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A Comparison of Groups' Judgments during the Screening of Normally-Developing and Language-Impaired Children

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A COMPARISON OF GROUPS' JUDGMENTS DURING THE SCREENING OF NORMALLY-DEVELOPING AND LANGUAGE-IMPAIRED CHILDREN

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This thesis submitted by Karen Louise Ruttledge in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota is hereby approved by the Faculty Advisory Committee under whom the work has been done.

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ABSTRACT

The purpose of the present study was to determine whether classroom teachers, student clinicians, and public school speech-language pathologists judge child language performance differently when using personal criteria and when using selected criteria to screen child language performance.

The subjects in the present study were ten public school speech-language pathologists with one to thirteen years of experience, ten student clinicians with one to three semesters of supervised clinical practicum, and ten classroom teachers with one to six years of experience. Two videotapes of one-minute start/stop language samples of ten children, five of whom were language normal and five of whom were language impaired, were shown to the three subject groups under controlled conditions. The subjects judged the language performance of the ten children using personal criteria and selected criteria.

The subject groups were 79 percent correct in their judgments of the performance of language-impaired children. The subject groups were 94 percent correct in their judgments of the language performance of children without language impairment. Statistical analyses of the judgments of the subject groups revealed significant differences among the subject groups' judgments of the language performance of the five language-normal children.

It was concluded from the present study that classroom teachers use Sound Production Criteria as an important element in their judgment of child language performance. The subject groups did not accurately identify the presence of language impairment in children and did not agree on the severity of the identified language impairment. The three subject groups did identify the normal language performance accurately and did agree on the ratings of normalcy.

CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

The Committee on Language of the American Speech and Hearing Association (1975, p. 277) listed several competencies speech pathologists and audiologists providing services for children and adults with language disorders should possess. Among these competencies are:

> . . . the capability of identifying children and adults with language disorders by the use of appropriate screening and assessment procedures. The clinician must be capable of diagnosing the nature and severity of language disorders by using both standardized tests and unstandardized clinical diagnostic procedures that assess phonological, morphological, lexical, syntactic, and semantic skills for the spoken and written language. The competence to assess the linguistic and other related behaviors found in persons with deviant language assumes a firm grasp of behavioral measurement techniques in terms of formal as well as informal procedures.

As presented in this policy statement of the American Speech and Hearing Association (ASHA), the speech-language pathologist must be able to screen and diagnose language disorders using a variety of methods. It was the purpose of the present study to determine whether classroom teachers with one to six years of experience, student clinicians who have completed one to three semesters of supervised clinical experience, and public school speech-language pathologists who have been employed from one to thirteen years rate child language performance differently when using personal, informal, observational criteria and when using developed criteria to screen language performance.

Review of the Literature

In a survey completed by the ASHA Committee on Language (Stark, 1971), 36 percent of 2148 speech pathologists indicated that more than 50 percent of their caseloads were language-impaired individuals. The speech-language pathologist must be able to use screening and assessment procedures in the evaluation of his caseload.

The purpose of screening and assessment procedures and measures are different. According to Emerick and Hatten (1974, p. 132),

> The purpose of screening is to select children with significant communication problems by assessing a total population with a brief but discriminating testing procedure. The objective, then, is detection, not description of persons with defective speech.

Pendergast et al (1973, p. 110) stated,

> Rapid screening provides the professional staff with a cursory profile of the verbal receptive and expressive abilities of each student. It should identify all children with significant speech, hearing, or language deviations.

Most screening procedures are intended to identify children who need further evaluation. Pendergast et al. (1973, p. 116), also stated,

> Rapid screening procedures will answer only one question: Does an individual child show characteristics indicating a need for further assessment? More refined screening activities would begin to answer other questions such as: What kind of further testing is needed? What type of problem has been identified? What referral service is now indicated?

Language assessment is a more complex and complete procedure than is screening. The speech-language pathologist's goal in assessment of language depends on his own concept of language and communication. Siegel and Broen (1976, p. 81) stated,

> . . . there are three dimensions that are significant for adequate language and communication. The first involves syntactic structure. The second is knowledge of the vocabulary of one's language and the multiple meanings and nuances that words may have. Finally there is the matter of language in use; language is a powerful social tool for getting work done. These three dimensions along with articulation . . . form the basis for language assessment. Standard tests are used when available, but invariably the clinician must collect spontaneous protocols and devise supplemental tests. It is the combination of these approaches and dimensions that defines a thorough-going assessment procedure.

In summary, screening is used to identify children who need further evaluation. Assessment is used to determine the specific areas in which a child is language deficient and the extent of the language deficiency.

Language Screening Procedures

Language screening consists of various procedures including numerous informal techniques. Pendergast et al. (1973) described three models of screening school populations: classroom surveys, small group screenings, and team screening using supportive personnel. Pendergast et al. also listed features necessary to accomplish the purpose of screening (1973, p. 111):

> (1) a precise statement of the goal to be accomplished by rapid screening, (2) a knowledge of rapid screening and follow up procedures, (3) knowledge about expenditures of time, money, and professional energies required for complete screening programs, and (4) concise advance planning.

In the public school setting the speech-language pathologist may ask the child his name, age, grade, and other information to obtain a speech sample (Sommers, 1969). In a summer Headstart Program in Washington, D.C., five items were used to screen language. They included the telling of the child's full name and age, telling a story

from a set of pictures, naming familiar objects and actions, identifying body parts, and following directions (Monsees and Berman, 1968). The staff of the Bill Wilkerson Hearing and Speech Center (Bill Wilkerson Hearing and Speech Center, 1976) coordinated an effort to screen 20,813 Headstart children in Tennessee, Kentucky, North Carolina, and Florida. Clinicians first talked with a child and administered the Sounds in Words Subtest of the Goldman-Fristoe Test of Articulation (Goldman and Fristoe, 1969) if they felt it necessary. Each child's syntactic performance was screened by having him repeat a series of sentences developed by Brown and Fraser (1964) representing various structures. Sampling the children who failed these screening procedures revealed that 84 percent had clinically significant problems (Bill Wilkerson Hearing and Speech Center, 1976). These results were interpreted to indicate that the screening procedures were successful.

