

A COMPARISON OF THE PERFORMANCE SCORES OF  
NORMAL CHILDREN ON THE RECEPTIVE - EXPRESSIVE  
LANGUAGE ASSESSMENT FOR THE VISUALLY IMPAIRED  
AND THE PRESCHOOL LANGUAGE SCALE

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## ABSTRACT

### A COMPARISON OF THE PERFORMANCE SCORES OF NORMAL CHILDREN ON THE RECEPTIVE-EXPRESSIVE LANGUAGE ASSESSMENT FOR THE VISUALLY IMPAIRED AND THE PRESCHOOL LANGUAGE SCALE

By

Gloria M. Anderson

A number of developmental and language assessment instruments and techniques for children have been suggested since the 1960s. These tests have been used with normal children as well as with the handicapped. Specifically, the population of the visually handicapped has been found to be a heterogeneous group for whom it has been most difficult to design and standardize a language test. However, selected subtests of existing tests have been used when appropriate.

It was the purpose of this investigation to compare the performance scores of normal preschool children on the Receptive-Expressive Language Assessment for the Visually Impaired (RELA) and the Zimmerman Preschool Language Scale (PLS). The RELA is a proposed language assessment procedure specifically designed to measure the receptive and expressive language abilities of the visually handicapped

child. The Preschool Language Scale (Zimmerman, Evatt, & Steiner, 1969) is an evaluation instrument used to detect language strengths and deficiencies, primarily in normal children.

Subjects were ninety normal preschool children, aged three to five years. The Peabody Picture Vocabulary Test was administered as a screening device to document age-appropriate receptive language development. The subjects were tested individually by the same examiner. Standard test procedures were followed, and scoring was completed by the examiner. Six experimental questions were studied: (1) Is there a correlation between the performance scores of normal three, four and five year olds on the RELA and the PLS? (2) Is there a significant difference between RELA and PLS scores for normal three, four and five year olds? (3) Is there a correlation between the Auditory Comprehension scores on the PLS and the Receptive Language scores on the RELA for normal three, four and five year olds? (4) Is there a significant difference between the Receptive Language/Auditory Comprehension mean scores for normal three, four and five year old children? (5) Is there a correlation between the Verbal Ability scores and the PLS and the Expressive Language scores on the RELA for normal three, four and five year old children? (6) Is there a significant difference between the Expressive Language/Verbal Ability mean scores for normal three, four and five year old children?

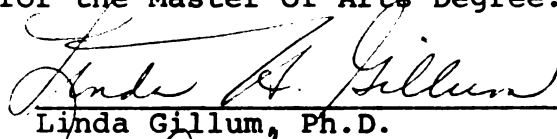
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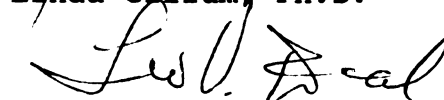
Results indicated a correlation between the RELA and PLS for the total population as well as the age subgroups. The two tests did result in a significant difference for the group as well as the three and four year old subgroups. However, there was no significant difference between the RELA and the PLS for the five year olds. In addition, the paired categories of Receptive/Auditory Comprehension and Expressive/Verbal Ability did correlate for the group as well as the subgroups. For the five year old subjects, the paired category of Receptive/Auditory Comprehension also did not differ significantly.


The results are discussed with reference to the literature of the visually handicapped (Lowenfeld, 1971; Withrow, 1969). Diagnostic implications for the use of the RELA were broad as they relate the use of such a measure for the normal population.

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## CHAPTER ONE

### INTRODUCTION

#### Review of the Literature

Many traditional assessment techniques for young children have appeared in the literature since the 1960s such as the Bayley Scales of Infant Development, (Bayley, 1969); Denver Developmental Screening Test, (Frankenburg & Dodds, 1967); Peabody Picture Vocabulary Test, (Dunn, 1965); Illinois Test of Psycholinguistic Abilities, (Kirk, McCarthy, & Kirk, 1968); and the Vineland Social Maturity Scale, (Doll, 1965). All of these tests have been used with normal children as well as with physically, visually, and otherwise health handicapped children.

In particular, the visually handicapped child traditionally has been a heterogeneous and difficult population for which to design and standardize specific testing measures (Hecht, 1975). Subtests of existing tests have been utilized when age appropriate and when the visual condition permits a measurement of motor development, communication, self-help skills, cognitive and adaptive behavior (Bell, 1975). The most widely used and accepted assessment for the visually handicapped child is the

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### Social Maturity Scale for Blind Preschool Children

(Maxfield & Buchholz, 1957). The Maxfield-Buchholz scale is an adaptation of the Vineland Social Maturity Scale which measures skills in the areas of self-help, locomotion, socialization and communication. The communication items of the Maxfield-Buchholz scale are the only existing evaluative measures designed and standardized specifically for the visually handicapped preschool population (Siegel & Broen, 1976). A description of these items can be found in Appendix A.

### Testing Considerations for the Visually Handicapped

The visually handicapped child and the sighted child develop speech and language similarly (Lowenfeld, 1971; Gallagher, 1975). However, the visually handicapped child differs from his sighted peer as a sensory deprivation alters his system for gathering information (Piaget, 1954; 1974; Haupt, 1964; Higgins, 1973; Rogow, 1975; Gallagher, 1975; Gotts, 1975; and Withrow, 1976).

The importance of language development as part of the total development of the visually handicapped child has been demonstrated in the literature (Wessell, 1964; Rogow, 1972; 1973; 1975). The apparent lack of an adequate assessment tool suggests the further exploration of language development in an assessment strategy for these children.

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Unlike the sighted baby, the blind infant displays few spontaneous facial movements or vocalizations and does not maintain eye contact (Lowenfeld, 1971). Lowenfeld further states that none of the cues by which a seeing baby initiates contact with the mother are evident in the blind at rest nor are they visually stimulated by objects in the environment. To grasp, to explore or to crawl toward any object is not usually done by this child unless the object makes a sound. Sound is the only clue to let the blind infant know that "things" exist in the environment (Lowenfeld, 1971).

Harley (1963) stressed that a blind child's reality is limited because of visual limitations. The other sensory modalities, such as haptic exploration and auditory awareness, must be fully developed in order for the blind child to attain realistic information about the world of objects from tactile data (Rogow, 1975). For example, it is known that the blind child learns to gauge distance (mapping) by direction and by variation in sound (Halliday, 1976). In the same manner, the child's ability to perceive and to conceive of the world are similar to learning to gauge distance, to organize his experiences and code them.

The communication of the blind child is limited until he is given the meanings necessary to comprehend relationships and make associations in a wide context of concrete, abstract and social meaning (Cutsforth, 1951;



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1966). Recently, the emphasis has been placed on the importance of the thoughts, underlying meanings, and intentions as being significant in the development of language (Brown, 1973), rather than its structure.

#### Normal Language Development of the Normal Child

Current researchers in normal child language acquisition, such as Bloom (1973), Brown (1973), and Cromer (1976), suggest that the child from infancy appears to be attempting to communicate meanings. Various aspects of normal language development have been studied with regard to situational cues, linguistic context, and parental interpretations to form some idea of what the child appears to be trying to communicate (Berko, 1958; Mecham, 1959; Brown, 1964; Menyuk, 1964). Brown (1973) specifically analyses the expression of meaning in his studies of three children. He found that in the earliest stage of language acquisition, language is not defined by age but by a mean utterance length.

Bloom (1970; 1973) presents language comprehension evidence which illustrates the usage of concept possession before the usage of grammatical inflection proper for its linguistic expression. It is from this study that Bloom presents her syntactic development of negation and the three basic types of negation: nonexistence, rejection, and denial.

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The acquisition of concepts of time affect the ability to express new meanings. As in Brown's study, Bloom illustrated that the acquisition of time concepts, showed several different types of cognitions appearing to emerge at about the same age. Cromer (1976) states that what is developing is not a number of separate ideas but rather a new structure of the mind or a new set of cognitive operations that allow the emergence of these concepts.

Piaget (1954; 1974) states that the child's perceptions, images, memories, and concepts are the data by which the young child uses experiences within the environment to construct a composite of reality. Language facilitates the expression of one's ideas and understanding those of others (O'Brien, 1976). Language is " . . . an instrument of thought based on the child's sensory schemes and actions" (Higgins, 1973). Piaget's theories are based on longitudinal, coherent developmental stages where each stage is a prerequisite for those which follow (Piaget, 1974).

