 | 0.5 | 0.0 | 3 | 4.0 | 0.0 | 4.0 | 0.0 | 0.0 |
| Educational Aspiration for Child | 11 | 17.6 | 0.8 | 18.0 | 0.0 | 0.4 | 4 | 16.5 | 1.0 | 18.0 | 0.0 | 1.5 |

# NUEVAS FRONTERAS I

| | EXPERIMENTAL | | | | | | COMPARISON | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference |
| **Language Assessment of Child** | | | | | | | | | | | | |
| Spanish Ability | 21 | 2.6 | 0.4 | 2.5 | 0.7 | -0.1 | 28 | 2.5 | 0.6 | 2.5 | 0.5 | 0.0 |
| English Ability | 21 | 1.2 | 0.8 | 1.5 | 0.9 | 0.3 | 28 | 0.9 | 0.8 | 1.2 | 0.8 | 0.3 |
| **Maternal Language Usage** | | | | | | | | | | | | |
| Spanish-Speaking Ability | 21 | 2.6 | 0.5 | 2.6 | 0.5 | 0.0 | 27 | 2.6 | 0.5 | 2.5 | 0.5 | -0.1 |
| Instructs in Spanish | 9 | 0.5 | 0.3 | 0.5 | 0.2 | 0.0 | 5 | 0.5 | 0.5 | 0.6 | 0.4 | 0.0 |
| English-Speaking Ability | 21 | 1.5 | 1.2 | 1.8 | 1.1 | 0.3 | 28 | 1.1 | 1.2 | 1.0 | 1.2 | 0.0 |
| Instructs in English | 9 | 0.5 | 0.3 | 0.5 | 0.2 | 0.0 | 5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.0 |
| **Mother's Role as Teacher** | | | | | | | | | | | | |
| Provides Formal Instruction | 20 | 0.9 | 0.1 | 0.8 | 0.2 | 0.0 | 28 | 0.7 | 0.2 | 0.8 | 0.2 | 0.1 |
| Provides Instructional Playthings | 20 | 0.6 | 0.2 | 0.7 | 0.2 | 0.1 | 28 | 0.5 | 0.2 | 0.6 | 0.2 | 0.1 |
| **Mother's Belief About Education** | | | | | | | | | | | | |
| Overall School Effectiveness | 21 | 4.4 | 0.8 | 4.0 | 0.7 | -0.4 | 28 | 4.2 | 0.9 | 4.0 | 0.3 | -0.2 |
| Career Preparation | 18 | 2.8 | 1.2 | 2.7 | 1.1 | -0.1 | 24 | 2.8 | 1.1 | 3.3 | 1.0 | 0.5 |
| Importance of Bilingual Education | 21 | 4.4 | 0.5 | 4.2 | 0.5 | -0.2 | 27 | 4.4 | 0.4 | 4.1 | 0.4 | -0.2 |
| Importance of Self-Concept | 21 | 4.4 | 0.5 | 4.3 | 0.4 | -0.1 | 27 | 4.2 | 0.5 | 4.2 | 0.4 | 0.0 |
| Educational Aspiration for Child | 21 | 15.5 | 1.0 | 15.9 | 1.8 | 0.3 | 28 | 14.4 | 2.0 | 15.9 | 1.8 | 1.4 |

