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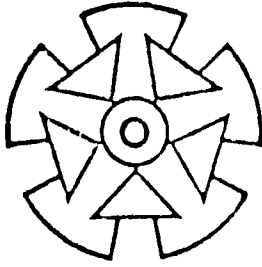
## ABSTRACT

Formerly the Responsive Environment Program for Spanish American Children, REEEP is an educational intervention program for "high risk" (of low birth weight) 3-, 4-, and 5-year-old children, living in the Clovis, New Mexico area. Goals of REEEP, an Elementary and Secondary Education Act Title III program, are: to prevent school failure with an intervention program which includes early identification and remediation of developmental learning deficiencies and to integrate handicapped children into the regular school program; to provide in-service training to selected early childhood and kindergarten teachers and aides employed by various New Mexico school districts; and to disseminate information concerning the program. Evaluation of student achievement was based on pre- and posttests using standardized tests which measured language development in Spanish and English, school readiness, and self-concept. In-service training and dissemination activities were subjectively evaluated using site visits, observations, records, and self-reports by the staff. Major findings included: students made significant gains in language development in English and school readiness; students indicated a positive and continuous growth concerning self-concept and social development; the variable making the greatest contribution to language development in English was IQ; and the in-service training provided to the 47 teachers and aides was extremely successful and effective. (Author/NQ)

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FINAL EVALUATION REPORT  
1976-77  
SECOND YEAR

RESPONSIVE ENVIRONMENT EARLY EDUCATION PROGRAM

Funded by:

Clovis Municipal Schools, Clovis, New Mexico  
ESEA, Title III  
State Department of Education  
Santa Fe, New Mexico

U S DEPARTMENT OF HEALTH,  
EDUCATION & WELFARE  
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March 15, 1977

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D O C U M E N T   R E S U M E

TITLE: Responsive Environment Early Education Program (REEEP):  
Second Year Evaluation Study, End of Year Evaluation  
Report, 1976-77

INSTITUTION: Askins (B. E.) and Associates, Lubbock, Texas; Clovis  
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Handicapped; Intervention; Demonstration Program; Bilingual  
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School Readiness Tests; Self-Concept; Social Development;  
Teacher Training; Program Evaluation.

ABSTRACT:        This report is the results of the second year external  
evaluation of a continuing evaluation study of the  
Responsive Environment Early Education Program (formerly  
the Responsive Environment Program for Spanish American  
Children - REPSAC). This program serves as an educational  
intervention providing direct services to "high risk" (low  
birth weight-less than 5½ pounds) 3-, 4-, and 5-year-old  
children, living in the area served by the Clovis Municipal  
Schools, Clovis, New Mexico. In addition, the program  
serves as a base for training selected early childhood and  
kindergarten teachers and aides.

The major goals for the program are: (1) To prevent  
school failure with an intervention program which includes  
early identification and remediation of developmental  
learning deficiencies and to integrate handicapped children

into the regular school program; (2) To provide in-service training to selected early childhood and kindergarten teachers and aides employed by various school districts of New Mexico; and (3) To disseminate information concerning the program. The design for the external evaluation during 1976-77 was based upon the program objectives as pertains to: student achievement; in-service training; and dissemination activities. As concerns student achievement (pre- and posttests using standardized tests to measure language development in Spanish and English, school readiness, and self-concept), program impact was determined by a special regression analysis model using four dependent variables and twelve independent variables. In-service training and dissemination activities were subjectively evaluated using site visits, observations, records, and self-reports by the staff.

Major findings included: (1) Students made significant gains in language development in English and school readiness; (2) Students made some gains in language development in Spanish; however, the gains were not statistically significant; (3) Students indicated a positive and continuous growth as concerns self-concept and social development; (4) The regression analysis data for the objectives pertaining to language development in English indicated that the variable making the greatest contribution was IQ, which accounted for 77% of the variance; and (5) The in-service training provided to the 47 teachers and aides was extremely successful and effective. Findings of the follow-up study of former students in the program are reported in a separate study.

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## PROJECT DESCRIPTIVE AND EVALUATIVE INFORMATION

This report describes an external evaluation study of the Responsive Environment Early Education Program (REEEP) during the 1976-77 school year. This report is part of a continuation study by an independent consultant and service organization with its direction primarily through various faculty members of the College of Education, Texas Tech University.

### DESCRIPTION OF THE PROGRAM

This program is designed to serve as an educational intervention providing direct services to approximately 40 high risk 3-, 4-, and 5-year old children, including the integration of handicapped children, living in the area served by the Clovis Municipal Schools, Clovis, New Mexico. Children are considered "high risk" as a result of their low birth weight, 5½ pounds or less, and who will probably have accompanying handicaps as they enter the first grade. This program attempts to demonstrate that such an early intervention can provide such children the experiences necessary to succeed and remain in the educational mainstream.

In addition, the program serves as a base for training selected early childhood and kindergarten teachers and aides employed by various school districts in New Mexico.

After completing REEEP (1-3 years depending upon the child's age at entry), the children will enter the first grade. A follow-up study is being conducted on these students as they enter the mainstream of formal education (Grades 1-6).

#### Development of the Program

In developing, the program (formerly the Responsive Environment Program For Spanish American Children - REPSAC) has drawn heavily upon various experimentally developed models in early childhood education including: the New Nursery School, Northern Colorado University; the responsive environment concept of Omar K. Moore; Project LIFE (Language Instruction to Facilitate Education); the Piaget Early Childhood Curriculum, and various parent involvement programs throughout the nation. In addition, the program has partly adapted the Early Prevention of School Failure Model, a nationally validated Title III ESEA developer-demonstrator project (Peotone, Illinois). Thus, beginning with the school year 1975-76, this program was an adaptation of the former Responsive Environment Program for Spanish American Children (REPSAC) and the Early Prevention of School Failure Project.

The rationale for the design and development of REPSAC emanated from research which indicated that children with a low birth weight, coupled with other factors, generally experience childhood difficulties in the cognitive areas of development which can result in subsequent retardation as



they progress through their formal education. Spanish American children with such a low birth weight coupled with a language different from that used in the American educational setting, have additional handicaps. Further, Spanish American children with the foregoing handicaps whose home environment often does not include toys, materials, games, and media which can enrich their childhood experiences enter the first grade with a notable disadvantage in comparison to children with such advantages.