According to Piaget, the child represents the world to himself through his interactions with the environment during the first eighteen months to two years of life. This stage is called the period of sensorimotor intelligence. The Piagetian view of language builds on the cognitive abilities which arise in the sensorimotor period. Between twelve and eighteen months, comprehension and receptive abilities, such as following simple directions

upon request, increases. The ability to label and express needs is used independently to control his environment (Bloom, 1976). As the child approaches the end of the sensorimotor stage, he realizes that he is an active person distinct from the objects he acts upon. This allows for a differentiation between himself and others resulting in the need for communication (Piaget, 1954; 1974).

By age three, most children have learned to combine words. Sentence construction ranges from agent--object to agent--action or action--object. When the child becomes competent in utilizing three word constructs, there follows a period of expansion with adjectives and adverbs (Bloom, 1973). Moving into the intuitive phase of the preoperational stage of development, the normal four and five year old child with normal hearing and vision has unlocked the meaning of language. Their world of reality is extensive, providing them with sufficient data to use past tense, to compare, to seek answers to questions, to classify, to comprehend relationships, to use number concepts, to be proficient at the sensorimotor stage and to begin to organize thoughts and experiences at the preoperational level (O'Brien, 1976; Bloom, 1976; Piaget, 1974).

#### Language Development of the Visually Handicapped

For the visually handicapped child to relate to experiences meaningfully, to comprehend, to interpret and

to respond (like the normal child), there are requisite skills necessary to interpret the experience within their linguistic system. Halliday (1976) has found that a visually handicapped child's development of expressive vocabulary depends on his ability in handling materials (haptic exploration), his ability to listen and attend to the environmental cues, and his ability to retain and attach information to objects or situations. Parnicky (1976) indicates that the early stimulation provided by parents to their blind children is of particular importance in the development of speech and language. He states that like all language developing infants, the visually handicapped children vocalize and imitate the speech patterns and the language of their parents. However, in comparison to the sighted children who can see as well as hear the environment, the parent of the visually handicapped must provide certain opportunities for their infant to associate the experience, object or action to the spoken symbol of language. This orientation to language minimizes the focus on structure, syntax and transformation and emphasizes language acquisition and cognition in relation to the variables of experience, stimulation and motivation (O'Brien, 1976).

No sensory modality is as complete as vision for richness in detail (Rogow, 1975). Neither the haptic nor the auditory modality becomes as dominant for the blind

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individual as vision is dominant for the sighted (Parnicky, 1976). Therefore, the blind or visually handicapped child needs, when possible, every experience to be in the richest form through sounds, smells, tastes and opportunities to touch and explore. If it is known that the blind child learns in the manner as suggested by Carolan (1973), Haupt (1964), Lowenfeld (1971), and Withrow (1976), should not the child be assessed in terms of what he/she brings cognitively and linguistically to the experience?

Anderson and Smith (1975) in an unpublished pilot study suggested that the visually handicapped child's language skills cannot be measured adequately by the conventional and accepted assessments of their sighted peers due to the reliance placed on visual cuing. The alteration of awareness by haptic experience, an accepted accommodation for the visually handicapped (Cutsforth, 1966; Gallagher, 1975; Haupt, 1964), should be used in assessment of language as an evaluative strategy.

#### Statement of the Problem

If the receptive and expressive language development of the visually handicapped is to be assessed accurately, a universal test which accommodates their sensory deficit is needed. A language scale for the visually handicapped, such as the RELA, modified from the PLS, an existing preschool language assessment, measures the sensory information, (e.g., haptic, auditory, olfactory, and



gustatory) assimilated by the child. and may give a more accurate assessment of his/her language skills.

It is the purpose of this study to examine the correlation between the scores attained on the Preschool Language Scale (Zimmerman, Steiner & Evatt, 1969) and the Receptive-Expressive Language Assessment for the Visually Impaired of normal, sighted children, ages three, four and five years. Both the Preschool Language Scale and the Receptive-Expressive Language Assessment are diagnostic instruments designed to evaluate the verbal and expressive language skills of children; however, the latter is specifically designed for the visually handicapped child. The following questions are posed to consider the correlation between the language measures of the Preschool Language Scale and the Receptive-Expressive Language Assessment for the Visually Impaired:

1. Is there a correlation between the performance scores of normal three, four and five year olds on the RELA and the PLS?
2. Is there a significant difference between RELA and PLS scores for normal three, four and five year olds?
3. Is there a correlation between the Auditory Comprehension scores on the PLS and the Receptive Language scores on the RELA for normal three, four and five year olds?
4. Is there a significant difference between the Receptive Language/Auditory Comprehension mean scores for normal three, four and five year old children?
5. Is there a correlation between the Verbal Ability scores on the PLS and the Expressive Language

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scores on the RELA for normal three, four and five year old children?

6. Is there a significant difference between the Expressive Language/Verbal Ability mean scores for normal three, four and five year old children?

The following null hypotheses were to be examined

in this study:

1. There is no correlation between the performance scores of normal three, four and five year old children on the RELA and the PLS.
2. There is no significant difference between the RELA and PLS scores for normal three, four and five year old children.
3. There is no correlation between the Auditory Comprehension scores on the PLS and the Receptive Language scores on the RELA for normal three, four and five year old children.
4. There is no significant difference between the Receptive Language/Auditory Comprehension mean scores for normal three, four and five year old children.
5. There is no correlation between the Verbal Ability scores on the PLS and the Expressive Language scores on the RELA for normal three, four and five year old children.
6. There is no significant difference between the Expressive Language/Verbal Ability mean scores for normal three, four and five year old children.

## CHAPTER TWO

### EXPERIMENTAL PROCEDURES

#### Subjects

Ninety preschool children served as subjects in this investigation. They were distributed thirty to a group of three year olds (mean age 3-5), four year olds (mean age 4-6), and five year olds (mean age 5-5). The subjects were enrolled in various preschool programs in Lansing, Michigan. The children were reported to have normal hearing and vision with no known handicapping conditions as determined by preschool teachers and records. The Peabody Picture Vocabulary Test was used to determine age-appropriate receptive language development.

#### Test Materials

Test materials for this investigation included the Peabody Picture Vocabulary Test (Dunn, 1965), Preschool Language Scale (Zimmerman, Steiner & Evatt, 1969), and the Receptive-Expressive Language Assessment for the Visually Impaired (Anderson & Smith, 1975). The Preschool Language Scale evaluates auditory comprehension and verbal ability within the construct of normal language development. The scale consists of a series of age-graded auditory

comprehension and verbal language tasks. The task items were given an age placement on the basis of age levels suggested by previously recognized developmental scales (Zimmerman et al., 1969). There were forty items with four tasks at each level for both test sections which are distributed equally across the ten age levels (from eighteen months to seven years). These items are outlined in Appendix B. The Preschool Language Scale consists of the following materials:

- 1 Preschool Language Scale Manual
- 1 Preschool Language Scale Picture Book
- 12 One-inch colored blocks
- 1 Small piece of coarse sandpaper
- 1 Set of coins; quarter, dime, nickel, penny
- 1 Watch with sweep second hand

The Receptive-Expressive Language Assessment for the Visually Impaired is a scale designed to evaluate the receptive (auditory comprehension) and expressive (verbal ability) language of the visually handicapped child. The Receptive-Expressive Language Assessment was modeled after and follows a similar to that design of the Preschool Language Scale with accommodations in the test stimuli to replace visual cues.

There were seventy-two receptive scale items and eighty-eight expressive items distributed across six age levels (from infancy to five years). These items are outlined in Appendix C. The Receptive-Expressive Language Assessment consists of the following materials:

- 1 Manual for administration of the Receptive-Expressive Language Assessment for the Visually Impaired (Experimental Form I)
- 1 Protocol booklet (Experimental Form III)
- 1 Test Kit (Experimental Form II)

### Procedure

In the initial session of approximately ten minutes, each child was administered the Peabody Picture Vocabulary Test to determine age-appropriate receptive language. If the child's mental age and receptive language age, as measured by the Peabody Picture Vocabulary Test, was within normal limits, the child was accepted for testing.