| | EXPERIMENTAL | | | | | | COMPARISON | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference | N | (Pre) $\bar{X}$ | (Pre) SD | (Post) $\bar{X}$ | (Post) SD | $\bar{X}$ Difference |
| **Language Assessment of Child** | | | | | | | | | | | | |
| Spanish Ability | 31 | 1.1 | 1.2 | 1.3 | 1.0 | 0.2 | 30 | 1.8 | 1.2 | 1.6 | 0.9 | -0.2 |
| English Ability | 31 | 2.3 | 1.0 | 2.5 | 0.7 | 0.1 | 30 | 1.8 | 1.1 | 2.0 | 0.9 | 0.2 |
| **Maternal Language Usage** | | | | | | | | | | | | |
| Spanish-Speaking Ability | 31 | 1.6 | 1.2 | 1.9 | 1.2 | 0.2 | 30 | 2.0 | 1.1 | 1.9 | 1.1 | -0.2 |
| Instructs in Spanish | 11 | 0.2 | 0.3 | 0.2 | 0.3 | 0.0 | 9 | 0.4 | 0.5 | 0.4 | 0.4 | 0.0 |
| English-Speaking Ability | 31 | 2.2 | 1.1 | 2.3 | 1.1 | 0.1 | 30 | 1.7 | 1.4 | 1.8 | 1.3 | 0.1 |
| Instructs in English | 11 | 0.8 | 0.3 | 0.8 | 0.3 | 0.0 | 9 | 0.6 | 0.5 | 0.6 | 0.4 | 0.0 |
| **Mother's Role as Teacher** | | | | | | | | | | | | |
| Provides Formal Instruction | 31 | 0.8 | 0.2 | 0.9 | 0.2 | 0.1 | 30 | 0.8 | 0.2 | 0.8 | 0.2 | 0.1 |
| Provides Instructional Playthings | 31 | 0.6 | 0.2 | 0.6 | 0.2 | 0.0 | 30 | 0.6 | 0.2 | 0.7 | 0.2 | 0.1 |
| **Mother's Belief About Education** | | | | | | | | | | | | |
| Overall School Effectiveness | 31 | 3.5 | 1.1 | 3.5 | 1.0 | 0.0 | 30 | 3.7 | 1.2 | 3.6 | 0.8 | -0.1 |
| Career Preparation | 24 | 2.3 | 0.8 | 2.6 | 0.9 | 0.3 | 26 | 2.0 | 1.1 | 2.5 | 0.9 | 0.4 |
| Importance of Bilingual Education | 25 | 3.9 | 0.6 | 3.7 | 0.5 | -0.2 | 27 | 4.3 | 0.9 | 4.0 | 0.4 | -0.4 |
| Importance of Self-Concept | 25 | 4.1 | 0.4 | 4.1 | 0.4 | -0.1 | 27 | 4.5 | 0.5 | 4.2 | 0.4 | -0.3 |
| Educational Aspiration for Child | 31 | 14.7 | 1.7 | 15.3 | 2.1 | 0.6 | 30 | 16.2 | 2.1 | 15.4 | 2.2 | -0.8 |

# APPENDIX Y

## THE SETTINGS IN WHICH FOUR BILINGUAL BICULTURAL CURRICULUM MODELS WERE EVALUATED

## A. Un Marco Abierto

### 1. Sociocultural Environment

Both High/Scope sites were located in Hispanic enclaves of large metropolises. Un Marco Abierto I lay about 12 miles east of the Los Angeles City Hall near the border of a section of the city known as East Los Angeles and the incorporated city of Montebello. Un Marco Abierto II was found about two miles south of downtown Milwaukee in the area known as Hunter's Point. Both areas were highly industrialized and characterized by factories and warehouses that lay principally along the major thoroughfares. Interspersed with the large buildings and predominating along most of the major streets were a series of bars, take-out food stands, small restaurants, small markets, and commercial establishments such as auto repair shops, laundromats, and dry goods stores.

Residential areas differed in the two locales. Those in Milwaukee were made up of apartment buildings and large houses converted into multiple family dwellings, all of which were contiguous to the commercial zones, whereas in East Los Angeles neighborhoods were demarcated by four-lane highways and consisted largely of single family dwellings with yards. In both cities residential buildings or apartments were generally rented by the working-class residents.

A number of social services were available in each community and these agencies were staffed mainly by members of the local community. Community centers and church organizations provided services including adult English lessons, lunches for senior citizens, and legal advice for community members.

The ethnic composition of the communities reflected an increase of Spanish-surnamed families over the last few years. In East Los Angeles, although Hispanics, primarily of Mexican descent, had been the largest ethnic group in the area since the 1950s, at one time there were also large concentrations of Japanese and Anglos in the community. By 1960, however, approximately 63% of the area's population was Spanish-surnamed and that figure had increased to 82% by 1970. A strong sense of ethnic pride also developed in recent years among East Los Angeles Hispanics. This was translated into greater political awareness and a demand for better social services and skilled employment.

Approximately 75% of the population in the Hunter's Point area of Milwaukee was considered Hispanic. In contrast to the almost entirely Mexican ethnicity of the East Los Angeles population, two major ethnic groups were represented in the Hispanic population of Milwaukee. Mexicans, who began migrating to the area as early as the 1920s, made up approximately 65% of the total, and Puerto Ricans, who began settling in the area after the Second World War, totaled about 35%

of the population. Both groups came originally to the area to work in the tanneries. Competition for the same jobs; as well as ethnic differences, led to some animosity between these two groups. The area's Mexicans were numerically superior and more politically active. They tended to dominate formal organizations. Despite such efforts to set themselves apart from their fellow Hispanics, all Spanish-surnamed ethnic groups tended to view bilingualism as an asset and prided themselves on their ethnic heritage.