Mitchell and Kamara (1976) designed a screening program to meet the needs of the Early Periodic Screening Diagnosis and Treatment Program. They found that most accurate predictors of linguistic difficulty were the Peabody Picture Vocabulary Test (Dunn, 1959) and the Grammatic Closure Subtest of the Illinois Test of Psycholinguistic Abilities (Kirk, McCarthy, and Kirk, 1968). Mitchell and Kamara also stated (1976, p. 4),

> An important aspect of this screening seems to be that it calls for the professional in speech pathology to administer the test concerned. It was interesting in our study to note that many remarks were added on screening sheets indicating observations of various kinds.

There are formal methods which are used to screen the language of preschoolers. The Preschool Language Screening Test (Hannah and Gardner, 1974) is a screening device for children ages three years to

five years six months. One eleven item section of the test is the Toddler Screening Section. The test can be administered by professionals working with preschool children. Such professionals are expected to refer low scoring children to speech pathologists for further testing. The test requires twenty-five to thirty-five minutes to administer and is divided into four sections. Scores below the tenth percentile reveal a need for further assessment.

The Northwestern Syntax Screening Test (Lee, 1969) measures the use of syntax by three to eight year old children. The test measures the use of prepositions, pronouns, negation, verb tense and voice, and noun plurals. The measure has receptive and expressive sections with twenty items in each section. It takes approximately fifteen minutes to administer this test.

The Screening Test for Auditory Comprehension of Language (Carrow, 1973a) was derived from the Test for Auditory Comprehension of Language (Carrow, 1973b) and consists of twenty-five items which determine whether further testing is necessary. Categories of the test include form class and function words, morphological constructions, grammatical categories, and syntactic constructions. If the child scores below the tenth percentile, the Test for Auditory Comprehension of Language should be administered.

Kallstrom (1975, p. 1) listed two purposes for her screening test, The Yellow Brick Road,

> The Yellow Brick Road is designed to provide insight into the strengths and weaknesses in motor, visual, auditory and language functioning of individual preschool children so that appropriate early education experiences can build the pattern of functioning to optimal level before formal academic work is begun.

> The Yellow Brick Road also provides preliminary identification of children whose patterns of functioning indicate the need for immediate referral and therapy in a specific area of weakness.

The Yellow Brick Road consists of four subtests: motor, visual, auditory, and language functioning. Children four years nine months to six years nine months should be able to complete four of six items on each subtest correctly. Twenty-four children can be tested at one time.

The Magic Kingdom: A Preschool Screening Program (McDonald and Gingold, 1975) screens children in the areas of motor, visual, auditory, language, conceptual, and socio-emotional development. Administration of this program does not require speech-language pathologists. The speech-language pathologists train volunteers to administer the test. The parents are informed that their child is functioning within normal limits or that there is a need for further evaluation.

Language Assessment Procedures

The informal and formal methods of screening preschool and school-aged children accomplish the purpose of determining which children need further evaluation. That evaluation is accomplished through the administration of assessment measures. One method of classifying language assessment measures is to determine whether the procedures test the language comprehension (receptive ability) or language production (expressive ability) of the individual child.

The Peabody Picture Vocabulary Test (Dunn, 1959) is a test of comprehension of single vocabulary items. The tests consists of a notebook with four pictures on each page. The subject responds by pointing

to the test word given by the examiner. The age range of the Peabody Picture Vocabulary Test is two years three months to eighteen years five months. From the raw score a mental age, Intelligence Quotient, standard score equivalent, and percentile equivalent can be obtained. The testing and scoring require approximately fifteen minutes.

The Full-Range Picture Vocabulary Test (Ammons and Ammons, 1948) is similar to the Peabody Picture Vocabulary Test in that it also tests comprehension of single words. The test consists of sixteen picture plates each of which contains from one to eleven test words. The subject is asked to point to the picture showing what the test word means. The age range is from two years to adult level. Mental ages are obtained for children from the raw scores. Percentiles are obtained for adults above the age of sixteen and one-half.

The Test for Auditory Comprehension of Language (Carrow, 1973b) has two purposes. The first is to measure the auditory comprehension of language structure and to assign the child a developmental level of comprehension. The second purpose is diagnostic and allows the examiner to measure the child's performance on specific items and groups of items to determine areas of linguistic ability. The child points to the correct picture on a page with three pictures. The test consists of 101 items and requires twenty minutes to administer.

The authors of Assessment of Children's Language Comprehension (Foster, Giddan, and Stark, 1973) listed two purposes for their test:

1. To determine the level at which the child is unable to process and remember lexical items in syntactic sequences.
2. To determine how many word classes in different combinations of lengths and complexities a child can understand.

The test includes five critical elements: agents, action, relations, objects, and attributes. The test is scored with a percentage score, and requires ten minutes to administer. It is intended to be used with three to seven year old children.

Several methods have been developed to observe and analyze children's expressive language. Longitudinal studies have been used by some investigators (Leopold, 1939; Bloom, 1970; Brown, 1973). Speech clinicians have used the results of such studies of psycholinguistic ability to formulate strategies and procedures for evaluating children's expressive language. Several tests and procedures have evolved from these studies.

The Developmental Sentence Scoring (Lee, 1974) procedure was developed to measure a child's grammatical development. The procedure consists of collecting a corpus of fifty complete sentences and listing them. The sentences must have a noun and verb in a subject-predicate relationship. Lee stated (1974, p. 136),

> Eight categories of grammatical forms have been selected as showing the most significant developmental progression in children's language: (1) indefinite pronoun or noun modifier, (2) personal pronoun, (3) main verb, (4) secondary verb, (5) negative, (6) conjunction, (7) interrogative reversal in questions, and (8) wh-questions.

The sentences are scored according to whether these eight grammatical structures are present. Lee stated (1974, p. 136),

> Credit is given only when a structure meets all the requirements of adult standard English, and this includes syntactic, morphological, and semantic conventions.

The clinician also notes whether the child has attempted a structure. The Developmental Sentence Scoring procedure was standardized on a group of 200 children aged two years zero months to six years eleven

months. If a child falls below the tenth percentile he is considered to be language delayed.

Another expressive language assessment procedure is the Carrow Elicited Language Inventory (Carrow, 1974). Carrow stated (1974, p. 3),

> The Carrow Elicited Language Inventory is a diagnostic procedure that attempts to bypass the problems inherent in sampling to measure the child's productive control of grammar. The procedure was designed to provide a reliable but efficient method of obtaining performance data on a child's grammatical system. The test attempts to eliminate some of the problems of sampling by including items representing a wide range of grammatical complexity; i.e., it attempts to give evidence not only of what a child does, but also what he is capable of doing.