During the second session, approximately thirty minutes in length, the Preschool Language Scale and the Receptive-Expressive Language Assessment were introduced and administered. A description of these test items may be found in Appendix B and C. The RELA was designed to measure language age performance from Level 1, a pre-syntactic language stage, to Level 6, which corresponds with the developmental age of six years. The PLS measures language age performance from ages one and one-half years to seven years. The RELA and the PLS were administered following all standard instructions. To allow for performance score comparisons, subjects were administered the age seven items on the PLS. However, Auditory Comprehension, Verbal Ability and Language Age were computed at the six year level and month credits beyond that level were

not considered for this study. This was done in order to relate the RELA and PLS scores within corresponding ranges. All of the testing and scoring was carried out by a single examiner to minimize tester variability. At each nursery setting, a quiet designated area was made available for testing, and each subject was assessed individually. The child was seated at a table across from the examiner. There was no prompting or cuing for unfamiliar scale items nor were observers present during the sessions. Verbal and social reinforcement such as . . . "good listening. I like how you are listening and telling me about . . . " was used throughout the testing intermittently and when appropriate.

#### Analysis of the Data

Standard scoring procedures for the PLS and the RELA were followed. Language age (in months) scores were obtained in six test categories: PLS Auditory Comprehension, PLS Verbal Ability, PLS Language Age, RELA Receptive, RELA Expressive, and RELA Language Age in each of the three subject test groups. Raw scores for three, four and five year old subjects may be found in Appendix E. The language scores were compared using Pearson's Correlation Coefficient. RELA Receptive/PLS Auditory Comprehension; RELA Expressive/PLS Verbal Ability; and RELA Language Age/PLS Language Age scores were paired in this correlation for all ninety subjects as a group. These

paired scores were also correlated using language age scores of each of the three test age groups. Twelve correlation coefficients were derived.

Mean language scores were obtained in the six test categories. Mean scores were paired as in the Pearson's correlation for all ninety subjects as a group. These paired scores were also analyzed using mean language scores of each of the three test age groups. The resulting data was analyzed using a two tailed 't' test to determine the level of significant difference between these mean scores. Twelve 't' values were derived to be considered significant at the .001 level.

Each subject's chronological age was compared to their language age score in the six test categories using Pearson's Correlation Coefficient. Finally, a one way analysis of variance was computed from the data to determine the significant difference between test group levels for all six categories. Duncan's Multiple Range test  $p = .05$  level provided tabular values for 'F' test ratios.



## CHAPTER THREE

### RESULTS

The results of this investigation will be discussed in four sections. In the first section, correlation of the paired language scores will be examined for group subject results and for each of the three subject age groups. Results are discussed with respect to hypotheses (1), (3), and (5). In the second section, significant differences between the paired mean language age scores will be examined for group subject results and for each of the three subject age groups. Results are with respect to hypotheses (2), (4), and (6). In section three, correlation of the language age scores with the chronological age of the total subject group and the three subject age groups will be examined. Finally, in section four, subject test group differences will be discussed with respect to the six language age test categories. The raw data for the present experiment are found in Appendix E.

#### Performance Score Correlation on RELA and PLS

The six language test categories--Receptive, Expressive, and Language Age from the RELA and Auditory

Comprehension, Verbal Ability, Language Age from the PLS--were paired to examine between test correlation for the subjects as a group and specifically in each of the three subject age groups. Correlations for 'r' values may be found in Table 1. Each is significant for p at the .001 level ( $r = .3414$ ,  $df = 88$ ). Such levels of significance indicate support for the hypothesis that there is a high degree of relatedness in the performance scores of normal three, four and five year old children on the RELA and PLS Language Age categories. Significant 'r' values also indicate support for the hypotheses that there is a high degree of relatedness between paired test categories Receptive/Auditory Comprehension and Expressive/Verbal languages ages. The RELA and the PLS then appear to be related in measuring language development.

Performance Score Significance  
Between RELA and PLS

The six language test categories: Receptive, Expressive, Language Age from the RELA and Auditory Comprehension, Verbal Ability, Language Age from the PLS--were also paired to examine whether differences in scores between tests for the subjects as a group and specifically between subjects in each of the three test age groups were significant. Mean subject scores and the standard deviations from the mean for the group may be found in Tables 2, 3, 4 and 5. Using this data, "t" values were

Table 1.--Pearson's Correlation Coefficients for Performance Scores on the  
Receptive-Expressive Language Assessment and the Preschool Language  
Scale.

Subjects	Receptive/ Auditory Comprehension	Expressive/ Verbal Ability	RELA/PLS Language Age/Language Age
p = .001	'r'	'r'	'r'
Group N = 90*	.8233	.8566	.8660
Age Three N = 30**	.6189	.7147	.6923
Age Four N = 30**	.5667	.6880	.7296
Age Five N = 30**	.4705	.8184	.8274

\*r = .3414

\*\*r = .5714

Table 2.--Mean Scores and Standard Deviation Distribution for the Preschool Language Scale and the Receptive-Expressive Language Assessment for Subjects as a Group, N = 90.

	Mean	Deviation
RELA Receptive	63.5	10.7
RELA Expressive	63.8	9.3
RELA Language Age	63.9	9.7
PLS Auditory Comprehension	59.8	12.0
PLS Verbal Ability	58.5	12.1
PLS Language Age	59.4	11.8

Table 3.--Mean Scores and Standard Deviation Distribution for the Preschool Language Scale and the Receptive-Expressive Language Assessment for Three Year Old Subjects, N = 30.

	Mean	Deviation
RELA Receptive	52.5	11.5
RELA Expressive	54.6	10.1
RELA Language Age	53.8	10.3
PLS Auditory Comprehension	47.0	10.2
PLS Verbal Ability	45.3	8.6
PLS Language Age	46.4	9.2

Table 4.--Mean Scores and Standard Deviation Distribution  
for the Preschool Language Scale and the  
Receptive-Expressive Language Assessment for  
Four Year Old Subjects, N = 30.

	Mean	Deviation
RELA Receptive	67.2	4.5
RELA Expressive	66.6	4.2
RELA Language Age	67.3	4.0
PLS Auditory Comprehension	62.7	7.0
PLS Verbal Ability	61.6	7.5
PLS Language Age	62.4	6.6

Table 5.--Mean Scores and Standard Deviation Distribution  
for the Preschool Language Scale and the  
Receptive-Expressive Language Assessment for  
Five Year Old Subjects, N = 30.

	Mean	Deviation
RELA Receptive	71.0	1.3
RELA Expressive	70.4	2.1
RELA Language Age	70.7	1.4
PLS Auditory Comprehension	69.8	3.4
PLS Verbal Ability	68.7	4.7
PLS Language Age	69.3	3.8

computed. These values are presented in Table 6. 't' values for the group in all paired categories are significant at  $p = .001$  level. 't' values in the three year old Receptive/Auditory Comprehension category are significant at the  $p = .01$  level and significant at the  $p = .001$  level for the remaining two categories. 't' values for four year old subjects are significant at  $p = .001$  level for each paired category, while 't' values for five year old subjects are not significant for Receptive/Auditory Comprehension or Language Age/Language Age paired categories. However, 't' value for Expressive/Verbal Ability is significant at  $p = .01$  level for five year olds. Such levels of significance indicate support for the hypothesis that scores on the RELA are significantly different from scores on the PLS for the group. Three and four year old scores on the paired categories are also significantly different between the RELA and PLS. However, five year old scores are generally not significantly different thus not rejecting the null hypothesis. Given the direction of the raw scores on each test category (see Appendix E), normal three and four year olds score significantly higher on the RELA than on the PLS whereas normal five year old's RELA scores are not increased significantly over PLS scores.

#### Performance Score Correlation with Chronological Age

Each test subject's age was computed and correlated with his/her language age on each of the six test

Table 6.--'t' Values for Paired Mean Scores on the Preschool Language Scale and the Receptive-Expressive Language Assessment.

Subjects	Receptive/ Auditory Comprehension	Expressive/ Verbal Ability	RELA/PLS Language Age/Language Age
p = .001	't'	't'	't'
Group N = 90	5.12	7.98	7.28
Age Three N = 30	3.16*	7.02	5.27
Age Four N = 30	4.24	4.89	5.75
Age Five N = 30	2.01**	2.95*	2.71**

\*p = .01, t = 3.460

\*\*Not significant

categories. These 'r' values for the group of subjects may be found in Table 7. Each 'r' value is displayed at its specific significance level ( $r = .3568$ ). This indicates that subject scores follow a developmental progression increasing from three to four to five year olds with a proportionate increase in the age appropriate language score. Taken by individual ages, however, the disparity between chronological age and language age score is more striking. For three year olds, PLS category scores are closely related to chronological age at the p levels indicated. Three year old scores on the RELA categories do not appear to highly relate chronological age to language age. For four year olds in all six test categories, chronological age is related to language age but not at highly predictable p levels on either the PLS or RELA test categories. For five year olds in all six test categories, chronological age is related to language age. Since individual subject age group scores are distributed in developmental progression, the Group 'r' coefficient thus shows a correlation between chronological age and test category language age scores. A hypothesis for this disparity will be discussed.