2. Administration

Each site was supervised by an agency located about a mile from the Head Start campus. In East Los Angeles, the agency coordinated administrative tasks, medical and social services, parent participation, teacher training, and supervision for nine Head Start centers. Following Head Start guidelines, these offices provided a parent coordinator, health care worker, social worker, special education for children with developmental handicaps, and monthly parent workshops on issues related to children's learning skills and social development. All Head Start-related services were administered from the Head Start center (parent meetings, teacher in-services, etc.), and all personnel such as the social worker, parent coordinator, and Head Start director had offices in the center.

The Milwaukee agency, on the other hand, was responsible for providing social services to the Hispanic community at large and therefore devoted only a fraction of its resources to Head Start. Funding for the Head Start program at Site II, however, was channeled to this agency through another community development office.

The responsibilities of the directors (both Hispanics) at the two High/Scope sites differed considerably. Both had administrative duties related to policy and funding (e.g., writing proposals), but in East Los Angeles teachers worked directly with the teacher supervisor who evaluated their performance and responded to their classroom needs. Because the director was not physically present at the school on a day-to-day basis, the teachers had a considerable amount of freedom and responsibility for running the program themselves. Most hiring decisions, especially of assistant teachers, were made in consultation with teachers and their recommendations were given important consideration.

In Milwaukee, the Head Start director working directly on site supervised teachers, making frequent classroom observations and arranging teacher interviews. All hiring of staff members, salary negotiations, and distribution of funds were made through the administration on consideration of the director's recommendation.

Both directors were supportive of the High/Scope curriculum. The California director welcomed the experimental program, seeing it as an

opportunity that would bring the agency national recognition for being one of the first sites to implement the model. He was also enthusiastic about getting new training for the teachers and hoped they would be able to help disseminate the model to other sites in the agency.

The Head Start director in Milwaukee cooperated fully with the High/Scope trainer and tried to assist teachers when they had problems understanding the teacher's guide. She did, however, express doubts as to the effectiveness of the curriculum, seeing it as too difficult for the teachers and not structured to ensure formal concept development.

3. Head Start Settings

The two sites differed in terms of the physical plant. The school at Site I consisted of a prefabricated portable structure, while the school at Site II was housed in an old stone church divided into three floors. The large rectangular area in East Los Angeles (40' x 30') was partitioned to provide for a single classroom with tables where children both ate and worked; a small kitchen alcove with a compact sink, stove, and microwave oven for preparing meals; and a small office area where teachers had one desk in common for preparing lesson plans and paperwork. Closets and bathrooms were located along the east walls. The Milwaukee site offered three classrooms, offices for the director and social workers, auxiliary kitchen, cafeteria, a teachers' lounge, and several large empty rooms used by visiting medical staff or by the children when it was too cold to go outside.

Both sites had large playgrounds complete with asphalted, sandy, and grassy areas. Both offered a variety of equipment designed to aid in large muscle development (slides, tricycles, wagons, jungle gyms, and treehouses). The California site seemed better arranged to elicit fantasy play from children as the playground contained a boat, a bridge swinging between two ladders, and a variety of plastic boxes, buckets, and tools. Warm weather permitted the East Los Angeles children to utilize their playground more frequently than did Milwaukee children.

Fifteen children in each of the Site I classes attended for four hours a day, four days a week. Two classes were held in the morning and one in the afternoon. Each class had one teacher and one assistant teacher. The two morning classes occupied the room at the same time, forming one large class of 30 children with four adult staff. In the afternoon there were 15 children and two staff members. In each class, the teacher and assistant teacher were assigned seven or eight children at a table for meals, planning, recall, and small group activities. During the rest of the time, children were integrated and had access to all the adults and children in the room.

At Site II, teachers taught double sessions of approximately three hours each, four days a week. Two of the classes observed in this evaluation were held in the morning and one in the afternoon. The approximately 15 children per class worked with a teaching team of one teacher and one or two aides. As in East Los Angeles, teachers or aides were assigned five to seven children to a table for most of the daily activities. While East Los Angeles teachers were provided more free time for planning and child evaluation, they also had responsibility for daily maintenance of the school and took turns sweeping, mopping, and cleaning the bathrooms during children's rest time in both the morning and the afternoon sessions. At Site II, teachers had only to keep their rooms in order while two janitors took care of school maintenance.