The Carrow Elicited Language Inventory is administered by having the child imitate sentences which are read to him. The test is audiotape recorded and errors are classified by type: substitution, omission, addition, transposition, or reversal. A percentile is obtained for each type of error. Percentile ranks are provided for children from age three years zero months to seven years eleven months.

Another method of analyzing expressive language is Language Sampling, Analysis, and Training (Tyack and Gottsleban, 1974). The language sample consists of one hundred sentences, a sentence being defined as "two structurally related morphemes" (Tyack and Gottsleban, p. 5). A score sheet is used on which parts of speech are listed, and frequency of occurrence data for each part of speech is recorded. A language level is assigned from the mean number of morphemes used in sentences. To help plan a therapy program, forms and constructions used by the child above and below his assigned level are listed. From this list, goals for therapy can be obtained.

Assessing Expressive and Receptive Language

Several assessment measures include comprehension and expression sections in the same test. The Sequenced Inventory of Communication Development (Hedrick, Prather, and Tobin, 1975) was developed to evaluate the receptive and expressive language of children aged four months to four years. Hedrick, Prather, and Tobin stated (1975, p. 3), "Our ultimate purpose was to increase our efficiency for remedial programming, both in the home and in the educational setting." The purpose of the Sequenced Inventory of Communication Development (Hedrick, Prather, and Tobin, 1975) is to sample communication behavior. It is not limited to language development. The receptive section of the test measures awareness, discrimination, and understanding. The expressive scale measures the following: motor responses; vocal, and verbal responses; imitating, initiating, and responding behaviors; verbal output; and articulation. Administration time in the normative study varied from thirty to seventy-five minutes. A communication age is derived from the test.

The Michigan Picture Language Inventory (Lerea, 1958) measures vocabulary comprehension and expression, and language structure comprehension and expression. The vocabulary section contains thirty-five items, five at each age level for children three to nine years of age. The language structure section of the test measures the child's understanding and expression of singular and plural nouns, personal and possessive pronouns, adjectives, adverbs, demonstrative articles, prepositions, verbs, and auxiliaries.

The Utah Test of Language Development (Mecham, Jex, and Jones, 1967) was developed from the Verbal Language Development Scale (Mecham, 1959) which was derived from developmental scales described by psychologists. A language age equivalent is determined using the interview technique.

The Communicative Evaluation Chart (Anderson, Miles, and Matheny, 1963) is used to appraise a child's abilities in language and performance. Unskilled examiners can use the chart and refer the child to a speech-language pathologist, if necessary. The items on the test were taken from the child development and performance findings of Gesell, Binet, and Cattell. The chart evaluates children aged three months through five years.

The Receptive-Expressive Emergent Language Scale (Bzoch and League, 1971) (REEL) uses the interview technique to provide a receptive quotient, expressive quotient, and a composite language quotient for children from birth to three years. Bzoch and League (1971, p. 16) stated,

> The REEL Scale is grounded on three basic premises regarding language function. Briefly stated, these are as follows:
>
> 1. The auditory modality is the primary means of acquiring language.
> 2. Language is an innate (genetically based) capacity of man.
> 3. Speech behavior and cognitive development are inseparably interconnected.

The Preschool Language Scale (Zimmerman, Steiner, and Evatt, 1969) combines a developmental approach and the receptive-expressive dichotomy. The speech-language pathologist tests children from the age of one year six months to seven years. Auditory comprehension and

verbal expression ages and quotients are obtained and are combined to give a language quotient. The authors state that the test can be used by child development specialists to help develop and evaluate language programs.

Assessing Linguistic Components

Another method of describing testing procedures is according to the aspect of language being tested. Language is usually divided into three components: syntax, semantics, and phonology. Liles (1972, p. 14) stated,

> For descriptive purposes one can study the sounds of a language, its phonology; he can study meaning, semantics; or he can study how different elements of the sentence relate to one another, syntax.

To assess a language deficiency it is necessary to measure his performance in each of these areas. In the area of syntax, measures such as the Test for Auditory Comprehension of Language (Carrow, 1973) and the Carrow Elicited Language Inventory (Carrow, 1974) are used. In semantics, word meanings are tested by the Peabody Picture Vocabulary Test (Dunn, 1959), Assessment of Children's Language Comprehension (Foster, Giddan, and Stark, 1973), the Full-Range Picture Vocabulary Test (Ammons and Ammons, 1948), and the Michigan Picture Language Inventory (Lerea, 1958). The third component of language, phonology, is testable using three methods. One method is phoneme-based and includes such tests as the Arizona Articulation Proficiency Scale (Fudala, 1963), The Goldman-Fristoe Test of Articulation (Goldman and Fristoe, 1969) and The Templin-Darley Tests of Articulation (Templin and Darley, 1960). McReynolds and Engmann (1975) described a second method of phonological evaluation using

distinctive features. A third method of phonological evaluation is the deep testing of individual phonemes in various phonetic contexts (McDonald, 1964).

Public Law 94-142

With the enactment of Public Law 94-142, more effective methods of screening have become necessary to fulfill the intent of the law. Public Law 94-142 is an amendment of the Education of the Handicapped Act, Part B (Department of Health, Education, and Welfare, 1976). The Department of Health, Education and Welfare (1976, p. 56966) stated,

> Public Law 94-142 enacted on November 29, 1975, contains extensive amendments to Part B, including provisions which are designed to assure that all handicapped children have available to them a free appropriate public education, to assure that the rights of handicapped children and their parents are protected, to assist states and localities, to provide for the education of handicapped children, and to assess and assure the effectiveness of efforts to educate such children.

In this effort to provide an appropriate education it is necessary to evaluate children. Provisions for evaluation are alluded to in Public Law 94-142 (Department of Health, Education and Welfare, 1976, p. 56991),

> Testing and evaluation materials and procedures used for the purposes of evaluation and placement of handicapped children must be selected and administered so as not to be racially or culturally discriminatory.

More specific regulations are provided (Department of Health, Education, and Welfare, 1976, p. 56991):

> State and local educational agencies shall insure, at a minimum, that:
> (a) Tests and other evaluation materials:
> (1) Are provided and administered in the child's native language or other mode of communication, unless it is clearly not feasible to do so;

> (2) Have been validated for the specific purpose for which they are used;
>
> (3) Are recommended by their producers for the specific purpose for which they are used; and
>
> (4) Are administered by personnel who meet applicable certification or licensure requirements under state law:
>
> . . . . . .
>
> (f) The interpretation of the evaluation data and the subsequent determination of the child's educational placement are made by a team or a group of persons knowledgeable about the child, the meaning of the evaluation results, the placement options, and the personnel available to provide special education and related services . . . .