#### Significance of Performance Scores Between Subject Groups

The above results suggest that normal three, four and five year old language scores on the PLS categories correlate with and differ from normal three, four and five



Table 7.--Pearson's Correlation Coefficients for Chronological Age in Months with  
 Language Scores on the Preschool Language Scale and the Receptive-  
 Expressive Language Assessment for Subjects as a Group, N = 90.

RELA Receptive	RELA Expressive	RELA Language Age	PLS Auditory Comprehension	PLS Verbal Ability	PLS Language Age
'r'	'r'	'r'	'r'	'r'	'r'
p = .001 .7055	p = .001 .7083	p = .001 .7167	p = .001 .8065	p = .001 .8213	p = .001 .8235

r = .3568

year old paired categories on the RELA. Table 8 shows the data used to compute a one way analysis of variance to determine significant difference between the subject population age groups. 'f' ratios are shown to be significant at an 'f' probability of  $p = .000$ . Three year old scores differed significantly from four year old scores which differ significantly from five year old scores in all six test categories. A Duncan Multiple range post hoc test ( $p = .05$  level) was applied to the means to identify age groups that might differ significantly from all other groups. Results showed that no age group differed more significantly from the others at the  $p = .05$  level. This may be a result of individual variation rather than age.

Table 8.--One Way Analysis of Variance for Preschool Language Scale and Receptive-Expressive Language Assessment.

Variables*	s	df	Sum of Squares	Mean Squares	'f' ratio	'f' prob.
PLSAC by Age Year	Between Grps. Within Grps.	2 87	8181.6667 4806.7333	4090.8333 55.2498	74.042	.000
PLSVA by Age Year	Between Grps. Within Grps.	2 87	8610.1556 4458.1667	4305.0778 51.2433	84.013	.000
PLSLA by Age Year	Between Grps. Within Grps.	2 87	8312.2667 4191.3333	4156.1333 48.1762	86.269	.000
RELAREC by Age Year	Between Grps. Within Grps.	2 87	5683.6222 4530.1667	2841.8111 52.0709	54.576	.000
RELAEXP by Age Year	Between Grps. Within Grps.	2 87	4093.8889 3629.7667	2046.9444 41.7215	49.062	.000
RELALA by Age Year	Between Grps. Within Grps.	2 87	4760.4667 3672.4333	2380.2333 42.2119	56.388	.000

\*AC - Auditory Comprehension

VA - Verbal Ability

LA - Language Age

REC - Receptive

EXP - Expressive

LA - Language Age

f = 99.5

## CHAPTER FOUR

### DISCUSSION

#### General Discussion

The purpose of this investigation was to compare the performance scores of normal preschool children on the Receptive-Expressive Language Assessment for the Visually Impaired and the Preschool Language Scale to determine whether the RELA, a modified language scale from the PLS, correlated with the PLS. The following questions were suggested for investigation:

1. Is there a correlation between the performance scores of normal three, four and five year old children on the RELA and the PLS?
2. Is there a significant difference between RELA and PLS scores for normal three, four and five year olds?
3. Is there a correlation between Auditory Comprehension scores on the PLS and the Receptive language scores on the RELA for normal three, four and five year olds?
4. Is there a significant difference between the Receptive/Auditory Comprehension mean scores for normal three, four and five year olds?
5. Is there a correlation between the Verbal Ability scores on the PLS and the Expressive language scores on the RELA for normal three, four and five year old children?

6. Is there a significant difference between the Expressive/Verbal Ability mean scores for normal three, four and five year old children?

The results of this study support the hypotheses stated. The results indicated a high correlation between the performance scores of normal three, four and five year olds on the RELA and the PLS. This suggests that as a group and within subgroups, normal children generally performed on both tests in an age-predictable manner. The RELA seems to be a valid adaptation of the PLS measuring similar language skills. RELA raw scores were significantly higher for group scores and for three and four year old subgroups, but not for the five year old subgroup. The findings of this study indicate that five year olds perform the same on both tests in all areas. The distribution of performance scores with respect to chronological age for the group (n = 90) and within the subgroups is a linear progression as would be expected with regard for normal language development. The three year old subjects perform more within their expected developmental age range demonstrating few four year old language skills, whereas scores for the four year old subjects extend widely across all test categories. The five year old group was highly concentrated within the expected sixty to seventy-one month age range. Between the test categories--Expressive/Verbal Ability, and Receptive/Auditory Comprehension--scores correlated for group and subgroup performance.

There was a significant difference between these test categories for the group as well as three and four year old subjects. The five year old subjects did not demonstrate a significant difference for the Receptive/Auditory Comprehension paired category nor for the Language Age/ Language Age paired category. Five year old differences were significant only for the Expressive/Verbal Ability category at the  $p = .01$  level.

#### The RELA and PLS as Test Strategies for Normal Children

Both the RELA and the PLS follow a normal sequential development of language in the test items. Performance scores, then, on both tests are distributed in a progressive linear manner from three to four to five year old age groups. The PLS collapses the third dimension into pictorial representations, whereas the RELA is three dimensional throughout the test design. The presentation differences between the two test's items may cause a discrepancy between the chronological age of the subjects and their language scores.

The three year old subjects were able to manipulate the materials and score higher on the RELA. At this age level, this may be the result of the fact that this population is still more psychomotor and sensorimotor oriented even though they are in a preoperational stage of development according to Piaget (1974). Their cognitive ability

is not as complex as that of four or five year olds. Even though the three year old subjects scored on the PLS as their chronological age would suggest, they scored significantly higher on the RELA. This difference in scoring between the testing instruments may reflect the quality of materials, availability to manipulate, more sensory information, (haptic, olfactory, gustatory, auditory, visual) and the difference in which the materials are presented. It is shown by the 'r' values (Table 1) that scoring high on the PLS items found correspondingly high scores on items of the RELA. However, the significance of higher scores on the RELA within this study may be directly related to the manner of item presentation. This is possibly one explanation for the finding that chronological age does not correlate with language ages in the test categories. While group scores give some predictability, these differences may also be related to the homogeneity of the groups and the effects of the preschool language experience.

The current emphasis on the development of listening and verbal skills as well as problem solving skills seems to provide the four year old children with skills not necessarily possessed by the majority of four year old children when the PLS was designed (1969). This trend of early pre-academic training seems to be extending the level of performance in the broad area of language more rapidly than the PLS is designed to measure.

The four year old subject skills extend from the thirty-sixth to the seventy-first month range. This illustrates their developmental period where it is sometimes necessary to deal with the sensory input in order to problem solve. The five year olds as a group, as indicated by Piaget (1974), are at a developmentally higher level of the pre-operational stage where sensory integration has taken place and more complex cognition affects their performance. The additional sensory information for this subgroup on the RELA test items is not needed to process information accurately. The additional sensory information is secondary now in importance to the acquired cognitive skills. Hence, the RELA may not be as advantageous as an evaluation scale for this age group as for the other less sensory integrated subgroups.

#### The RELA as a Test Strategy for the Visually Handicapped

The RELA may be able to evaluate the language development of the visually handicapped utilizing the alteration of visual test items. Based on the reality of the item presentation, language skills are measured whether elicited by two dimensional visual cues or the three dimensional object relationships. The results of this study with normal preschool children suggest that language of the visually handicapped may not only be measured using the RELA; but if they were able to perform the visual type



items of the PLS, their scores would not only be related but would also reflect the same acquisition of language development skills. Further study on the RELA may show it to be a useful test for the visually handicapped population.

One consideration for the visually handicapped child prior to testing is the involvement that the child has had with the environment. If the child has not had the vast experiences as suggested by Parnicky (1976) as language learning takes place, the RELA may indicate areas in which language developmental delay may occur. The RELA would indicate the child's cognitive and linguistic skills as compared to his sighted peers but also indicate areas that need attention in order for further language development to take place. Not to recognize objects, sounds, smells or tastes in the environment presents crucial clinical implications with regard to the development of more complex cognitive skills. The RELA seems to provide the visually handicapped with the use of other sensory opportunities to process information during the testing procedure even though none of these are as rich as the visual (Rogow, 1975). When a visually handicapped child does not utilize modes of haptic, olfactory, gustatory or auditory exploration or awareness, this can indicate the lack of opportunities the child has had. Possibly, processing is done by parents; therefore, a reliance on others is established. If normal children progress through stages

and if it is known that the visually handicapped develop as their sighted peers, then the implications to skip stages because of a dependence on significant others has a direct relationship towards the further development of abstract reasoning and problem solving skills. Successful completion/acquisition of higher cognitive skills at the operational level are requisite on the development of sensorimotor, psychomotor and pre-operational skills.