Recognizing that approximately 22% of the total school population of Clovis, New Mexico were children with a Spanish surname and that approximately 39% of children enrolled in special education were of Spanish origin, and accepting the premise that a high percentage of "high risk" children come from this particular ethnic group, the idea of an early educational intervention became a reality in the form of REPSAC. REPSAC officially started in September, 1971 with 32 students and operated four years (1971-75) serving low birth weight Spanish American children.\* Beginning with school year 1975-76, the Responsive Environment Early Education Program (REEEP) was expanded to serve low birth weight children of all ethnic groups.

#### Target Children and Criteria for Selection of Participants

The target group children of the program are 3-, 4-, and 5-year-old low birth weight children who are considered educationally handicapped. Criteria used to select children to participate in the program are: 1) Low birth weight - 5½ pounds or less; 2) Health history of child; 3) Level of education of parents; 4) Educational attainment of siblings; 5) Home language - Spanish or English; and 6) Income of family.

#### Faculty/Staff/Advisory Board

The faculty/staff of REEEP consists of: the director; one certified teacher; two teacher-aides; and one custodian/bus driver.

In addition to the regular faculty/staff, there is a Professional Advisory Board. The purpose of the Professional Advisory Board is to provide the director with guidance and direction of the activities of the program and the development of the various program components. The board consists of individuals who can provide expertise in the fields of special education, early childhood education, bilingual and bicultural education, educational technology, and the responsive environment concept.

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\*For references pertaining to evaluation results of REPSAC during these years, see Bibliography 4-9.

### Location and Physical Facilities

The project is located about six blocks southwest of the central business area of Clovis, New Mexico and the physical facilities blend into the surrounding buildings and are not discernable from the rest of the community except by a sign on one of the houses. The physical facilities of the program consist of two houses with an adjoining yard. One house, which is a renovated former single family dwelling, is used as the main teaching facility, and the other building serves as office and workroom which is a renovated former beauty shop.

### Goals and Objectives

The following goals and objectives give direction to the organization and administration of the program.

#### Goals

The major goals of the program are:

1. To prevent school failure with an intervention program which includes early identification and remediation of developmental learning deficiencies and to integrate handicapped children into the regular school program.
2. To provide in-service training to selected kindergarten teachers and teacher-aides employed by various school districts throughout New Mexico.
3. To disseminate information concerning the program.

#### Objectives

The major objectives of the program are:

1. Student Achievement (At the end of the school year, the student will be able to:)
  - 1.1 Demonstrate language ability in English which is normally accepted at their age level. Evidence of achievement will be determined from significant gain scores of the Peabody Picture Vocabulary Test. (Cognitive)
  - 1.2 Demonstrate language ability in Spanish which is normally expected at their age level. Evidence of achievement will be determined from significant gain scores of the Test for Auditory Comprehension of Language - Spanish. (Cognitive)
  - 1.3 Demonstrate school readiness in such areas to include: listening ability; visual acuity; and recognition of

similarities, differences, and numerical analogies. Evidence of achievement will be determined from significant gain scores of the Readiness Test for Disadvantaged Children. (Cognitive)

- 1.4 Exhibit a positive self-concept and favorable emotional development. Evidence of such behavior will be determined from rating from the Developmental Profiles which involve periodic teacher evaluations in six areas of the affective domain: awareness of self, self-confidence, interpersonal comprehension, sensitivity to others, effectiveness, and tolerance. Evidence of growth/development for each age-level will be determined from individual profile sheets plotted in terms of direction and rate of growth/development. (Affective)
- 2.1 Upon completion of the various in-service training sessions, teachers and aides will be able to employ various aspects of the curriculum in their own educational settings as as to meet the needs of children with developmental lags and learning deficiencies. This will include incorporating the approaches of Piaget and Montessori, using various materials such as the Project LIFE materials, and using the responsive environment typing booth. Evidence of achievement will be determined by observations and written examinations.
- 3.1 Information concerning the programs and operation of the program will be disseminated by various means such as:
  - a. Progress reports to the LEA central office, school board, and local area news media.
  - b. Site-visitation by interested individuals and groups, both from in and out-of-state.
  - c. Copies of the end-of-year Evaluation Report will be disseminated throughout the state including the Educational Resources Information Center (ERIC).

### Program Activities

Activities of the program can be classified as: instructional; in-service; dissemination; and outreach.

### Instructional Activities

The instructional activities of the program are conducted in two-half day sessions five days a week. Approximately twenty students attend the morning session and twenty students attend the afternoon session. The students are transported to and from school by a small bus provided by the program.

Specific learning activities are planned for the children for each three-hour day. These learning activities can be generally classified into group activities (story telling, reading, painting, cutting, manipulative toys, playground activities, and the lunch period) and individualized or small group activities (Piaget-Early Childhood Curriculum, Project LIFE, Responsive Typing Booth, and the Peabody Language Development Kit).

Eating the noon meal with attendant language involvement is developed as a learning activity: therefore, all of the students are served a hot lunch. The morning group is served prior to leaving school, and the afternoon group is served immediately upon arrival for the afternoon session.

### In-Service Activities

The majority of the in-service activities of the program were considered as a part of the outreach activities (described later). Other types of in-service activities included: attendance at various workshops; enrollment in selected graduate/undergraduate courses at Eastern New Mexico University; formal and informal sessions with various consultants, including members of the external evaluation team; and regularly scheduled faculty meetings.

### Dissemination Activities

Activities which served as means to disseminate information concerning the program included: preparation of various brochures; newspaper releases; progress reports to the funding agency, central administration office and school board; site visitation by interested groups and individuals; various speaking engagements by director and faculty; and copies of the evaluation report were distributed throughout the state and nation including the Educational Resources Information Center (ERIC - Clearinghouse on Rural Education and Small Schools).

### Outreach Activities

Beginning with school year 1975-76, the outreach activities component was added to REEEP.\* The purpose of adding the outreach activities to the parent center was to give the program the capability of providing replication services to various local education agencies. A unique feature of this replication service is the capability of taking the training to the replication centers by a specially designed and equipped motor coach.

Three school districts, all in isolated areas and having a large number of target children and within a reasonable distance of the parent center, requested replication of all or part of the parent program during the 1975-76 school year. These school districts were: Fort Sumner, Artesia, and Carlsbad, all located in eastern New Mexico. In addition, replication by two

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\*The outreach activities of REEEP is funded by the Handicapped Children's Early Education Program, Bureau of Education for the Handicapped, U. S. Office of Education, Grant No. G00-75-00079.

other school districts had been made completing their third year of operation. This replication was made by the Clovis-Portales Bilingual Early Childhood Program (ESEA, Title VII) with a training site in both Clovis and Portales, New Mexico.