Purpose and Questions

The present study was designed to investigate one approach to screening the language performance of children. The specific purpose was to determine whether classroom teachers with one to six years of experience, student clinicians who have completed one to three semesters of supervised clinical practice, and public school speech-language pathologists who have been employed one to thirteen years judge child language performance differently when using personal, informal, observational criteria and when using selected criteria to screen language performance.

The present study was designed to answer the following questions:

1. What are the criteria used by the three subject groups to differentiate between normal and impaired child language performance?
2. Are there consistencies among the criteria used by the three subject groups in making such judgments?
3. Are there significant differences among the three subject groups in their rating of the language performance of normal and language deviant children when using selected criteria?

CHAPTER II

PROCEDURES

The purpose of the present study was to determine whether classroom teachers with one to six years of experience, student clinicians who have completed one to three semesters of supervised clinical practicum, and public school speech-language pathologists who have been employed one to thirteen years judge child language performance differently when using personal, informal, observational criteria and when using selected criteria to screen language performance.

Subjects

The first group of subjects consisted of ten female classroom teachers with one to six years of teaching experience. Eight of the teachers had baccalaurate degrees and two had master's degrees. The second group of subjects consisted of eight female and two male students at the University of North Dakota who had completed one to three semesters of supervised clinical practice in speech and language pathology. The third group of subjects consisted of ten female public school speech-language pathologists with one to thirteen years of experience. Three of the speech-language pathologists had baccalaurate degrees and seven had master's degrees. Four of the speech-language pathologists had the Certificate of Clinical Competence from the American Speech and Hearing Association.

General Procedures

Videotapes of one-minute language samples of ten children aged four years zero months to nine years six months were produced. The language samples consisted of one minute of continuous talking time. A stop watch was started when the child started talking and was stopped when the child stopped talking. One-minute language samples have been used successfully for screening in Language Learning Centers in Minnesota (Strong, 1977). Five of the children were diagnosed as language impaired by professional speech clinicians working with pre-school children in Language Learning Centers in Bemidji and Park Rapids, Minnesota. Five of the children exhibited normal linguistic development.

Two videotapes were used. The language samples of the children were arranged in random order in the second videotape to minimize an order effect on the tasks of using personal and selected criteria to judge the language performance of the children. Before the first videotape was shown the subjects were orally given the following instructions:

"You are going to see a videotape of ten children. Before you see the videotape I would like you to list the characteristics, parameters, and attributes of language that you use in determining whether a child's language is normal or impaired."

The instructions also appeared on the paper given to each subject to list his personal criteria (Appendix A). The subjects were given five minutes to list their criteria. The following instructions were given after five minutes:

"After you see each child on the videotape you will be given time to decide whether his language is normal or impaired according to your personal criteria. Please mark the appropriate box when you have made your decision."

One minute was allowed after the viewing of each language sample for the subjects to decide whether the language of the child just observed was normal or impaired. The answer was recorded on the second page of Appendix A. The personal criteria were collected by the investigator.

After the selected criteria (Appendix B) were distributed, the following instructions were given orally:

"Now, you will see the videotapes of the children again. This time, after you have seen each child, please rate him using the selected criteria you have been given."

The second videotape was shown and the children were rated using the selected criteria in Appendix B. The subjects were given one minute after viewing each child to rate performance of that child.

Rating scales have been used by investigators in the area of speech pathology to obtain information about speech disorders (Sherman and Goodwin, 1954; Morrison, 1955; Prather, 1960). The purposes of the present study were accomplished using an equal-interval scale ranging from a rating of one (language impaired) to seven (language normal).

Equipment

A Panasonic Model MV 3020 Videotape Recorder and Setchell-Carlson Monitor Model 2100SD were used to view the videotape. The equipment provided good reproductions of the children's performance.

CHAPTER III

RESULTS AND DISCUSSION

The purpose of the present study was to determine whether classroom teachers, speech clinicians, and public school speech-language pathologists judge child language performance differently when using personal criteria and when using selected criteria to screen child language performance.

The subjects viewed two videotapes of ten children, five of whom were language impaired and five of whom exhibited normal linguistic development. Before viewing the first videotape the subjects listed their personal criteria for determining whether a child's language performance is within normal limits or whether it is impaired. The subjects' personal cirteria appear in Appendix C. After viewing a single videotaped one-minute start/stop language sample for one child, the subjects indicated whether that child's language performance was normal or impaired. This procedure was continued until language samples of all ten children had been viewed. After viewing the second videotape in which the children's language samples were rearranged in a randomized order, the subjects rated each child's language performance using selected criteria. The personal criteria used to judge child language performance and the differences among the judgments of the three subject groups when using selected criteria to rate the language

performance of each child are presented and discussed in the present chapter.

Personal Criteria

The personal criteria listed by each subject group appear in Appendix C. Consistencies among the personal criteria permitted classification of the criteria into the following categories: I: Sound Production Criteria, II: Language Criteria, III: Voice Production Criteria, and IV: Fluency of Speech Production Criteria. In the following discussion, quotation marks are used to indicate a direct quotation by one subject.

Classroom teachers listed thirty-seven different criteria, nine of which were listed under Category I: Sound Production Criteria. Three teachers listed difficulty in understanding the child and pronunciation. Two teachers listed substitutions, distortions and omissions and one listed articulation of letters and blends. Three teachers listed lisping and two a "w" for "r" substitution. One listed "unusual speech patterns," one listed "accuracy in the ability to imitate sounds," and one listed "the way the child forms sounds."

The teachers listed fifteen criteria classified in Category II: Language Criteria. Four teachers mentioned a failure to use vocabulary appropriate to the age of the child, one listed a "limited vocabulary" receptively, and one teacher listed "association-child refers to an object with an incorrect term." Five teachers listed completeness of expression or using whole sentences and one teacher listed "the complexity of his language or sentence structure" and "whether the child omits necessary parts of speech . . . ." One teacher listed syntax

as a criterion. One teacher listed each of the following: "omitting short words such as a, an, and;" "omitting word beginnings or endings;" "excessive use of baby talk;" and the "language experience background." Receptive language ability was indicated in one teacher's listing of "understanding of directions." Other criteria were listed concerning the quantity and quality of language. One teacher listed "very little speech used (very little communication)." Another teacher listed "reply speech." Two teachers listed "can the child communicate well?" and one listed "communication with the peer group."