Based on the findings of this study, the RELA can be used as an evaluative instrument to determine the language development of normal preschool children and may also be used as a diagnostic instrument to indicate areas which need further remediation. Due to the maximum opportunity to manipulate the test materials, normal preschool children may perform more closely to their true language age. Further research may show that the RELA may be used to compare the language development of the visually handicapped with that of their sighted peers.

## CHAPTER FIVE

### SUMMARY AND CONCLUSIONS

It was the purpose of this investigation to compare the performance scores attained on the RELA and the PLS of normal, sighted children ages three, four and five years. The RELA is a proposed language assessment tool specifically designed to measure the receptive and expressive language abilities of a visually handicapped population. The Preschool Language Scale (Zimmerman, Evatt, Steiner, 1969) is an evaluation instrument used to detect language strengths and deficiencies in primarily normal children. Subjects were ninety normal children, aged 3-0 to 5-11 years, with no known handicapping conditions. All subjects were administered the Peabody Picture Vocabulary Test as a screening device to document age appropriate receptive language development. The Receptive-Expressive Language Assessment for the Visually Impaired and the Preschool Language Scale were also administered to the test population. Six experimental questions were asked:

1. Is there a correlation between the performance scores of normal three, four and five year olds on the RELA and the PLS?

2. Is there a significant difference between RELA and PLS scores for normal three, four and five year olds?
3. Is there a correlation between the Auditory Comprehension scores on the PLS and the Receptive Language scores on the RELA for normal three, four and five year olds?
4. Is there a significant difference between the Receptive Language/Auditory Comprehension mean scores for normal three, four and five year old children?
5. Is there a correlation between the Verbal Ability scores on the PLS and the Expressive Language scores on the RELA for normal three, four and five year old children?
6. Is there a significant difference between the Expressive Language/Verbal Ability mean scores for normal three, four and five year old children?

The salient results of this investigation may be summarized as follows:

1. There is a correlation between the RELA and PLS language performance scores for normal three, four and five year old children as a group and within specific age groups.
2. A significant difference between the performance of normal three and four year olds was evidenced between the RELA and PLS.
3. Normal five year old children did not perform significantly different between the RELA and PLS though their scores did correlate.
4. The paired categories of Receptive/Auditory Comprehension correlated for group as well as subgroup language scores.
5. There was a significant difference between the Receptive/Auditory Comprehension mean scores for normal three and four year olds but not for five year old children.
6. The paired categories of Expressive/Verbal Ability correlated for group as well as subgroup language scores.

7. There was a significant difference between Expressive/Verbal Ability mean scores for the group and normal three, four and five year old children.
8. Language age scores on the RELA and PLS correlated for the group, three, four and five year old children.
9. The Language Age paired categories were significant for the group, three and four year olds but not for five year olds.
10. Chronological age correlation with Language age results correlated only for group test situations.

The results of this investigation are in general agreement with previous literature, in as much as accommodation is an acceptable procedure when dealing with the visually handicapped population. Where developmentally age and skill appropriate the additional sensory information contributed to the performance scores. At the higher level of development, the additional sensory information did not affect the performance.

The following conclusions appear warranted:

1. The RELA as a modified language scale measures language development of preschool children.
2. The accommodations that are part of the RELA design do not appear to interfere with the correlation of the RELA and the PLS.
3. Children who are developmentally at a lower level within the pre-operational stage of development score higher on the RELA than on the PLS utilizing the additional sensory input.
4. A developmental distribution of scores was followed on both the PLS and RELA for this experimental group. The significant differences between groups was uniform.

### Implications for Further Research

In the past, there has not been available a comprehensive test to evaluate the language of the visually handicapped preschool population. This low incidence population has recently received attention within the literature as requiring sensory accommodation. This concept was the basis of the development of the Receptive-Expressive Language Assessment by Anderson & Smith (1975). This study is the first examination of the RELA with respect to an existing language scale. Normal children's performance scores were compared in order to determine the validity of the RELA as a language measure. The results appear to indicate that the RELA measures language, receptive and expressive, with a high degree of accuracy for normal children. There is a need for further research to determine the use of this instrument with the visually handicapped. Additional research is also indicated in comparing visually handicapped scores on the RELA with an age matched population of sighted children on the PLS.

## **APPENDICES**

## **APPENDIX A**

### **MAXFIELD-BUCHHOLZ COMMUNICATION ITEMS**



## APPENDIX A

### MAXFIELD-BUCHHOLZ COMMUNICATION ITEMS

Description of the Communication Items on the Social  
Maturity Scale for Blind Preschool Children: Maxfield-  
Buchholz Scale.

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#### Year 0 - I

- (16)\* Inhibits simple acts upon familiar commands
  - (15) "Talks," imitates speech patterns
- 

#### Year I - II

- (23) Makes positive response to simple command or request
  - (32) Says two or more words which have definite meaning for the child
  - (37) Indicates needs or desires
- 

#### Year II - III

- (44) Uses names of familiar objects
  - (51) Talks in short sentences
- 

#### Year III - IV

- (61) Relates experiences
  - (64) Uses pronouns, "I," "Me," "you," with some understanding
  - (66) Uses past tense and plural forms correctly
-

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Year IV - V

- (81) Asks questions about meaning of words, how things work and what they are for
- (83) Tells a long familiar story of at least two or three episodes, possibly with some change in detail
- 

\*The number in parenthesis refers to Maxfield-Buchholz scale number.

## APPENDIX B

### DESCRIPTION OF THE PRESCHOOL LANGUAGE SCALE

## APPENDIX B

### DESCRIPTION OF THE PRESCHOOL LANGUAGE SCALE

#### Auditory Comprehension

Age Level	Auditory Comprehension
1 year 6 months	<ol style="list-style-type: none"><li>1. Recognizes doll parts to indicate SELF-CONCEPT STRUCTURE.</li><li>2. Follows directions to indicate DIFFERENTIATION OF DISTINCTIVES.</li><li>3. Looks attentively to indicate FREEDOM FROM DISTRACTABILITY.</li><li>4. UNDERSTANDS QUESTIONS</li></ol>
2 years	<ol style="list-style-type: none"><li>1. Recognizes doll parts to indicate SELF-CONCEPT STRUCTURE.</li><li>2. Follows directions to indicate DIFFERENTIATION OF DISTINCTIVES.</li><li>3. Identifies pictures to indicate LABELING RECOGNITION.</li><li>4. Discriminates pictures to indicate DIFFERENTIAL CLASSIFICATION.</li></ol>
2 years 6 months	<ol style="list-style-type: none"><li>1. Understands the concept of the number <u>one</u> to indicate QUANTITATIVE COMPREHENSION.</li><li>2. Compares size to indicate SIZE CONSERVATION.</li><li>3. Understands use to indicate ENVIRONMENTAL OBJECT EXPERIENCE.</li><li>4. Follows simple commands to indicate OPERATIONAL CORRESPONDENCE.</li></ol>

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Age Level	Auditory Comprehension
3 years	<ol style="list-style-type: none"><li>1. Recognizes action to indicate ACTIVITY SENTENCING DISCRIMINATION.</li><li>2. Distinguishes prepositions to indicate PREPOSITIONAL DISTINCTIVES.</li><li>3. Understands use to indicate ENVIRONMENTAL OBJECT EXPERIENCE.</li><li>4. Distinguishes parts to indicate DIFFERENTIAL PART-WHOLE CLASSIFICATION.</li></ol>
3 years 6 months	<ol style="list-style-type: none"><li>1. Recognizes time to indicate TEMPORAL ORDERING.</li><li>2. Compares size to indicate SIZE CONSERVATION.</li><li>3. Matches sets to indicate OPERATIONAL CORRESPONDENCE.</li><li>4. Groups objects to indicate CLASSIFICATION INTEGRATION.</li></ol>
4 years	<ol style="list-style-type: none"><li>1. Recognizes colors to indicate COLOR RECOGNITION.</li><li>2. Distinguishes prepositions to indicate PREPOSITIONAL DISTINCTIVES.</li><li>3. Differentiates texture to indicate TACTILE COMPREHENSION.</li><li>4. Understands use II to indicate CONCEPT ACQUISITION.</li></ol>
4 years 6 months	<ol style="list-style-type: none"><li>1. Recognizes colors to indicate COLOR RECOGNITION.</li><li>2. Touches thumbs to indicate DIFFERENTIATION OF SELF.</li><li>3. Understands the concept of the number three to indicate QUANTITATIVE COMPREHENSION.</li><li>4. Understands use II to indicate CONCEPT ACQUISITION.</li></ol>