Children attending both the experimental and control schools in East Los Angeles lived in surrounding neighborhoods and therefore walked to the centers accompanied by parents or siblings. In contrast, 80% of the children attending Head Start at the Milwaukee site were bused.

## B. AMANECER

### 1. Sociocultural Environment

The two South Texas cities of Corpus Christi and Laredo served as the testing grounds for the AMANECER curriculum model. Both locales had a large population of Hispanics and both were hubs of transit networks for South Texas, although neither was a major urban center.

AMANECER I was located in Corpus Christi, a coastal city with a population of over 200,000. At the time of the 1970 census, 53% of the city's 204,525 population was White, 40.6% was Spanish-language or surname, and 5.1% was Black. The large Hispanic population and Spanish language media developed to meet the needs of that group made it a city which linguistically approached being bilingual, although English continued to be the majority language. Its diverse economic base included shipping, agriculture, tourism, the oil and petrochemical industries, and fishing. Hispanics were concentrated in the service industries offering relatively low wages. They tended to live in the low-income housing in the south and west sides of the city which surrounded the sprawling seaside residences of the higher income families.

AMANECER II was located in Laredo, a city of over 70,000 which was situated adjacent to the Mexican border. It had as its economic base tourism and ranching. The city was situated on the Pan-American Highway and received much of the American and Mexican tourist traffic that went both north and south of the border. Geared to this flow of tourists, many of the area's inhabitants, of which 86% are Hispanics,

were employed in various service-oriented businesses, such as restaurants, motels/hotels, and retail stores, which were strung out along the highway. Many residential areas were characterized by pock-marked dirt roads and clapboard houses. Informants described the area as economically depressed and the available jobs as low skilled and low paying. Because of the city's close proximity to the U.S.-Mexican border and the high proportion of Hispanic inhabitants, the use of Spanish as a medium of communication and commerce was common.

The Head Start centers themselves at both replication sites were located in areas separated from the main residential or commercial areas of the city. AMANECER I, which was surrounded by pastures, utilized the physical plant of a former Catholic high school. The center at Laredo was situated on a former military base on the outskirts of town, near the airport. Thus neither of the centers was truly neighborhood based.

2. Administration

The AMANECER sites were both administered by local community action agencies located at a distance from the Head Start centers. Within such agencies responsibilities for the centers fell to the Head Start project directors and the educational coordinator in the case of AMANECER I and the codirector and acting AMANECER coordinator in the case of AMANECER II.

The educational coordinator and a curriculum specialist were housed at Site I and had more direct interaction with the staff than the Head Start director. The educational coordinator was viewed as the key in the decision making process by staff members who often provided input aimed at affecting his decisions.

Both sites had governance-board structures which allowed for community input. At AMANECER I, staff hiring was conducted through public announcement. Applicants were first interviewed by the educational coordinator and the Head Start director. These individuals submitted the names of recommended candidates to the policy council who approved or rejected the applicants.

At AMANECER II, community input was enacted by means of the Parental Screening Committee which included a group of Head Start parents. This committee was responsible for approving the hiring of Head Start teaching staff.

Site II housed only the social workers and classrooms. The Head Start director and AMANECER coordinator were situated at the central Community Action Program offices. The director was seldom directly involved with the site as the coordinator was responsible for most of the direct interactions with AMANECER II.

Both sites had head teachers charged with making day-to-day decisions. However, AMANECER I lost its original head teacher in November and her replacement in January, and no head teacher was designated after that. At Site II, a single head teacher was responsible for daily decisions throughout the year. Individual teachers, however, were fairly autonomous within their own classrooms.

Staff recruitment for the demonstration project provides a good example of the decision-making process at both sites. Teachers at AMANECER I stated that the coordinator approached them with the information that they would be taking part in the implementation of a new curriculum model. The teachers and aides implied they had had no choice in participating in the project. At AMANECER II, the coordinator, a model supporter, also made the choice of teachers, aides, and classrooms for the model's implementation.