Three criteria were listed in the Category III: Voice Production Criteria. Two teachers mentioned volume, and one mentioned "voice projection." Two teachers mentioned tone-nasal or normal.

Three criteria were listed under Category IV: Fluency of Speech Production Criteria. Four teachers listed stuttering. One teacher listed "hesitation while speaking" and another listed "Is his/her speech obviously jangled, maladjusted or identifies child as maladjusted."

Seven criteria could not be classified within one of these four classifications. One teacher listed "appropriateness of message," one listed "physical appearance of child," and one listed "ability to hear." Each of the following criteria was provided by one teacher: "ease of speech," "attention to his own language," "reaction to other languge," and "body movement during speaking (hyperactivity)."

The subject group of ten student clinicians listed forty-three different criteria. Five criteria were classified under the category of sound production criteria. Three students listed the intelligibility of the child, one used the term "comprehensible," three listed

articulation, two listed phonology, and one student suggested using the Goldman-Fristoe Test of Articulation (Goldman and Fristoe, 1969) to test articulation of the child.

Twenty-six of the personal criteria listed by student clinicians were placed in Category II: Language Criteria. Six students listed syntax, four students listed semantics, and four listed morphology. Specific parts of speech were listed by several students: two listed nouns, four listed verbs, three listed prepositions, three listed pronouns, one listed "personal pronouns," two listed adjectives, two listed adverbs, and one mentioned "articles." One student listed "function words." One student listed the "length of utterance," one student referred to the "number of words used in a structure," one student alluded to "full sentences or phrases," and one student listed "sentence types." Each of the following criteria was provided by one student: "questions," "agreement in sentences or plurality," "grammatical proficiency," "is verbing," "past tense," and "negation." Two students listed comprehension of questions, and one listed "comprehension of directions."

Six students recommended using the Developmental Sentence Scoring procedure (Lee, 1974) to analyze the content of utterances, and four recommended the use of Developmental Sentence Types (Lee, 1974). One student suggested using the Peabody Picture Vocabulary Test (Dunn, 1959). One student listed morphological endings. One student mentioned "vocabulary normal for the age level," one listed "expressive abilities of the child to communicate his ideas" and one suggested "language appropriate to the mental age."

With reference to Category III: Voice Production Criteria and Category IV: Fluency of Speech Production Criteria, one student listed "voice quality" and one student listed "fluency."

Nine of the criteria listed by the student clinicians could not be classified in the four category system. Each of the following was listed by one student: "mental disabilities," "formal and informal methods of evaluation," "comprehension of basic concepts," "ease of obtaining a language sample," "auditory comprehension," and "adequate communication of ideas." Four students listed age of child, and two listed environmental factors.

The subject group composed of ten speech-language pathologists listed forty-one personal criteria for judging children's language. Three of these criteria were placed in Category I: Sound Production Criteria. Three speech-language pathologists listed articulation. Two added that they would look for errors that would indicate a possible hearing loss and one would also check for distinctive feature errors such as, "has not differentiated between voiced and unvoiced." Two speech-language pathologists listed phonology, and one listed four specific points: "developmental errors; cultural errors; organic errors; and development of vowel and consonant usage in young children." One speech-language pathologist listed the "cosmetic quality of articulation."

The speech-language pathologists listed twenty-one personal criteria under Category II: Language Criteria. Several of the criteria had several subheadings. Four speech-language pathologists listed semantics. Subheadings under semantics included: "personal and indefinite pronouns" listed by one speech-language pathologist; verbing,

mentioned by two speech-language pathologists; plurals suggested by five speech-language pathologists; "secondary verbs;" listed by one speech-language pathologist; conjunctions, listed by three speech-language pathologists; and wh-questions, listed by three speech-language pathologists. Three speech-language pathologists alluded to vocabulary and one added subheadings of "difficulty of words." Other specific parts of speech mentioned separately were: prepositions, listed by two speech-language pathologists; adverbs, listed by two speech-language pathologists; and adjectives, mentioned by two speech-language pathologists. Three speech-language pathologists listed morphological word endings.

Syntax was listed by five of the speech-language pathologists as one criterion for judging the normalcy of child language performance. One speech-language pathologist listed six subheadings: "simple, compound, complex, constructions, and one word." Two speech-language pathologists mentioned phrases, and two speech-language pathologists mentioned average sentence length. One speech-language pathologist listed "complete or incomplete sentences." Four speech-language pathologists alluded to the use of verb tenses and one speech-language pathologist added "in comparison to chronological age." Three speech-language pathologists listed the usage of other syntactic structures in relationship with the child's chronological age and two added pronouns- and noun-verb agreement specifically. In addition to the four speech-language pathologists who mentioned wh-questions specifically, one listed "the ability to ask questions." Three speech-language pathologists listed appropriate answers to questions. One alluded to

"ease in organizing thoughts into expressive language," one speech-language pathologist suggested "ability to describe events, people, or aspects of his life with great difficulty." Three mentioned expressive abilities. One speech-language pathologist listed "conversation appropriate to subject matter and setting." One speech-language pathologist listed "language samples in comparison to the child's age group," and another speech-language pathologist listed the "use of language in the classroom and at home." Three speech-language pathologists listed receptive abilities, and one listed "the ability to follow directions."

Two speech-language pathologists listed voice production criteria (Category III) as a characteristic they would include in judging child language performance as normal or impaired. Two listed Fluency of Speech Production, Category IV.

Fourteen items were listed that could not be classified in the four category system. One speech-language pathologist listed "physical impairment" and one speech-language pathologist listed "the use of gestures," and "eye contact." Three listed the child's attention span, and two mentioned cognitive development. One speech-language pathologist mentioned the "sequencing of events and personal experiences." One speech-language pathologist listed "pragmatics." Five speech-language pathologists listed basic concepts, three speech-language pathologists listed auditory discrimination skills, and four speech-language pathologists listed auditory memory. Each of the following was listed by one speech-language pathologist: "word recall-retrieval," "level of motor ability," and "written language." Two speech-language pathologists

listed reading ability and two speech-language pathologists listed environmental and socio-economic factors.