The outreach activities component is designed to have three major functions; advisory and training, diffusion, and evaluation.

The evaluation of the outreach activities also includes a follow-up study of former REPSAC students as they enter the mainstream of education (grades 1-6). The school year 1976-77 was the completion of the third year of this follow-up study.

## EVALUATION DESIGN

The design for the external evaluation during 1976-77 was based upon the program objectives as pertains to: student achievement (1.1-1.4); in-service training (2.1); and dissemination activities (3.1). Evaluation procedures for each of these objectives were as follows:

### Student Achievement

#### Evaluation Model

Objectives pertaining to student achievement were evaluated using the model as described in the report, Development of Data Collection and Analysis Procedures (New Mexico Title III, ESEA Advisory Council, May, 1976).

These data collection and analysis procedures involved the use of a special regression analysis model which can assist in determining the impact of selected program and personal variables on achievement of the program participants. The use of this type of model was necessary because of the non-availability of a comparison or control group. Also, this model provides an estimate concerning how the students would have performed if they had not received the treatment. This model can be depicted as:

$$Y^1 = X_1 + X_2 \dots X_n$$

Where:

$Y^1$  = measure of program objective

$X_1 \dots X_n$  = program and personal variables

The dependent variables, measures of the objectives pertaining to student achievement, were:

1. Language development in English as measured by the Peabody Picture Vocabulary Test (Dunn)
2. Language development in Spanish as measured by the Test for Auditory Comprehension of Language - Spanish (Carrow)

3. School readiness as measured by the Readiness Test for Disadvantaged Children (Walker)
4. Self concept and emotional development as measured by the Developmental Profiles (Bessell and Palomares)

A description of the tests is included as Appendix A.

The rationale for selecting the forementioned instruments were: (1) Each instrument has been previously used and determined by the project director, teacher, and evaluation team to be appropriate to measure the objectives pertaining to student achievement; and (2) Each instrument is standardized with appropriate normative data with the exception of the Developmental Profiles.

The independent variables used in this model were:

1. Pre-test scores
2. Time of instruction
3. Age
4. Birth Weight
5. Educational level of mother
6. Educational level of father
7. Sex
8. IQ
9. Family Size
10. Ethnic group
11. Family Status
12. Monthly income

#### Procedures and Time-Schedule for Collecting Data

The participants were tested before and after the treatment (instructional activities) and statistical significance was determined on the difference. (Exception was the Developmental Profiles).

Data to evaluate the self-concept was collected with the use of the Developmental Profiles. This instrument was completed for each student two times during the year by the teacher and teacher aide.

Dates for administering the pretests were September 7-10, 1976, and the posttests were administered February 10-15, 1977.\* The Developmental Profiles were completed during September and February.

#### Analytical Procedures

Program impact, as concerns student achievement, was determined by a regression analysis utilizing four dependent variables and twelve independent variables. The procedure allows for the regression of the independent

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\*Posttests were administered approximately 3 months earlier this year than in previous years because of a request from the New Mexico State Department of Education (Letter dated Jan. 18, 1977).

variables on the dependent variables for the purpose of determining which variables have the strongest influence on the learning outcome.

Data are presented in terms of means, standard deviations, correlations, intercorrelations, multiple correlations, and regression equations.

### On-Going Evaluation

In addition to the above stated measures (pre and posttest), there were on-going subjective evaluation procedures. This consisted mainly of site-visits by the evaluator so as to observe and become familiar with the daily operation of the program. Such observation was necessary so as to become familiar with the setting of the various measures.

### Variables Which Could Affect Student/Project Outcomes

There could have been some variables operating in the program during the 1976-77 school year which possibly could affect the student/project outcomes. Such variables were: age (especially the 3-year-olds), socio-economic background of the students, year in program, handicapping conditions (single and multiple), and learning environment in the home. Also, the early posttesting affected the mean gain scores.

The external evaluator recognized the possibility of such variables and took such into consideration during the evaluation process.

### In-Service Training

The in-service training was provided to approximately 50 teachers, aides, and administrators from various parts of New Mexico was a joint effort between this program and the outreach component (replication services) which is funded by the Bureau of Education for the Handicapped.

The major goal of this training is to assist selected teachers and aides to acquire certain knowledge and skills so as to be more effective while working with young, high risk, handicapped, and vulnerable children using the concept and processes of responsive environment.

The external evaluation (formative and summative) of the outreach component was also conducted by B. E. Askins and Associates. A summary of the evaluation of the in-service training is as follows:

### Research/Evaluation Questions

As an element of the evaluation of this training, the director and teachers who conducted the training posed several questions they wanted answered during/after the training which included:

1. What kind of rapport exists between personnel at the replication centers with the training staff?

2. Are the teachers being supported in their efforts by their administrators?
3. Do the teachers have adequate availability of professional materials in the areas of bilingual and early childhood education?
4. How effective was the teaching of the instructional units pertaining to the area of concept development in early education?
5. Are the teachers using the responsive environment concept in their teaching including flexible room arrangements and learning centers?
6. Do the teachers have a knowledge of handicapping conditions?
7. Do the teachers know how to screen children?
8. How effective were the training workshops conducted at the model center?
9. Are the teacher-aides effective in their role in the classroom?
10. Was the motor coach utilized effectively in the training program?

#### Procedures to Collect Data

A variety of measures was used to collect data to evaluate and answer the research questions pertaining to the effects of the training. These included: evaluation of the training workshops; classroom visits using a specifically designed classroom observation form, site-visits with administrators, teachers, and aides; self-evaluation reports from the trainees and trainers; a review of various types of records maintained by the training staff; and a reporting of test scores of student growth from two replication sites (Clovis and Portales).

Evaluation of Workshops. Various in-service training workshops were conducted during the 1976-77 school year for selected participants. Each workshop consisted of five days of training and was conducted at the model center. The workshops were evaluated using the McCallon Workshop Evaluation System. (See Appendix A for a description of this instrument).

Classroom Observation. Members of the evaluation team made periodic classroom visits of participating teachers (Kindergarten) to observe using a specifically designed classroom observation instrument. The form was designed to note such things as: availability of bilingual and early education materials; learning centers; use of the responsive environment concept; and evidence of long and short range instructional planning.