3. Head Start Settings

The isolation of the Head Start centers led to situations that may be atypical of many Head Start populations. Unlike neighborhood-based Head Start centers, the sites recruited students from throughout the city. Because there were few potential families in the immediate area, the majority of the children were bused or driven to the sites.

The building at Site I was part of an old high school, which had not been used since 1972 when it was closed due to declining enrollment. The Head Start project used a two-story, yellow-brick building with its adjacent playground and the kitchen facilities of a red-brick building across from the outside play area. Initially, the 150' by 75' playground area had no equipment. Parents later set up swings, slides, and other structures provided by the Head Start center with money raised by parents the previous years.

The center at AMANECER II was housed in former barracks of a military base. This building had been renovated to accommodate the teachers and children. The building was divided into two sections. Section A housed the main office where the social worker and health aide had their offices. Adjacent to the office were two large classrooms. Section B of the center was located directly across from Section A. The two sections were separated by a large rectangular playground which had a variety of equipment for child use, such as swings, slides, jungle gym sets, a merry-go-round, and small metal ponies for riding. Section B housed the classrooms implementing the AMANECER curriculum. All of the classrooms in this section were extremely small.

AMANECER I was a full-day care center which opened at 8:00 A.M. and ran until 2:30 P.M. Teachers had a scheduled planning session between 2:30 and 4:00 P.M. AMANECER II was a full-time extended day

care center open from 8:00 A.M. to 5:00 P.M. The sites' activities included a food service program for (1) breakfast/snack, (2) lunch, and (3) afternoon snack. Eating time took approximately two hours. The small size of the rooms was a special problem during nap time when teachers set out individual cots on the room's floor. As the children were closely packed together, the nonsleepers found it easy to disturb the sleeping children.

## C. ALERTA

### 1. Sociocultural Environment

The two ALERTA replication sites were in areas of New York City with predominantly Hispanic and Black populations. ALERTA I was located in South Bronx, an area where an advanced state of physical deterioration and massive population displacement were evident. Although there was a section of renovated townhouses near the ALERTA I center, most of the area was characterized by the skeletons of abandoned, gutted buildings. ALERTA II was situated in the Lower East Side of Manhattan, an area of red-brick tenements in various stages of disrepair and several large housing projects along the East River. In the immediate area of the Head Start center there were relatively fewer destroyed buildings and consequently more people in the streets and a greater amount of commercial activity than near the South Bronx center.

In both locales, residents rented the apartments in which they lived. The generally tight housing market in the city was exacerbated in these areas by the deterioration of edifices, although renovation efforts and cooperative management were making available some additional living quarters. Commercial establishments, which were generally small, included fruit and vegetable stores, restaurants, ethnic food stands, and retail outlets. There were a number of churches of different denominations in both communities. Social clubs were in evidence along with human services agencies that included government, legal aid, and self-help organizations. Unemployment and underemployment were high in both areas. One result of this appeared to be increasing political awareness and concern for community education and, in some cases, growing unity across ethnic lines in the face of shared crime and economic problems.

Great multicultural diversity characterized both communities. Puerto Ricans had been the largest ethnic group in both areas since the 1950s, and comprised about 60-70% of all residents. More recent immigrants included Dominicans, West Indians, and South and Central Americans. About 30% of the population was Black. In addition, Eastern European, Jewish, Chinese, and Italian enclaves were found in sections of the Lower East Side near the Head Start center.

Both Spanish and English were common as the languages of conversation, place names, and reading matter in the two communities. Language mixing and dialectical differences were in evidence. People had considerable pride in their cultural heritage, but feelings about bilingual education were mixed. Spanish speakers maintained a desire that their children also learn Spanish, but voiced the importance of children learning English in school to achieve greater economic security in a generally English-dominant metropolis.

2. Administration

Each center had its own administrative staff with offices on the premises. In addition to a director, a parent coordinator, secretaries, custodian, and kitchen staff, both sites also had family workers for each classroom and an education director. Because the principal function of both directors was to connect the center to supportive resources, including funding sources and social services like medical facilities, city-based children's programs, and public schools, the directors were not always present on a daily basis. At neither site were the directors closely involved in most curriculum-related decisions. In general, they both supported the multicultural emphasis of the ALERTA model as well as its bilingual design.