Several observations can be made concerning the personal criteria of the three subject groups. The classroom teachers listed more items in the area of Sound Production than did the student clinicians or the speech-language pathologists. Teachers listed nine different items in the area of sound production. Student clinicians listed five separate items in this area and speech-language pathologists listed three items in the area of sound production criteria. Student clinicians mentioned specific testing procedures which teachers and speech-language pathologists did not list. Some subjects in each group did not answer the question directly. Instead of listing criteria for judging a child's language performance, one speech-language pathologist stated, "Evaluate the child using formal testing which will determine the child's receptive and expressive abilities and compare these to children in his age group as well as his socio-economic structure. I would take language samples and do an analysis of these. If his results compared favorably to those of his age group, etc., therapy would not be necessary. However, if the child's scores were depressed, therapy would be indicated." Speech-language pathologists mentioned specific criteria and included items which indicated a relationship of language with other skills such as reading ability, and written language. Their understanding of a child's language performance covered a broader range of skills than did the understanding of the student clinicians who listed specific procedures for evaluation, and classroom teachers who used the child's speech as an indicator of language performance.

The second task performed by the subjects was to decide which children were language normal and which children were language impaired. These results of this task are provided in Table 1.

TABLE 1

A COMPARISON OF THE JUDGMENTS OF NORMALCY BY THE THREE SUBJECT GROUPS CONSIDERING THE LANGUAGE PERFORMANCE OF TEN CHILDREN

	Teachers		Student Clinicians		Speech-Language Pathologists	
	Normal	Impaired	Normal	Impaired	Normal	Impaired
Children with Language Impairment						
Johnny	0	10	0	10	0	10
Eric	1	9	1	9	0	10
Lorraine	0	10	0	10	0	10
Lori	3	7	1	9	1	9
Willie	10	0	8	2	7	3
Percent Correct		72%		80%		84%
Children without Language Impairment						
Angie	10	0	10	0	10	0
Melanie	8	2	9	1	10	0
John	10	0	10	0	8	2
Roxanne	10	0	10	0	9	1
Tom	9	1	9	1	10	0
Percent Correct	94%		96%		94%	

Classroom teachers were correct in their judgments of children with language impairments at a rate of 72 percent (thirty-six of fifty judgments) correct. Student clinicians judged children with language impairment correctly at a rate of 80 percent (forty of fifty judgments),

and speech-language pathologists judged children with language impairments correctly at a rate of 84 percent (forty-three of fifty judgments).

Ninety-four percent (forty-seven of fifty) of the judgments of classroom teachers were correct concerning children without language impairments. Ninety-six percent (forty-eight of fifty) of the judgments of student clinicians were correct concerning children without language impairment. Ninety-four percent (forty-seven of fifty) of the judgments of speech-language pathologists were correct concerning children without language impairment. Speech-language pathologists appear to be slightly more accurate in selecting children with language impairment than the other two subject groups. The three subject groups selected the children without language impairment equally well. The combined groups judged children with language impairment at a rate of 79 percent (118 of 150 judgments) correct. The combined groups judged children without language impairment at a rate of 95 percent (142 of 150 judgments) correct.

Selected Criteria

The means of the rating scale judgments of the three subject groups using the selected criteria (Appendix B) are presented in Tables 2 and 3. The criteria on which subject judgments were made are abbreviated in Tables 2 and 3 in the following manner: Noun phrase structure, verb phrase structures, use of word meanings, vocabulary, accurate sounds, intelligible speech, appropriate sounds, spontaneous speech, quality of speech, and normal language performance.

TABLE 2

MEANS OF THE RATING SCALE JUDGMENTS OF THE THREE SUBJECT GROUPS USING SELECTED CRITERIA TO CONSIDER THE LANGUAGE PERFORMANCE OF FIVE CHILDREN WITH LANGUAGE IMPAIRMENT

	Criteria	Johnny	Eric	Lorraine	Lori	Willie
1.	noun phrase structures					
	Teachers-Mean	3.50	3.60	2.30	4.50	4.80
	Students-Mean	2.80	3.00	2.70	3.50	4.00
	Speech-language Pathologists-Mean	4.10	2.60	1.40	3.90	4.00
2.	verb phrase structures					
	Teachers-Mean	3.50	2.40	2.50	4.30	4.80
	Students-Mean	2.70	2.30	2.20	3.10	3.40
	Speech-language Pathologists-Mean	3.40	1.70	1.40	3.40	3.40
3.	use of word meanings					
	Teachers-Mean	3.80	3.80	3.60	4.90	4.60
	Students-Mean	4.30	4.20	3.80	4.90	4.50
	Speech-language Pathologists-Mean	5.00	2.60	2.60	3.70	4.40
4.	vocabulary					
	Teachers-Mean	3.00	2.80	2.10	3.60	4.80
	Students-Mean	3.40	4.00	3.40	3.50	4.60
	Speech-language Pathologists-Mean	3.40	2.10	1.90	2.90	4.30
5.	accurate sounds					
	Teachers-Mean	1.40	3.10	1.80	3.00	5.20
	Students-Mean	2.90	4.60	4.40	4.60	5.10
	Speech-language Pathologists-Mean	2.40	5.10	5.10	4.80	5.60

TABLE 2--Continued

Criteria	Johnny	Eric	Lorraine	Lori	Willie
6. intelligible speech					
Teachers-Mean	1.90	3.70	2.00	3.60	4.70
Students-Mean	2.80	5.10	4.10	5.40	4.70
Speech-language Pathologists-Mean	2.70	1.03	1.81	1.41	1.18
7. appropriate sounds					
Teachers-Mean	1.70	2.70	2.00	2.60	5.20
Students-Mean	2.90	4.20	4.60	4.50	5.20
Speech-language Pathologists-Mean	2.80	4.70	4.80	5.10	5.90
8. spontaneous speech					
Teachers-Mean	3.00	2.90	2.60	4.20	5.10
Students-Mean	2.90	1.57	0.82	1.32	1.35
Speech-language Pathologists-Mean	2.20	3.60	1.70	3.80	5.20
9. quantity of speech					
Teachers-Mean	2.30	2.40	1.40	3.40	5.00
Students-Mean	3.10	3.80	2.60	4.50	5.60
Speech-language Pathologists-Mean	2.10	4.20	1.30	3.90	5.30
10. normal language performance					
Teachers-Mean	1.80	2.30	2.00	2.90	4.80
Students-Mean	2.80	2.50	2.40	3.20	4.10
Speech-language Pathologists-Mean	2.70	2.00	1.20	2.80	4.20

A multivariate analysis of variance procedure using the Wilk's Lamda Criterion was employed to analyze the judgments of the three subject groups. The results are reported in Table 4. The subject

groups differed significantly in their overall judgments of only three children, all of whom exhibited language impairment. The groups differed significantly on their judgment of Johnny (F 2.44; df [hyp] = 20; df [err] = 36; F probability $\leq$ 0.001), Eric (F 1.80; df [hyp] = 20; df [err] = 36; F probability $\leq$ 0.07), and Lorraine (F 3.37; df [hyp] = 20; df [err] = 36; F probability $\leq$ 0.001). There were no significant differences among the judgments of the three subject groups using the selected criteria to rate Lori and Willie, who were children with language impairment, and to rate Angie, Melanie, John, Roxanne, and Tom, who were children without language impairment.