Site-Visits. Members of the evaluation team conducted periodic site-visits involving administrators, teachers, and aides so as to acquire their verbal reaction/responses to the training activities.

Self-Evaluation Reports. At the end of the year, another facet of evaluation was in the form of Self-Evaluation Reports so as to obtain:

1. Administrators' responses (strengths and weaknesses) to training activities.
2. Teachers' and aides' responses (strengths and weaknesses) to training activities.
3. Trainers; responses (strengths and weaknesses) to training activities.

#### Dissemination

Assistance in the evaluation of the objective pertaining to dissemination activities (3.1) was provided to the project director. Evaluation of this objective was primarily the assessment of the quality and quantity of the dissemination materials.

#### Summary of Evaluation Activities

A summary of the evaluation activities for 1976-77 is depicted on the following page. As previously stated, the dates for administering the posttests were changed from mid May to mid February. A description of the various tests referenced on the summary page can be found in Appendix A.

EVALUATION PLAN SUMMARY CHART

District: Clovis, New Mexico  
 Project: Responsive Environment Early Education Program  
 Evaluator: B. E. Askins & Associates  
 Date: 1976-77

OBJECTIVE	EVALUATION ACTIVITY	SAMPLE OR TARGET GROUP	INSTRUMENTATION		DATA COLLECTION		ANALYTICAL PROCEDURE
			INSTRUMENT*	DATE(S)	RESPONSIBILITY	DATE	
1. Student Achievement	1.1 Measure language development in English on pre and posttest basis.	100% of subject group (N=40)	PPVT(Form A) PPVT(Form B)		Evaluator	9/3/76 5/13/77	Regression analysis
	1.2 Measure language development in Spanish on pre and posttest basis.	100% of subject group (N=40)	TACL(Form A) TACL(Form A)		Evaluator Evaluator	9/3/76 5/13/77	Regression analysis
	1.3 Measure degree of school readiness on pre and posttest basis.	100% of subject group (N=40)	RTDC(Form A) RTDC(Form B)		Evaluator Evaluator	9/3/76 5/13/77	Regression analysis
	1.4 Evaluate self-concept and emotional development during 3 month intervals.	100% of subject group (N=40)	DP		Teacher/Evaluator	9/15/76 2/15/77 5/15/77	Statistical summary
2. In-service Training	2.1 Assess effects of in-service training sessions.	100% of teachers and aides (N=50)	WES Site-visits Written exams		Director/Evaluator	After each session & end of year	Statistical summary
3. Dissemination	3.1 Assess the quality & quantity of dissemination materials.	N/A.	Observations. Number of news releases. Number of professional articles. Quality of training films.		Director/Evaluator	End of year	Narrative summary

\*LEGEND

- PPVT= Peabody Picture Vocabulary Test (Dunn)
- TACL= Test for Auditory Comprehension of Language (Carrow)
- RTDC= Readiness Test for Disadvantaged Children (Walker)
- DP= Developmental Profiles (Bessel and Palomares)
- WES= Workshop Evaluation System (McCallon)

## EVALUATION DATA

The evaluation design primarily focused upon the program objectives as pertains to student achievement (1.1-1.4). The specific objectives and description of the evaluation design are presented in previous sections of this report.

### Number of Participants and Handicapping Conditions

#### Number of Participants

At the beginning of the school year, there were 40 students enrolled in REEEP (23 boys and 17 girls); 9 third-year students; 12 second-year students; and 19 initially started the program this year.

There were 12 students who withdrew during the year, and there were 12 other students who started the program during the year.

At the end of the year, there were 40 students enrolled (25 boys and 15 girls); 7 third-year students; 10 second-year students; and 23 first-year students. This data includes 3 sets of twins.

The pretesting phase included 39 students and the posttesting phase included 27 students. The number of students who were both pre and posttested was 27. The reason for N=27 was because of student withdrawals and new entries into the program.

#### Handicapping Conditions

Of the students enrolled at the end of the year, the following handicapping conditions were identified: 9 students were handicapped in general language ability; 2 students had speech handicaps; 4 students had physical handicaps; 3 students had emotional problems; and 10 students had various types of general ability (cognitive) handicapping conditions.

### Student Achievement

Objectives 1.1-1.3 were objectively measured with standardized tests using a pre and posttest design. The students were measured at the beginning of the school year (September 3, 1976) on the three areas. At the end of the year (February 10, 1977 for this year), the students were again measured in the same areas. Progress in each area was determined by the amount of gain accomplished between the pretest and posttest. In addition, gain scores were used to compare performance between first, second, and third-year students. Gain scores were also used to compare performance of the 4- and 5-year-olds participating in the program. All of differences were statistically treated using the  $t$ -test with significance being determined at the .05 level. In addition, a regression analysis was conducted to determine the impact of selected program and personal variables on posttest performance. Since a

control group was impossible with this project, the regression analysis technique was also used to make an estimate of performance of REEEP students if they had not participated in the program.

Objective 1.4 pertained to the assessment of self-concept and emotional development. The Developmental Profiles were completed by the teacher and aide twice during the year, September and February. Change/growth for each student was determined by averaging the two ratings for each period and plotting the results on a profile sheet. Group change was determined by taking an average of the individual ratings for each of the twelve areas measured.

### Language Development in English

Data analyzed from a pre and posttest analysis indicated that students participating in the program made significant gains in language development in English. The mean gain was 15.49 ( $p < .001$ ). This is compared to mean gain scores in 1975-76 (MG = 43.40,  $p < .001$ ), and in 1974 (MG = 46.40,  $p < .001$ ). It is assumed that the early posttesting in 1976-77, approximately 3 months, accounts for the lower mean gain in 1976-77.

When the data were analyzed by age and year in program, posttest performance was higher for older students and those participating in program longer. However, mean gains were higher for younger students.

Pre and posttest means and standard deviations are presented in Table 1. Comparisons by age and year in program are presented in Tables 2 and 3.

### Language Development in Spanish

Data analyzed from a pre and posttest analysis indicated that students participating in the program gained in Spanish language ability although the gains were not statistically significant. The mean gain of the participants was 18.21. This is compared to mean gain scores in 1975-76 (MG = 25.00,  $p < .001$ ) and in 1974-75 (MG = 31.12,  $p < .001$ ). It is assumed that the early posttesting in 1976-77, approximately 3 months, accounts for the lower mean gain scores in 1976-77.