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Age Level	Auditory Comprehension
<hr/>	
5 years	<ol style="list-style-type: none"><li>1. Comprehends right to indicate DIFFERENTIATION OF SELF.</li><li>2. Taps rhythm to indicate ATTENTIVE AUDITORY IMITATION.</li><li>3. Distinguishes weight differences to indicate CONSERVATION OF SIZE.</li><li>4. Knows body parts to indicate SELF CONCEPT.</li></ol>
6 years	<ol style="list-style-type: none"><li>1. Comprehends directional commands to indicate DIFFERENTIATION OF SELF.</li><li>2. Counts blocks to indicate CONCEPT OF QUANTITY.</li><li>3. Distinguishes animal parts to indicate CLASSIFICATION CONCEPT.</li><li>4. Adds numbers up to five to indicate ABSTRACT COMPUTATION.</li></ol>
7 years	<ol style="list-style-type: none"><li>1. Comprehends directional commands to indicate DIFFERENTIATION OF SELF.</li><li>2. Counting taps to indicate AUDITORY ACUITY.</li><li>3. Coin values to indicate CONCEPT OF QUANTITY.</li><li>4. Adds and subtracts numbers up to ten to indicate OPERATIONAL CORRESPONDENCE.</li></ol>

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## Verbal Ability

Age Level	Verbal Ability
1 year 6 months	<ol style="list-style-type: none"> <li>1. Uses ten words to indicate VERBAL FLUENCY.</li> <li>2. Names one picture to indicate AVAILABLE VOCABULARY FOR LABELING.</li> <li>3. Asks for simple needs to indicate VERBAL NEED COMMUNICATION.</li> <li>4. Echoes or imitates to indicate VERBAL IMITATION.</li> </ol>
2 years	<ol style="list-style-type: none"> <li>1. Combines words to indicate EARLY GRAMMATICAL SENTENCING.</li> <li>2. Names objects in environment to indicate CONCRETE OBJECT LABELING.</li> <li>3. Uses pronouns to indicate DIFFERENTIATION OF SELF.</li> <li>4. Refers to self by name to indicate SELF CONCEPT.</li> </ol>
2 years 6 months	<ol style="list-style-type: none"> <li>1. Repeats two digits to indicate ATTENTIVE VERBAL IMITATION.</li> <li>2. Names objects in environment to indicate CONCRETE OBJECT LABELING.</li> <li>3. Sentence repetition to indicate MEANINGFUL IMITATION.</li> <li>4. Pronounces sounds correctly to indicate CONSONANT ARTICULATION.</li> </ol>
3 years	<ol style="list-style-type: none"> <li>1. Repeats three digits to indicate ATTENTIVE VERBAL IMITATION.</li> <li>2. Uses plurals to indicate QUANTITATIVE VERBALIZATION.</li> <li>3. Comprehends physical needs to indicate DIFFERENTIATION OF CONCRETE EXPERIENCE.</li> <li>4. Gives full name to indicate SELF CONCEPT.</li> </ol>

Age Level	Verbal Ability
3 years 6 months	<ol style="list-style-type: none"> <li>1. Converses in sentences to indicate ELEMENTARY ADULT SENTENCING.</li> <li>2. Counts to three to indicate CONVERSATION OF NUMBERS.</li> <li>3. Comprehends physical needs to indicate DIFFERENTIATION OF CONCRETE EXPERIENCE.</li> <li>4. Pronounces sound correctly to indicate CONSONANT ARTICULATION.</li> </ol>
4 years	<ol style="list-style-type: none"> <li>1. Repeats sentences to indicate MEANINGFUL IMITATION.</li> <li>2. Knows opposites to indicate TRANSDUCIVE THINKING.</li> <li>3. Comprehends physical needs to indicate DIFFERENTIATION OF CONCRETE EXPERIENCE.</li> <li>4. Counts to ten to indicate NUMERICAL UNIT SERIATION.</li> </ol>
4 years 6 months	<ol style="list-style-type: none"> <li>1. Repeats four digits to indicate ATTENTIVE VERBAL IMITATION.</li> <li>2. Knows opposites to indicate TRANSDUCIVE THINKING.</li> <li>3. Comprehends senses to indicate DIFFERENTIATION OF EXPERIENCE.</li> <li>4. Comprehends remote events to indicate ANALYSIS OF EXPERIENCE.</li> </ol>
5 years	<ol style="list-style-type: none"> <li>1. Knows coins to indicate LABELING AVAILABILITY.</li> <li>2. Names animals to indicate CLASS INTEGRATION AVAILABILITY.</li> <li>3. Comprehends senses to indicate DIFFERENTIATION OF EXPERIENCE.</li> <li>4. Pronounces sound correctly (III) to indicate CONSONANT ARTICULATION.</li> </ol>



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Age Level	Verbal Ability
6 years	<ol style="list-style-type: none"><li>1. Repeats four digits to indicate ATTENTIVE VERBAL IMITATION.</li><li>2. Names animals to indicate CLASS INTEGRATION AVAILABILITY.</li><li>3. Knows morning vs. afternoon to indicate TEMPORAL ORDERING DIFFERENTIATION.</li><li>4. Pronounces sound correctly (IV) to indicate CONSONANT ARTICULATION.</li></ol>
7 years	<ol style="list-style-type: none"><li>1. Repeats five digits to indicate ATTENTIVE VERBAL IMITATION.</li><li>2. Sentence building to indicate FORMAL ADULT SENTENCING.</li><li>3. Knows address to indicate SELF CONCEPT.</li><li>4. Pronounces sentences correctly to indicate SENTENCE ARTICULATION.</li></ol>

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## **APPENDIX C**

### **DESCRIPTION OF RECEPTIVE-EXPRESSIVE LANGUAGE ASSESSMENT**

## APPENDIX C

### DESCRIPTION OF RECEPTIVE-EXPRESSIVE LANGUAGE ASSESSMENT

#### Receptive

Level	Receptive
I 0-12 months	1.-5. Sound response behavior 6. Responds to inhibiting word 7. Comes when called 8. Follows directions
II 12-18 months	1. Gives object on request 2. Identifies one body part 3. Identifies common objects 4. Auditorily attends to song on cassette tape 5. Differentiation between 'you' and 'me' 6. Responds to quantitative task 7. Auditory recognition of objects 8. Appropriately demonstrates actions
III 18 months-2 years	1. Identifies five objects 2. Points to three body parts 3. Demonstrates understanding of simple questions by gesture or verbal response 4. Follows directions 5. Carries out instructions which demonstrate understanding of the prepositions: on, into, out of, up and down

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Level	Receptive
IV 2-3 years	<ol style="list-style-type: none"> <li>1. Responds to quantitative task</li> <li>2. Object discrimination</li> <li>3. Follows instructions which demonstrate understanding of: inside, beside, behind, in front of, and under</li> </ol>
V 3-4 years	<ol style="list-style-type: none"> <li>1. Responds to qualitative task</li> <li>2. Discriminates between activity and its sequence</li> <li>3. Classification</li> </ol>
VI 4-5 years	<ol style="list-style-type: none"> <li>1. Child demonstrates by the use of syntactical agreement the concepts of past and future</li> <li>2. Follows instructions which demonstrate understanding of: between, behind, above and toward</li> <li>3. Gives opposites for selected words</li> <li>4. Comprehension of numbers two and three</li> <li>5. Composition</li> <li>6. Understands function</li> </ol>

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## Expressive

Level	Expressive
I 0-12 months	<ol style="list-style-type: none"> <li>1. Variation in tone, inflection or rhythm of voice</li> <li>2. Smiles, coos, laughs in play situation</li> <li>3. Vocalizes in protest in order to regain an object</li> <li>4. Imitates vocal sounds</li> <li>5. Babbles</li> <li>6. Vocabulary list</li> <li>7. Child imitates with gesture</li> </ol>
II 12-18 months	<ol style="list-style-type: none"> <li>1. Observable jargon and varied vocal inflection during free play</li> <li>2. Intelligible words during play</li> <li>3. Vocal response to rhythm and music on cassette tape</li> <li>4. Verbalizes social responses</li> <li>5. Vocabulary list</li> <li>6. Child verbalizes immediate experiences when engaged in play</li> <li>7. Incorporation of two word phrases into spontaneous speech</li> <li>8. Verbalizes needs</li> <li>9. Echoes or imitates two different words</li> </ol>
III 18 months-2 years	<ol style="list-style-type: none"> <li>1. Responds to "What is your name?"</li> <li>2. Uses two to three word combinations when describing action</li> <li>3. Child names objects from environment</li> <li>4. Pronoun usage</li> <li>5. Names foods</li> <li>6. Elicitation of body parts</li> <li>7. Memory for sentences I</li> </ol>