The major link between the model developers and the Head Start centers was the education directors. In addition to coordinating the functioning of the teaching staff, these individuals were resource persons who helped work out questions raised about model aims and activities. The education directors at both sites viewed the ALERTA curriculum favorably. In addition, each class had a family worker who was the primary channel through which community and family influences were transmitted to the classroom. Their presence facilitated ALERTA's aim for continuity between home and classroom. ALERTA I also had a health coordinator, while family workers took on health education and preventive care functions at ALERTA II.

All staff members had an input into the program through participation in different forums. At Site I, biweekly educational planning meetings were held for the education staff, monthly classroom committee meetings for most staff and parents, and monthly in-service sessions by the model developers for the entire staff. At Site II, educational planning meetings were conducted weekly along with weekly meetings of the full staff. Daily and weekly plans were presented for discussion at the staff meetings, facilitating the coordination of activities across classrooms and enhancing the integration between particular goals and objectives. However, in-service training was rare, especially in the early part of the year. At both sites, the nonteaching staff also contributed to the curriculum through participation in special activities and cooking ethnic foods.

3. Head Start Settings

The two ALERTA replication sites were located in basements of churches. Both centers had two rectangular classrooms separated by a hallway, as well as administrative offices, a parents' room, closets, kitchen, and bathroom. Space limitations made for some crowding, but classrooms at both sites had most of the learning centers specified by the model. Some of these were partitioned by furniture and shelving. For large-muscle exercise, ALERTA I used an upstairs gymnasium and a nearby playground, while ALERTA II used a hardwood-floor assembly hall and asphalt-covered yard in addition to a nearby playground.

At both sites, classes of 17 to 18 children met for three-hour sessions, five days a week. Two teacher-aide pairs each conducted a morning and an afternoon class at ALERTA I. Three of these classes were the subject of the current evaluation. The same teacher and aide conducted a morning and an afternoon experimental class at ALERTA II, while another pair taught two classes of three-year-olds.

Classes at both sites followed a daily routine in which particular new activities were scheduled for each day. Teachers at ALERTA I alternated language groupings day by day, posted their lesson plans in the hallway, specified English and Spanish vocabulary words for each week, and delineated daily objectives for large group, art, story, outdoor, and language group times. Teachers at ALERTA II infrequently conducted language groupings, did not post their lesson plans, formulated more general goals and objectives, and maintained a more flexible routine.

Children attending both ALERTA centers proportionately represented community ethnic and linguistic ratios. All lived within walking distance of school and were accompanied by parents (primarily mothers), siblings, grandparents, or other caretakers. Often late parent arrival with children or early pick-up of children resulted in the shortening or curtailment of activities, particularly at ALERTA II. More parents stayed to socialize at ALERTA I, but few at either site actually participated in classroom activities.

D. Nuevas Fronteras

1. Sociocultural Environment

Both Nuevas Fronteras replication sites were located in semi-rural communities. Nuevas Fronteras I was located in Rio Grande City, a town of about 6,000 residents lying along the Rio Grande River about halfway between Brownsville and Laredo. Some long-term residents claimed descent from the original Spanish land-grant holders who founded the community as a ranching settlement. The semiarid

countryside of mesquite cover and rolling hills continued to support cattle ranching, while large corporate farms along the river produced irrigated crops of melons, peppers, onions, and cotton. Although oil was produced since the early part of the century and agribusiness employed people on corporate farms and in packing sheds, economic opportunities in the area were generally limited. Unemployment and underemployment ranged as high as 40%, and many residents were forced to look elsewhere for employment.

The Nuevas Fronteras II site was located in Corona, a rapidly growing community of 35,000 in Southern California. Like Site I, irrigation had transformed part of this warm and dry region into a productive agricultural zone. Large citrus ranches were a major employer in the area, seasonally hiring large numbers of agricultural workers as fruit pickers. However, proximity to Los Angeles, good climate, and availability of land and recreational facilities encouraged considerable growth and development in recent years. Construction, light industry, and food processing provided some diversification of the local economic base. Like Nuevas Fronteras I, however, there did not exist within the community a great potential for occupational mobility.

Generally, few social services were available at Nuevas Fronteras I because of its small size and rural location. There were some state and federally funded programs and church-sponsored activities, in addition to the recreational activities of football, dances, and bingo. Community activities at Nuevas Fronteras II were sponsored by the public school system, several churches, private organizations, and city and federal programs, while recreational avenues included theaters, parks, a new public library, and nearby aquatic and mountain sport locations. At both sites, the Head Start children tended to reside in small clapboard frame houses in low-income neighborhoods of the community.