When the data were analyzed by age and year in program, posttest performance was higher for older students and those participating in the program longer. However, mean gains were higher for younger students.

Pre and posttest means and standard deviations are presented in Table 1. Comparison by age and year in program are presented in Tables 3 and 4.

### School Readiness

Data analyzed from a pre and posttest analysis indicated that students participating in the program made significant gains in school readiness. The mean gain score of the students was 17.89 ( $p < .001$ ). This is compared to mean gain scores in 1975-76 (MG = 10.57,  $p < .001$ ) and in 1974-75 (MG = 16.13,  $p < .001$ ). It is interesting to note that the early posttest scores in this instance was higher than scores from the two previous years.

When data were analyzed by age and year in program, posttest performance was higher for older students and those participating in the program longer. However, mean gain scores were higher for younger students,

Comparisons by age and year in program are presented in Tables 2 and 3,

TABLE 1

## PRE AND POSTTEST PERFORMANCE OF REEEP STUDENTS

TEST/OBJECTIVE	N	MEANS	MEAN GAIN	s	t
PPVT/English	27	Pre 28.47	15.49	13.48	4.48*
	27	Post 43.96			
TACL/Spanish	27	Pre 32.45	18.21	19.92	1.99NS
	27	Post 50.66			
RTDC/Readiness	27	Pre 15.22	17.89	11.63	5.68*
	27	Post 33.11			

\*(p < .001)

TABLE 2

## AGE AND TEST PERFORMANCE OF REEEP STUDENTS

TEST/OBJECTIVE	AGE	N	MEAN GAIN
PPVT/English	4	12	15.68
	5	15	11.41
TACL/Spanish	4	12	20.16
	5	15	16.11
RTDC/Readiness	4	12	24.73
	5	15	15.81

TABLE 3

## YEAR IN PROGRAM AND TEST PERFORMANCE OF REEEP STUDENTS

TEST/OBJECTIVE	YP	N	MEAN GAIN
PPVT/English	1	9	19.41
	2	10	15.13
	3	8	9.63
TACL/Spanish	1	9	24.63
	2	10	20.18
	3	8	16.41
RTDC/Readiness	1	9	21.73
	2	10	18.43
	3	8	13.66

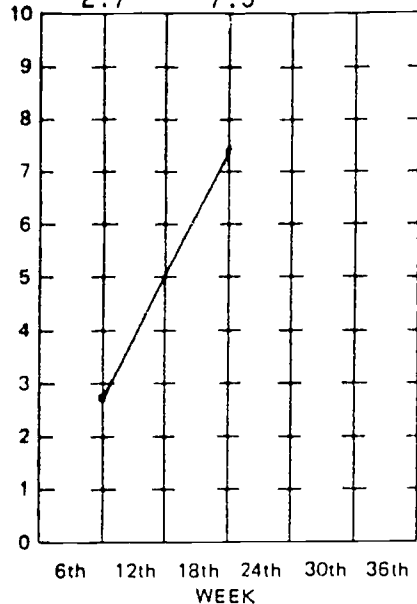
## Self Concept and Emotional Development

Objective 1.4 pertained to developing a positive concept and favorable emotional development. Data were gathered on this objective were obtained from subjective ratings at two time intervals by the teacher and aides. Means are presented for each scale. As indicated in Figure 1, students in the program indicated substantial progress in self-concept and emotional development.