A list of the selected criteria on which judgments among the three subject groups differed significantly on the performance of individual children is presented in Table 5. The subject groups differed significantly (p = .018) on the criterion of accurate sounds produced by Johnny. Significant differences were found on four selected criteria judged by the three subject groups on Eric. The selected criteria which were significantly different were vocabulary (p = .011), accurate sounds (p = .014), intelligible speech (p = .011), and appropriate sounds (p = .039). Significant differences were found on six selected criteria judged by the three subject groups on Lorraine. The selected criteria which were significantly different at the .05 level of significance were vocabulary (p = .029), accurate sounds (p = .001), intelligible speech (p = .001), appropriate sounds (p = .001), quantity of speech (p = .003), and normal language performance (p = .001).

TABLE 3

MEANS OF THE RATING SCALE JUDGMENTS OF THE THREE SUBJECT GROUPS USING SELECTED CRITERIA TO CONSIDER THE LANGUAGE PERFORMANCE OF FIVE CHILDREN WITHOUT LANGUAGE IMPAIRMENT

Criteria	Angie	Melanie	John	Roxanne	Tom
1. noun phrase structures					
Teachers-Mean	6.60	5.60	6.20	6.80	6.60
Students-Mean	6.10	5.80	6.20	7.00	6.50
Speech-language Pathologists-Mean	6.60	6.50	5.70	6.50	6.40
2. verb phrase structures					
Teachers-Mean	6.60	5.00	6.20	6.70	6.50
Students-Mean	6.20	5.40	6.00	6.90	6.50
Speech-language Pathologists-Mean	6.40	5.90	5.30	6.50	6.10
3. use of word meanings					
Teachers-Mean	6.50	4.90	5.70	6.90	6.50
Students-Mean	6.60	5.60	6.00	6.90	6.60
Speech-language Pathologists-Mean	6.60	5.90	5.20	6.40	6.20
4. vocabulary					
Teachers-Mean	6.60	6.00	6.30	6.80	6.80
Students-Mean	6.60	5.80	6.20	7.00	6.60
Speech-language Pathologists-Mean	6.50	6.20	5.40	6.50	6.00
5. accurate sounds					
Teachers-Mean	6.60	6.30	6.20	6.90	6.10
Students-Mean	6.20	6.50	6.50	6.70	6.20
Speech-language Pathologists-Mean	6.50	6.10	5.60	6.30	6.10

TABLE 3--Continued

Criteria	Angie	Melaine	John	Roxanne	Tom
6. intelligible speech					
Teachers-Mean	6.50	5.90	6.20	6.50	6.70
Students-Mean	6.70	6.40	6.60	6.80	6.10
Speech-language Pathologists-Mean	6.60	6.70	6.40	6.50	6.50
7. appropriate sounds					
Teachers-Mean	6.60	6.20	6.20	6.70	6.50
Students-Mean	6.70	6.40	6.70	6.90	6.40
Speech-language Pathologists-Mean	6.60	6.50	6.20	6.60	6.50
8. spontaneous speech					
Teachers-Mean	6.60	6.00	5.90	6.50	6.80
Students-Mean	6.60	6.00	6.20	6.90	6.70
Speech-language Pathologists-Mean	6.20	5.90	5.10	6.20	6.10
9. quantity of speech					
Teachers-Mean	6.60	6.20	5.70	6.50	6.70
Students-Mean	6.40	6.20	6.30	6.90	6.70
Speech-language Pathologists-Mean	6.20	6.50	6.40	6.10	5.90
10. normal language performance					
Teachers-Mean	6.70	5.60	6.20	6.80	6.70
Students-Mean	6.50	6.10	6.30	6.90	6.60
Speech-language Pathologists-Mean	6.50	6.40	6.10	6.60	6.20

TABLE 4

ANALYSIS OF VARIANCE AMONG SUBJECT GROUPS USING TEN SELECTED CRITERIA TO JUDGE CHILD LANGUAGE PERFORMANCE

Child	F	df hyp	df err	F probability
	Children with Language Impairment			
Johnny	2.439	20	36	0.010[a]
Eric	1.795	20	36	0.062[a]
Lorraine	3.373	20	36	0.001[a]
Lori	1.364	20	36	0.204
Willie	1.306	20	36	0.237
	Children without Language Impairment			
Angie	1.206	20	36	0.304
Melanie	1.500	20	36	0.141
John	0.925	20	36	0.563
Roxanne	1.038	20	36	0.448
Tom	1.082	20	36	0.407

[a]Probability $\leq .10$ was accepted as revealing significant differences among groups.

Three children for whom overall judgments were not significantly different did differ significantly on selected criteria. The subject groups differed significantly in their judgment of Lori, a language-impaired child, on the selected criteria of intelligible speech ($p = .034$), and appropriate speech ($p = .005$). The judgments of the three subject groups differed significantly on the selected criteria of use of word meanings ($p = .011$), spontaneous speech ($p = .038$), and quantity of speech ($p = .044$) for Roxanne, a child without language impairment. The judgments of the three subject groups differed significantly on the selected criteria of vocabulary ($p = .050$), and quantity of speech ($p = .035$), for Tom, a child without language impairment.

TABLE 5

A LIST OF THE SELECTED CRITERIA PERFORMED BY INDIVIDUAL CHILDREN ON WHICH JUDGMENTS AMONG THE THREE SUBJECT GROUPS DIFFERED SIGNIFICANTLY

Child	Selected Criteria	Significance Level
Johnny	accurate sounds	0.018
Eric	vocabulary	0.011
	accurate sounds	0.014
	intelligible speech	0.018
	appropriate sounds	0.039
Lorraine	vocabulary	0.029
	accurate sounds	0.001
	intelligible speech	0.001
	appropriate sounds	0.001
	quantity of speech	0.003
	normal language performance	0.001

Significant at the .05 level.