The great majority of residents at Site I were Mexican American (80-95%) or Mexican (about 10%). The principal language of the community was Spanish; 93.63% of county residents identified that language as their mother tongue according to the 1970 census. Many aspects of Mexican culture persisted through Spanish language TV and radio programs originating in Mexico and through visits back and forth across the border. The official language of the community, however, was English. English was the sole language heard in the classrooms prior to the advent of bilingual education, only English-language reading material was available locally, and business was generally transacted in English. The peculiar geographic and linguistic characteristics of the community were also reflected in a self-identity in which an individual described him- or herself as "Mexican" when speaking in relation to people in other parts of the country and as "American" or "Texan" when referring to Mexico or recent immigrants from Mexico.

Hispanics dominated the social, political, and economic life of the community. Those families who qualified for Head Start, however, were concentrated at the lower end of the economic scale in farm occupations and service industries.

Roughly half of the population of the Nuevas Fronteras II community was Anglo and half was Hispanic. The Hispanics were primarily Mexican Americans, although Mexican-born individuals were also present. Most Hispanics worked in farm, canning, and factory jobs rather than in white-collar or service positions. Recent arrivals from Mexico were more heavily represented among citrus workers. Longer-term Hispanic residents tended to be second- or third-generation immigrants from other parts of the Southwest. Even for most of the Hispanic residents, the dominant language was English and informants expressed little identification with Mexico.

2. Administration

At Site I, all Head Start functions except the migrant programs were directed by a Head Start director in conjunction with a local Community Action Agency. This agency provided support to 10 classrooms. Nine of the classrooms, including those implementing the model, were under the direction of a Head Start coordinator.

Site II was also housed in an elementary school which was part of a local school district. At the center, teachers ordered supplies in conjunction with a Head Start secretary, who also coordinated meetings with parents. A Head Start director, hired the previous year by the local school district, was ostensibly in charge of the preschool program. However, she was concerned primarily with her responsibilities as principal of the elementary school housing the Head Start program and with generating funding and therefore rarely had time to visit the Head Start classrooms.

The Nuevas Fronteras model received different degrees of administrative support at the two sites. At the Rio Grande site, administrators supported the model and felt that it had relevance to local needs. At the Southern California center, on the other hand, the director had had no input into the selection of the Head Start replication site for the Nuevas Fronteras curriculum. She expressed ambivalence about bilingual education in general and was uncommitted to the bilingual bicultural aims of the model.

3. Head Start Settings

The two Nuevas Fronteras replication sites were each housed in three classrooms on the grounds of a public elementary school. At Site I, the Head Start classrooms were located in a prefabricated building, while the Site II experimental classrooms were in a rear wing of the elementary school complex. Each site had an adjacent dirt

and grass playground containing climbing, swinging, and sliding equipment, and Site II had a separate Head Start office on the grounds. Relations between the Head Start teachers and the elementary school staff at both sites were negligible.

Classrooms at both replication sites were spacious, well illuminated, and relatively uncluttered by furniture. Colorful materials, including prominently displayed children's work labeled by teachers to match class curriculum themes, lined the walls. Organization was similar across classrooms in each site. At Nuevas Fronteras I, each room contained a sink, drinking fountain, and a bathroom, in addition to learning centers that corresponded to model guidelines: large group/music, fantasy, math, art, small group, book, block, and discovery/science areas. The same areas, with the exception of math, were found at Nuevas Fronteras II. However, bathroom facilities within the classroom were lacking at this site.

Class size and daily schedules differed at the two sites. At Site I, the 19 children in each class met for a full-day (6-1/4 hour) session, five days a week. By comparison, the 16 children in each of the Nuevas Fronteras II classrooms met for three hours in the morning, five days a week. Within each site the teacher and aide in each class followed a similar routine of daily activities and coordinated planning to the extent that the same curriculum units were covered at the same time.

The composition of children at the Texas site reflected ethnic and language patterns of the community as all of the children were Hispanic and all but three Spanish-preferring. About two thirds of the students in Site II experimental classes were Hispanic, but English-speaking children predominated. Most children at both sites were bused. Approximately equal numbers of boys and girls were recruited into both programs, but a sex imbalance was observable in certain classes at each site. Because of the generally mild weather in both areas and the provision of transportation, children attended regularly at both sites, averaging over 80% attendance in all classes during the year.