### AWARENESS

(1) AWARENESS OF SELF

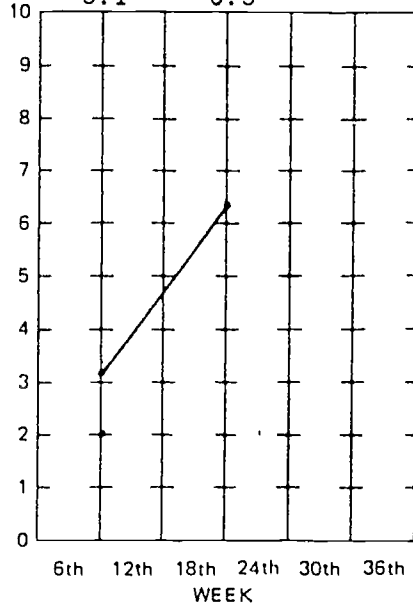
2.7      7.3



### MASTERY

(1) SELF CONFIDENCE

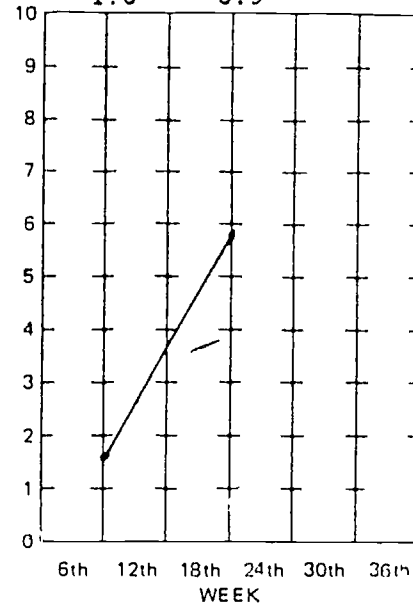
3.1      6.3



### SOCIAL INTERACTION

INTERPERSONAL  
(1) COMPREHENSION

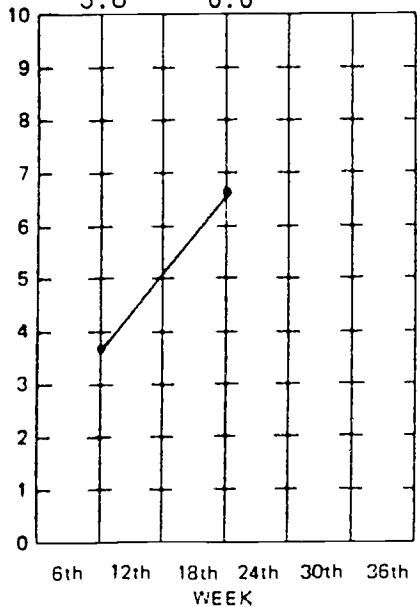
1.6      5.9



### AWARENESS

(2) SENSITIVITY TO OTHERS

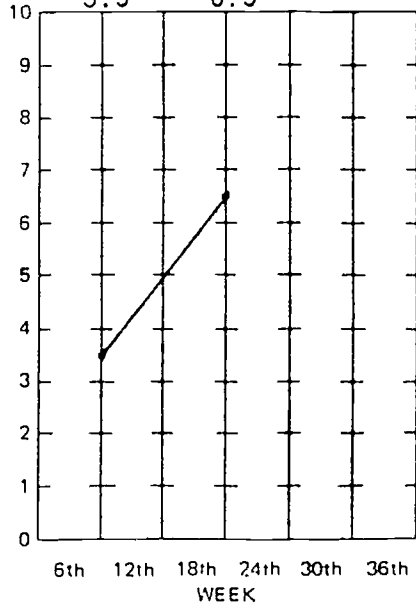
3.8      6.6



### MASTERY

(2) EFFECTIVENESS

3.5      6.5



### SOCIAL INTERACTION

(2) TOLERANCE

3.8      7.0

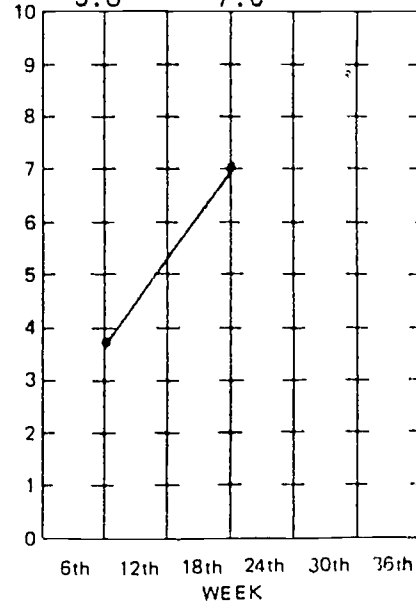


FIGURE 1 - PERSONAL DEVELOPMENT PROFILE FOR REEEP STUDENTS

## Regression Analysis

In addition to analyzing data for each objective, a regression analysis was conducted to determine the impact of selected program and personal variables on posttest performance. The correlations and intercorrelations are presented in Tables 4 and 5.

The variables which tended to contribute most to posttest performance are presented in the following paragraphs.

Language Development in English. The twelve variables in the analysis accounted for 91 per cent of the variance on the posttest. The variable making the greatest contribution was IQ accounting for 77 per cent of the variance.

Language Development in Spanish. The twelve variables in the analysis accounted for 76 per cent of the posttest variance. The three best predictors were pretest score, instructional time (morning or afternoon), and family income accounting for 66 per cent of the variance.

School Readiness. The twelve variables in the analysis accounted for 60 per cent of the variance of posttest performance. The two variables contributing most to posttest performance were IQ and family size.

Again, it should be pointed out that posttest data were gathered in February, three months before the end of school and the usual posttesting period. Three additional months in the program before posttesting would undoubtedly made some difference in the outcome of these findings.

TABLE 4

## CORRELATIONS BETWEEN PROGRAM AND PERSONAL VARIABLES AND POSTTEST PERFORMANCE

POST TEST	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>	X <sub>8</sub>	X <sub>9</sub>	X <sub>10</sub>	X <sub>11</sub>	X <sub>12</sub>
PEABODY ENGLISH	.44	-.04	-.08	.12	-.09	-.12	-.01	.88	.30	-.07	-.36	.09
CARROW SPANISH	.69	-.27	.49	-.38	-.22	.45	.03	.13	.40	-.55	.09	.43
WALKER SCHOOL READINESS	.43	-.03	-.11	.28	.01	-.05	.18	.61	.41	-.20	-.28	.03

X<sub>1</sub> = PretestX<sub>2</sub> = Time of InstructionX<sub>3</sub> = AgeX<sub>4</sub> = BirthweightX<sub>5</sub> = Mother's EducationX<sub>6</sub> = Father's EducationX<sub>7</sub> = SexX<sub>8</sub> = I.Q.X<sub>9</sub> = Family SizeX<sub>10</sub> = Ethnic StatusX<sub>11</sub> = Family StatusX<sub>12</sub> = Income



TABLE 5

## INTERCORRELATIONS BETWEEN PROGRAM AND PERSONAL VARIABLES

	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>	X <sub>8</sub>	X <sub>9</sub>	X <sub>10</sub>	X <sub>11</sub>	X <sub>12</sub>
X <sub>1</sub>	1.00	.11	.28	-.25	-.24	-.21	.02	.22	.51	.39	.07	.32
X <sub>2</sub>		1.00	-.26	.08	.04	.32	-.25	.01	.15	.30	.08	-.14
X <sub>3</sub>			1.00	.15	.33	-.60	.01	.39	.31	.22	.45	-.54
X <sub>4</sub>				1.00	.14	.06	.40	.31	.04	.35	.05	.40
X <sub>5</sub>					1.00	.60	.04	.13	-.19	.21	.25	.51
X <sub>6</sub>						1.00	.03	.10	.44	.24	-.40	.49
X <sub>7</sub>							1.00	.02	-.24	-.17	.32	.10
X <sub>8</sub>								1.00	.18	.01	-.52	.34
X <sub>9</sub>									1.00	-.17	.32	.10
X <sub>10</sub>										1.00	.10	.50
X <sub>11</sub>											1.00	-.47

18

1.00 28

### Estimate of Performance of REEEP Students If They Had Not Participated in the Program

Considerable data exist to support the notion that gains made by participants in any educational program are attributable to a variety of sources other than the educational treatment being rendered.<sup>1</sup> The most efficient way of controlling for sources of variation other than treatment variation is a randomized control group design. The next most efficient is a covariance design and the least efficient is a one-group design.

In situations, such as the evaluation of student achievement of students in REEEP, where pre and post data on only one-group are taken, the need exists to determine a way of estimating how well students would have performed if they had not received the treatment. In an effort to estimate performance in the absence of treatment, a regression analysis was employed with posttest performance in English, Spanish, and School Readiness as dependent variables and twelve personal and program variables as independent variables. These variables are identified in Table 4.

In essence, the procedure involved determining the percentage of posttest variation attributable to variables other than treatment, considering the standard error as the portion of uncontrolled variation, and considering the difference between these two known sources of variation and unity one as an estimate of the percentage of variation attributable to treatment. It follows, then, that the difference between attribute, extraneous, and error variation and unity one provides a rough estimate of the treatment impact; therefore, this index can be used to estimate how well participating students might have performed if they had not been involved in the treatment.

Using the results of the three regression analyses, the following information is provided.