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Level	Expressive
IV 2-3 years	<ol style="list-style-type: none"> <li>1. Understands function</li> <li>2. Digit span I</li> <li>3. Names environmental sounds</li> <li>4. Memory for sentences II</li> <li>5. Describes textures</li> <li>6. Incorporation of three to four word phrases into spontaneous speech</li> <li>7. Incorporates plurals in responses</li> <li>8. Elicitation of body parts</li> <li>9. Names articles of clothing</li> </ol>
V 3-4 years	<ol style="list-style-type: none"> <li>1. Comprehends and finds reasons I</li> <li>2. Digit span II</li> <li>3. Sex discrimination</li> <li>4. Synthesis of function</li> <li>5. Names objects</li> </ol>
VI 4-5 years	<ol style="list-style-type: none"> <li>1. Comprehends and finds reasons II</li> <li>2. Defines words in terms of function</li> <li>3. Describe items</li> <li>4. Memory for sentences III</li> <li>5. Digit span III</li> <li>6. Comprehension of number four</li> </ol>

---

Loose Objects

two cups	
two disks	
knife, fork, spoon	
soap and washcloth	
box - button - two marbles - key	
rattle	
three blocks	
cassette tape	
bowl - plate	
shoe	
ball	
comb	

Plate I	cup, spoon, shoe
II	ball, fork, plate
III	glass, toothbrush, comb
IV	toothpaste, washcloth, block
V	spoons
VI	dowels
VII	block - big & little
VIII	blocks (2)
IX	cylinders (2)
X	blocks (3)
XI	cylinders (3)
XII	blocks (4)

Items to be supplied by examiner

- a. cassette tape recorder
- b. fuzzy stuffed animal
- c. apple
- d. banana
- e. cookie
- f. juice
- g. toy drum and beater
- h. watch
- i. one glass (made of glass)
- j. articles of clothing:
  - dress
  - socks
  - shirt
  - underpants
  - pants
  - mittens
  - coat
  - boot
- k. pencil - to be used by examiner

Materials for Assessment: Test Kit (RELA)

## **APPENDIX D**

### **RECORDING FORMS AND SCORE SHEETS**



# APPENDIX D

## RECORDING FORMS AND SCORE SHEETS

### PRESCHOOL LANGUAGE SCALE

#### Score Sheet

Auditory Comprehension			Verbal Ability		
Age	Items Passed	Months Credit	Age	Items Passed	Months Credit
1½ years	x 1½ =		1½ years	x 1½ =	
2 years	x 1½ =		2 years	x 1½ =	
2½ years	x 1½ =		2½ years	x 1½ =	
3 years	x 1½ =		3 years	x 1½ =	
3½ years	x 1½ =		3½ years	x 1½ =	
4 years	x 1½ =		4 years	x 1½ =	
4½ years	x 1½ =		4½ years	x 1½ =	
5 years	x 1½ =		5 years	x 1½ =	
6 years	x 1½ =		6 years	x 1½ =	
7 years	x 1½ =		7 years	x 1½ =	
Auditory Comprehension Age			Verbal Ability Age		
Quotient (AC/CA x 100)			Quotient (VA/CA x 100)		

Name \_\_\_\_\_ Date of Test \_\_\_\_\_

Birthdate \_\_\_\_\_ Chronological Age \_\_\_\_\_ Examiner \_\_\_\_\_

Language Age \_\_\_\_\_ Language Quotient \_\_\_\_\_  
 (AC + VA) / 2 (LA/CA x 100)

PRESCHOOL LANGUAGE SCALE  
Recording Form

Name: \_\_\_\_\_

<u>Age 1 1/2 years</u>		<u>Age 2 years</u>		<u>Age 2 1/2 years</u>		<u>Age 3 years</u>		<u>Age 3 1/2 years</u>	
<u>Auditory</u>	<u>Verbal</u>	<u>Auditory</u>	<u>Verbal</u>	<u>Auditory</u>	<u>Verbal</u>	<u>Auditory</u>	<u>Verbal</u>	<u>Auditory</u>	<u>Verbal</u>
___ 1.	___ 1.	___ 1.	___ 1.	___ 1.	___ 1.	___ 1.	___ 1.	___ 1.	___ 1.
___ 2.	___ 2.	___ 2.	___ 2.	___ 2.	___ 2.	___ 2.	___ 2.	___ 2.	___ 2.
___ 3.	___ 3.	___ 3.	___ 3.	___ 3.	___ 3.	___ 3.	___ 3.	___ 3.	___ 3.
___ 4.	___ 4.	___ 4.	___ 4.	___ 4.	___ 4.	___ 4.	___ 4.	___ 4.	___ 4.

<u>Age 4 years</u>		<u>Age 4 1/2 years</u>		<u>Age 5 years</u>		<u>Age 6 years</u>		<u>Age 7 years</u>	
<u>Auditory</u>	<u>Verbal</u>	<u>Auditory</u>	<u>Verbal</u>	<u>Auditory</u>	<u>Verbal</u>	<u>Auditory</u>	<u>Verbal</u>	<u>Auditory</u>	<u>Verbal</u>
___ 1.	___ 1.	___ 1.	___ 1.	___ 1.	___ 1.	___ 1.	___ 1.	___ 1.	___ 1.
___ 2.	___ 2.	___ 2.	___ 2.	___ 2.	___ 2.	___ 2.	___ 2.	___ 2.	___ 2.
___ 3.	___ 3.	___ 3.	___ 3.	___ 3.	___ 3.	___ 3.	___ 3.	___ 3.	___ 3.
___ 4.	___ 4.	___ 4.	___ 4.	___ 4.	___ 4.	___ 4.	___ 4.	___ 4.	___ 4.

EXPERIMENTAL FORM II  
R.E.L.A.  
Score Sheet

\*RECEPTIVE\*

\*EXPRESSIVE\*

Age Level	Items Passed	Months Credit	Items Passed	Months Credit
Level 1. (0-1years)	_____ x 2.0 mo.	_____	Level 1. _____ x 1.2 mo.	_____
Level 2. (1-2years)	_____ x 1.0 mo.	_____	Level 2. _____ x 1.2 mo.	_____
Level 3. (2-3years)	_____ x 1.0 mo.	_____	Level 3. _____ x 1.0 mo.	_____
Level 4. (3-4years)	_____ x 1.2 mo.	_____	Level 4. _____ x .5 mo.	_____
Level 5. (4-5years)	_____ x 1.5 mo.	_____	Level 5. _____ x .75 Mo.	_____
Level 6. (5-6years)	_____ x .5 mo.	_____	Level 6. _____ x .75 mo.	_____
Receptive Language age _____		_____	Expressive Language age _____	

Quotient  
(RL/CA x 100)

Quotient  
(EL/CA x 100)

Name \_\_\_\_\_ Date of Test \_\_\_\_\_

Birthdate \_\_\_\_\_ Chronological Age \_\_\_\_\_ Examiner \_\_\_\_\_

Language Age  $\frac{(RL + EL)}{2}$  Language Quotient  $\frac{(LA/CA \times 100)}{2}$

**RECEPTIVE-EXPRESSIVE LANGUAGE ASSESSMENT**

**Recording Form**

Name: \_\_\_\_\_

Level 1 Receptive	Level 2 Receptive	Level 3 Receptive	Level 4 Receptive	Level 5 Receptive	Level 6 Receptive
6. _____ 7. _____ 8a. _____ b. _____ c. _____ d. _____	1. _____ 2. _____ 3. _____ 4. _____ 5a. _____ b. _____ 6. _____ 7. _____ _____ _____ 8. _____	1. _____ 2. _____ 3. _____ 4a. _____ b. _____ c. _____ d. _____ 5a. _____ b. _____ c. _____ d. _____ e. _____	1a. _____ b. _____ 2a. _____ b. _____ c. _____ 3a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ 3a. _____ b. _____	1a. _____ b. _____ c. _____ d. _____ 2a. _____ b. _____ c. _____ d. _____ 3a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ 4a. _____ b. _____	1a. _____ b. _____ c. _____ 2a. _____ b. _____ c. _____ d. _____ 3a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ g. _____ 4a. _____ b. _____
Expressive	Expressive	Expressive	Expressive	Expressive	Expressive
1. _____ 2. _____ 3. _____ 4a. _____ b. _____ c. _____ 5. _____ 6. _____ 7. _____	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9a. _____ b. _____	1. _____ 2. _____ 3. _____ 4a. _____ b. _____ 5. _____ 6. _____ 7a. _____ b. _____ c. _____ d. _____ e. _____	1a. _____ b. _____ c. _____ d. _____ 2. _____ 3a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ g. _____ h. _____ i. _____	1. _____ 2. _____ 3. _____ 4. _____ 5a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ g. _____ h. _____ i. _____ j. _____	1a. _____ b. _____ 2a. _____ b. _____ c. _____ d. _____ e. _____ 3a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ g. _____ 4a. _____ b. _____