#### English posttest performance

Non-treatment variation	= 91%
Error Variance	= 4%
Estimated treatment variation	= 5%

#### School Readiness posttest performance

Non-treatment variation	= 78%
Error Variance	= 4%
Estimated treatment variation	= 16%

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<sup>1</sup>See Campbell and Stanley, Experimental and Quasi Experimental Designs for Research, Chicato: Rand McNally, 1963.

### Spanish Posttest performance

Non-treatment variation	= 75%
Error variance	= 20%
Estimated treatment variation	= 5%

From these data, it can be noted that the majority of posttest variance on all three of the variables is attributable to non-treatment variation. It could be said, then, that if REEEP students had not had the treatment, post-test variation would have been basically the same.

It should be pointed out again that posttest data were gathered in February rather than at the end of the school year. These three additional months in the program before posttesting would undoubtedly make some difference in the outcome of these three regression analyses.

### Significance of Learner Change

The statistical test used to determine the significance of the learner change was the t-test. For language development in English, the resulting t value was 4.48 which was significant at the .001 level. For language development in Spanish, the resulting t value was 1.99 which was not significant. For school readiness, the resulting t value was 5.68 which was significant at the .001 level.

Within the limitations of a one-group, pretest posttest design, the following conclusions were drawn.

1. Students participating in REEEP made significant gains in language development in English (objective 1.1); therefore, it was concluded that this objective was achieved.
2. Students participating in REEEP made some gains in language development in Spanish (objective 1.2) but the gains were not significant; therefore, it was concluded that this objective was not achieved.
3. Students participating in REEEP made significant gains in school readiness (objective 1.3); therefore, it was concluded that this objective was achieved.
4. Students participating in REEEP showed positive and continuous growth in self-concept and emotional development (objective 1.4); therefore, it was concluded that this objective was achieved.

The regression analysis yielded information relating to the impact of selected variables accounting for the majority of posttest variance. These were: IQ for language development in English; pretest score, instructional time, and family income for language development in Spanish, and IQ and family size for school readiness.

### In-Service Training

Objective 2.1 pertained to the in-service training provided to approximately 50 teachers, aides, and administrators from various parts of New Mexico. This training was a joint effort between this program and the outreach component (replication services) which is funded by the Bureau of Education for the Handicapped. The REEEP facilities was the location of the training, and the REEEP teacher and aides served as demonstration teachers in conjunction with the outreach staff.

Six 5-day in-service training workshops, Early Childhood Education, were conducted with approximately 8 trainees in each workshop. Dates of the workshops were Oct. 11-15, Nov. 8-12, Dec. 6-10 (1976), January 24-28, Feb. 14-18, and March 7-11 (1977).

The purpose of each workshop was to provide training on the practical problems of organizing, planning, and implementing an effective preprimary program for children in New Mexico. Special emphasis was given to techniques for working with high risk, developmentally slow or disabled children. Activities included orientation, guided observation, participation, seminars, demonstrations, independent study, and techniques in the use of learning materials.

A total of 47 trainees attended the six workshops, and eight more are scheduled during the final workshop April 11-15, 1977.

Using the McCallon Workshop Evaluation System, the mean ratings on the seven criteria/dimensions of the Workshop Evaluation Scale for all of the workshops were well above average (6.62 - 6.74 on a 7.00 scale), and the mean rating of the Overall Effectiveness of the workshops was 6.72. The mean ratings of the seven evaluative criteria, standard scores, and percentile ranks are presented in Table 6. The standard scores and percentile ranks were computed from the mean ratings using the McCallon Manual.

TABLE 6

SUMMARY EVALUATION DATA FOR SIX WORKSHOPS*			
Criteria	Mean	Standard Score	Percentile Rank
Organization	6.74	118	90
Objectives	6.62	114	86
Consultants	6.70	112	83
Ideas/Activities	6.66	116	86
Scope	6.72	122	95
Benefit	6.66	120	90
Overall Effectiveness	6.72	114	90

\*N = 47

In addition, the narrative statements concerning the observations of the workshops were very positive with very few negative comments.

Based upon the results of these findings, it is obvious that the in-service training was extremely successful and effective. Participant reaction to the workshop goals/objectives was highly favorable and the vast majority of the personal comments indicated a high degree of satisfaction. In short, the training was effective and was conducted by qualified and extremely dedicated personnel to an appreciative group of people; therefore, it was concluded that objective 2.1 was achieved.

### Dissemination Activities

Objective 3.1 pertained to the quantity and quality of dissemination of information concerning the project. Information concerning the project during the 1976-77 school year was disseminated as described in the following paragraphs.

Progress reports were made available to the central administration office, school board, local area news media including nearby Cannon Air Force Base, the State Department of Education, and the U.S. Office of Education.

The project did accept the invitation and applied for a Title III validation (U.S. Office of Education) in February, 1977. If approved, the project will be nationally identified as a demonstration school for early childhood training.

Presentations concerning the project were made by the project director at Salt Lake City, Utah (Jan 77); San Diego, California (Feb 77); and at the annual meeting of the New Mexico Council for Exceptional Children, Eastern New Mexico University (Mar 77).

Papers were presented by the evaluator concerning the project at the annual meeting of the American Educational Research Association, New York City (Apr 77) and at the 1976 study conference of the Texas Association for Childhood Education (Nov 76).

Site visitations were made by many professional individuals and groups as well as parents. This also included visitations by students from the local high school (Home Economics Dept) as well as from the Employee-a-Teen Project (federal project in Clovis).

Copies of the 1975-76 end-of-year evaluation report were disseminated throughout the states of New Mexico and Texas. This report was accepted into the network of the Educational Resources Information Center (ERIC) in the Clearinghouse of Rural Education and Small Schools (See Bibliography 9). Also, it should be noted the end-of-year evaluation study of the project for each year since 1971-72 is now in the ERIC system (4, 5, 6, 7, and 9) and that a total of 6 articles pertaining to the project now appears in various professional journals (See Bibliography).

In addition to the above, much information concerning the project was disseminated by the outreach activities component as well as during the 6 in-service training workshops conducted during 1976-77.

Based on these data, observations, and interviews with various school personnel, it was concluded that the quality and quantity of disseminated materials were more than adequate. Therefore, it was concluded that the objective pertaining to the dissemination of information was achieved.

#### SUMMARY OF EVALUATIVE INFORMATION, CONCLUSIONS, AND RECOMMENDATIONS

This project was designed to serve as an educational intervention providing direct services to approximately 40 high risk (low birth weight-less than 5½ pounds) 3-, 4-, 5-year-old children, including the integration of handicapped children, living in the area served by the Clovis Municipal Schools. In addition, the project served as a base for training selected early childhood and kindergarten teachers and aides employed by various school districts of New Mexico.

The evaluation design for 1976-77 focused primarily upon the program objectives as pertains to student achievement. Also, the objectives pertaining to in-service training and dissemination of information were assessed.

#### Summary of Evaluative Information

The major findings of this 1976-77 evaluation study were:

1. Students participating in REEEP made significant gains in language development in English (objective 1.1) and school readiness (objective 1.3). When data for these two objectives were analyzed by age and year in program, posttest performance was higher for the older students and those participating in the program longer; however, mean gain scores were higher for the younger students.
2. Students participating in REEEP made some gains in language development in Spanish (objective 1.2); however, the gains were not statistically significant.
3. Students participating in REEEP showed a positive and continuous growth as concerns self-concept and emotional development.
4. The regression analysis data for the objectives pertaining to student achievement indicated that the variables which tended to contribute most to posttest performances were:
  - A. Language Development in English  
The variable making the greatest contribution was IQ accounting for 77% of the variance.
  - B. Language Development in Spanish  
The three best predictors were pretest scores, instructional time (morning or afternoon), and family income accounting for 66% of the variance.

### C. School Readiness

The two variables contributing most to posttest performance were IQ and family size.

The regression analysis data indicated that the majority of post-test variance on each of the three objectives is attributable to non-treatment variation; therefore if the REEEP students had not had the treatment, posttest variation would have been basically the same.

5. The external evaluation team found the REEEP students to be extremely friendly and cooperative, willing to try various books without fear of failure, and an unusually long attention span for this age and type of children.
6. The in-service training provided to the 47 teachers and aides was found to be extremely successful and effective.
7. The quantity and quality of the dissemination activities of the project were more than adequate.

### Conclusions

Based upon the findings of this study, the major conclusions were:

1. The objectives pertaining to language development in English (1.1) and school readiness (objective 1.3) were satisfactorily achieved; however, the objective pertaining to language development in Spanish was not achieved.
2. The objectives pertaining to in-service training (objective 2.1) and dissemination of project information (objective 3.1) were satisfactorily achieved.
3. The program is in an active and positive process of accomplishing the long range goals.
4. The project has the organization, curriculum, facilities, and a qualified and dedicated faculty/staff to provide the needed educational experiences for the target children; therefore, it was concluded that REEEP is serving as an effective educational intervention for the specified target children.

### Recommendations

Based upon the findings and conclusions of this study, the following suggestions or recommendations were made:

1. That the project continue to develop and serve as an early childhood intervention program and as a demonstration and replication model.
2. That more emphasis or time be placed upon the instructional activities designed for language development in Spanish.

3. That the evaluation design for the next school year include the regression analysis.
4. That posttesting be accomplished only at the end of the school year.
5. That the follow-up study of former REPSAC/REEEP students be made a part of the external program evaluation of REEEP beginning with the 1977-78 school year.



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## APPENDIX A

### DESCRIPTION OF INSTRUMENTS

A brief non-technical description of each of the test instruments is listed in the following paragraphs. Personnel interested in more detail concerning the tests are invited to consult technical data provided by the publishers of the tests or refer to the Mental Measurements Yearbook, Buros, editor.

#### Language Development

##### English

The Peabody Picture Vocabulary Test (Dunn) is designed to provide an estimate of a subject's "verbal intelligence" through measuring his hearing vocabulary. The test also has wide utility as a clinical tool. Besides being effective with average subjects, it has special value with certain other groups. Since subjects are not required to read and the responses can be non-oral, the test is especially fair to non-readers and remedial reading cases. With the drawings free of fine detail and figure-ground problems, the test is apparently appropriate for at least some perceptually impaired persons. According to the Test Manual, the scale is appropriate for subjects 2½ - 18 years who are able to hear words, see the drawings, and have the facility to indicate "yes" and "no" in a manner which communicates.

This standardized test is published by American Guidance Services, Inc., Circle Pines, Minnesota.

##### Spanish

The Test for Auditory Comprehension of Language (Carrow) measures the child's understanding of the Spanish language structure. The test is composed of 101 plates of pictorial referents. The child responds to each of the examiner's oral stimuli by pointing to one of three line drawings. Responses are recorded on a separate scoring/analysis form. The test is designed for individual administration by speech and testing specialists. Test results can also be used to diagnose the language competence of bilingual and mentally retarded children as well as those with hearing, articulation, or language disorders.

This standardized test is published by Learning Concepts, Inc., Austin, Texas.

#### School Readiness

The Readiness Test for Disadvantaged Pre-School Children (Walker) was adapted from the final report of a project conducted by Dr. Wanda

Walker, Northwest Missouri State College, and supported by the Office of Education. The test consists of multiple-choice items based on pictures and symbols which do not require reading ability and are designed to test a child's listening ability; visual ability; and his recognition of similarities, differences, numerical analogies, and missing parts.

This standardized test is available from ERIC Reproduction Service (ED 047 168), Bethesda, Maryland.

### Self Concept and Personality Development

The Developmental Profiles (Bessell and Palomares) is a subjective evaluation of children's behavior under a variety of circumstances. These rating scales are prepared periodically jointly by two teachers. The teachers make ratings on a printed form according to six affective areas: awareness of self; self-confidence; interpersonal comprehension; sensitivity to others; effectiveness; and tolerance. Because of the inherently subjective nature of these profiles, there is no objective scale of accomplishment or standard in terms of age-achievement scores. The profiles can provide a source of insight and understanding of emotional and personality development.

This instrument is published by the Human Development Training Institute, El Cajon, California.

### Workshop Evaluation

The Workshop Evaluation System (McCallon) provides a scientific approach to gathering and using participant feedback in the evaluation of conferences, workshops, conventions, and in-service training programs.

Participant responses are gathered on seven dimensions - organization, objective, work of the presenter, ideas and activities, scope, benefit, and overall effectiveness. The Workshop Evaluation System is unique in that it provides normative data collected from over 40,000 workshop participants. Participant feedback scores are compared against the norms to ensure reliable analysis and interpretation of workshop effectiveness.

This instrument is published by Learning Concepts, Inc., Austin, Texas.