## **APPENDIX E**

### **RAW DATA**

# APPENDIX E

## RAW DATA

Three Year Old Subject	Sex	Chronological Age in Months	Mental Age from PPVT in Months	PLS Auditory Comp. in Months	PLS Verbal Ability in Months	PLS Language Age in Months	RELA Receptive in Months	RELA Expressive in Months	RELA Language Age in Months
1	M	36	40	37	33	35	66	57	62
2	M	36	43	49	45	47	52	47	50
3	F	36	49	57	52	55	65	62	63
4	F	36	62	47	39	43	50	58	54
5	M	36	58	33	35	34	47	54	51
6	F	36	51	36	36	36	44	47	46
7	M	37	43	26	27	27	35	33	34
8	M	37	32	47	44	46	55	58	55
9	F	37	65	56	59	57	70	68	69
10	M	37	67	39	38	39	39	45	42
11	M	38	61	38	39	39	44	39	42
12	F	39	41	44	51	43	44	56	50
13	M	39	58	50	53	52	59	68	64
14	F	39	45	36	36	36	48	48	48
15	M	39	38	41	42	42	54	57	56
16	M	39	75	45	44	45	48	57	53
17	M	39	42	39	38	39	47	37	42
18	F	41	55	47	52	50	30	47	39
19	M	41	55	51	50	51	60	57	59
20	F	41	56	53	50	52	64	59	62
21	M	43	46	39	41	40	36	36	36
22	M	45	51	45	47	46	53	57	55
23	M	45	69	54	50	52	67	67	67
24	F	45	75	55	56	56	71	72	72
25	M	46	58	45	45	45	36	50	43
26	M	46	53	50	44	47	48	51	50
27	F	46	47	54	47	51	61	60	61
28	F	47	61	72	62	67	54	60	57
29	F	47	92	72	62	67	69	68	69
30	F	47	61	54	53	54	66	64	65

M = 17

F = 13      3-0 to 3-11 with x age of 3-5 (41 mo.)

Four Year Old Subject Number	Sex	Chronological Age in Months	Mental Age from PPVT in Months	PLS Auditory Comp. in Months	PLS Verbal Ability in Months	PLS Language Age in Months	RELA Receptive in Months	RELA Expressive in Months	RELA Language Age in Months
31	F	48	51	54	53	54	60	60	60
32	M	48	55	63	63	63	69	65	67
33	F	49	59	72	63	68	67	68	68
34	F	49	73	59	60	60	64	66	65
35	F	50	78	72	71	72	70	69	70
36	M	50	67	72	72	72	71	71	71
37	M	51	73	50	48	49	54	57	56
38	M	51	82	63	69	66	72	70	71
39	M	51	80	60	62	61	71	70	71
40	F	51	55	54	47	51	67	62	65
41	F	51	78	63	60	62	61	71	66
42	M	52	78	54	54	54	60	57	59
43	M	52	65	63	62	63	70	67	69
44	M	53	55	63	57	60	63	66	65
45	F	54	80	72	65	69	69	72	71
46	M	55	78	63	62	63	71	69	70
47	M	55	65	48	54	51	67	65	66
48	F	55	78	72	66	69	72	68	70
49	F	56	73	54	53	54	64	68	66
50	F	56	65	54	54	54	71	68	70
51	M	56	62	62	63	63	68	65	67
52	M	58	82	69	72	71	70	71	71
53	M	58	69	68	69	68	69	72	71
54	M	58	51	65	65	65	69	70	70
55	M	58	78	66	65	65	66	66	66
56	F	58	69	62	63	63	67	66	67
57	F	58	71	60	60	60	60	60	60
58	M	58	97	72	72	72	72	72	72
59	F	59	90	69	63	66	70	71	71
60	F	59	71	63	69	66	72	66	69

M = 16

F = 14      4-0 to 4-11 with x age of 4-6 (54 mo.)

Five Year Old Subject Number	Sex	Chronological Age in Months	Mental Age from PPVT in Months	PLS Auditory Comp. in Months	PLS Verbal Ability in Months	PLS Language Age in Months	RELA Receptive in Months	RELA Expressive in Months	RELA Language Age in Months
61	M	60	78	60	56	58	68	66	67
62	F	60	67	66	63	65	71	69	70
63	M	60	85	60	60	60	71	65	68
64	F	60	82	72	72	72	70	72	71
65	F	61	69	65	71	68	72	71	71
66	M	61	80	72	71	71	72	72	72
67	F	61	71	72	72	72	71	70	70
68	M	63	87	69	63	66	71	68	69
69	M	63	75	72	72	72	72	71	71
70	M	63	75	72	72	72	72	72	72
71	F	63	80	72	72	72	72	72	72
72	M	64	78	72	72	72	70	72	71
73	M	64	103	72	72	72	72	72	72
74	F	65	69	72	72	72	72	72	72
75	F	65	71	69	63	66	68	70	69
76	M	65	82	66	60	63	69	70	68
77	M	65	99	69	69	69	72	72	72
78	F	66	130	72	72	72	72	72	72
79	F	66	75	72	63	68	70	69	70
80	M	66	87	72	72	72	72	72	72
81	F	66	80	72	72	72	71	71	71
82	M	67	92	69	69	69	72	72	72
83	M	69	97	72	69	71	72	69	71
84	M	69	73	66	66	66	67	66	67
85	M	69	75	72	72	72	71	71	71
86	M	69	97	72	72	72	72	72	72
87	M	70	87	72	72	72	71	71	71
88	M	70	80	69	66	68	70	72	71
89	M	71	80	72	72	72	72	72	72
90	M	71	147	72	72	72	72	71	71

M = 20

F = 10

5-0 to 5-11 with x age of 5-5 (65 mo.)



**APPENDIX F**

**LETTER TO PARENTS**

## APPENDIX F

### LETTER TO PARENTS

Michigan State University  
Department of Audiology  
and Speech Sciences  
Graduate Division

Dear Parents,

My name is Gloria M. Anderson and I am a Speech Therapist for Ingham Intermediate School District. At this time, I am completing my Master of Arts in Speech Pathology at Michigan State University. For the past two and one half years, I have been developing a language assessment scale for visually handicapped children. Presently, I will be attempting to establish the validity of the scale as my thesis requirement which has been approved by my thesis committee, and the Committee for the use of Human Subjects in Research (MSU Department of Speech Pathology). To establish the validity, a comparison is needed between the actual test scores of the language scale for the visually handicapped and the normal preschool language scale from which it is modeled.

At this time, I would like to give both assessments to normal, sighted preschool aged children. I will be conducting my research project at Community Nursery summer term and would like your permission for your child to participate. From past experiences with the administration of these assessments, children generally enjoy their participation. The language scales are designed as activities that are fun to do. The testing procedure would be as follows:

- (1) The Peabody Picture Vocabulary Test (Dunn, 1965) would be given to each child by a certified Speech Pathologist from the Ingham Intermediate School District. The speech pathologist in this case will be either Sherry Martin or myself depending on availability.

Sincerely,

**Gloria M. Anderson**  
**Masters Candidate in**  
**Speech Pathology**

\*A short narrative describing each assessment is attached. The assessments will be available at your center to examine while I am conducting the study.

I, \_\_\_\_\_ parent of, \_\_\_\_\_  
your name child's name

agree to the administration of the Peabody Picture Vocabulary Test, Receptive-Expressive Language Assessment, and the Preschool Language Scale at the Community Nursery during the week of \_\_\_\_\_, 1977.

"I understand that I will receive a copy of the general results of the study within a reasonable time after the study is completed. I further understand that if I should move from my present location, it is my responsibility to inform the investigator of my address change."

Parent's Signature \_\_\_\_\_

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