Discussion of Results

Having viewed the first videotape, the three subject groups consistently judged Johnny, Eric, and Lorraine to be language impaired. The subjects were unanimous in their judgment of Johnny and Lorraine as language-impaired children. Twenty-eight of thirty subjects identified Eric as a language-impaired child. Lori, the fourth language-impaired child, was correctly identified as language impaired by twenty-four of the thirty subjects. Only five of thirty subjects identified Willie as language impaired using personal criteria after viewing the first videotape.

After viewing the second videotape and while using the selected criteria to rate the language performance of the children, significant differences were noted among the judgments of the subject groups. Overall significant differences were observed in the judgments of Johnny, Eric, and Lorraine indicating disagreement on the degree of severity of the language impairment of Johnny, Eric and Lorraine. Combining the results of Table 1 and Table 4, it appears that the subject groups were able to agree on Johnny, Eric, and Lorraine as being language impaired but subject group judgments differed significantly as to the severity of the impairment.

There was not an overall significant difference among the subject groups in their rating of Lori's language performance using selected criteria. This finding reveals that the subject groups did not differ in their overall judgments of severity of language impairment. However, the subject groups did differ significantly in their rating of two of ten individual criteria: intelligible speech and appropriate speech.

Using the ten selected criteria, there was not a significant difference among the overall judgments of the perceived normalcy of Willie's language performance.

The subject groups were not accurate in their judgments of language-impaired children. Three of the five language-impaired children were judged to be language impaired, but the subject groups disagreed on the degree of severity of the impairment. Two of the language impaired children were not consistently judged to be language impaired and the subject groups did not disagree on the degree of severity.

There are several possible reasons for the subjects' failures to identify correctly the children with language impairments. For example, the judgments of Willie's performance were almost completely incorrect. When he appeared on the videotape, Willie told a story using a book. He appeared to be familiar with the book and responded readily to the speech-language pathologist's questions. The one-minute start/stop language samples may not have been an adequate sample of this child's language.

A second variable possibly contributing to the inaccuracy of subject judgment involves the videotaped medium. A videotape does not provide the same visual information as does a personal interview with a child.

A third variable in the present study was that the language samples were not all elicited using the same materials and procedures. Two of the children told stories while looking at books, two described puppets or dolls, one used pictures, and five had no stimulus materials. The use of standardized materials to collect language samples has been investigated previously by Lee (1974). The effect of language samples collected under different conditions has been investigated by Longhurst and Grubb (1974).

A fourth variable was that three different speech-language pathologists elicited the language samples. The skill of the three speech-language pathologists in eliciting samples varied.

The three subject groups were able to identify correctly the children with normal language development using their personal criteria. The three subject groups agreed unanimously that Angie was not language

impaired. Twenty-nine of thirty subjects agreed that Roxanne was not language impaired. Twenty-eight of thirty subjects agreed that John and Tom were not language impaired, and twenty-seven of thirty subjects agreed that Melanie was not language impaired. When using the selected criteria, no overall significant differences were noted among the three subject groups' ratings of child language performance. Therefore, the subject groups were more consistent in their judgments of children without language impairments than in their judgments of children with language impairments.

The classroom teachers listed more personal criteria in the sound production category that the student clinicians or speech-language pathologists did. When using the selected criteria, a comparison of the mean ratings of the classroom teachers rated Johnny, Eric, and Lorraine at an equal or lower level on the items of accurate sounds, intelligible speech, and appropriate sound than did the student clinicians or speech pathologists. The classroom teachers seemed to use Sound Production Criteria as an indication of language impairment or normalcy.

Recommendations for Further Research

Further research is needed to determine whether the use of one-minute start/stop language samples is a valid and reliable procedure for screening the linguistic performance of children with language impairment. Further research concerning the validity and reliability of one-minute start/stop language should control the variables of the effect of using videotaped medium, a variety of

materials, and the effect of the skill of the speech-language pathologist collecting the language sample.

CHAPTER IV

SUMMARY AND CONCLUSIONS

It was the purpose of the present study to determine whether classroom teachers, student clinicians, and public school speech-language pathologists judge child language performance differently when using personal criteria and when using selected criteria to screen child language performance.

The subjects viewed videotapes of five language-impaired children and used personal criteria and selected criteria to judge the children's language performance.

Based on an analysis of the data obtained, the following conclusions were drawn:

1. There were consistencies among the personal criteria used by the classroom teachers, student clinicians, and speech-language pathologists when judging child language performance as normal or impaired.
2. There were significant differences among the three subject groups in their rating of the language performance of three of the five language impaired children (Johnny, Eric, and Lorraine) when using selected criteria.
3. The subject groups did not accurately judge the nature of the language performance of two of the five language-impaired

children. The subject groups did not differ significantly on their ratings of these two children.

4. The subject groups accurately judged the language performance of the linguistically normal children.
5. The classroom teachers used the child's sound production as an important element in their judgment of the child's language performance.
6. Under the conditions of the present study, that is, videotaped one-minute start/stop language samples with language performance being judged on the basis of personal and selected criteria, the three subject groups did not accurately identify language-impaired children (79 percent correct judgments) but were successful in identifying language normal children (94 percent correct judgments).

APPENDIX A

PERSONAL CRITERIA

You will see a videotape of ten children. Before viewing the videotape, please list the characteristics, parameters, and attributes of language that you use in determining whether a child's language is normal or impaired.

	language normal	language impaired
Child 1	☐	☐
Child 2	☐	☐
Child 3	☐	☐
Child 4	☐	☐
Child 5	☐	☐
Child 6	☐	☐
Child 7	☐	☐
Child 8	☐	☐
Child 9	☐	☐
Child 10	☐	☐

APPENDIX B

SELECTED CRITERIA

1. Are noun phrase structures used appropriately for the child's age?

language impaired — language normal

2. Are verb phrase structures used appropriately for the child's age?

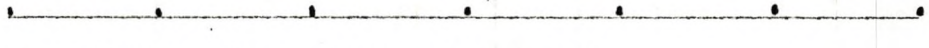
language impaired — language normal

3. Does the child use word meanings appropriately?

language impaired — language normal

4. Is the child's vocabulary appropriate for his age?

language impaired — language normal



5. Does the child produce sounds accurately?

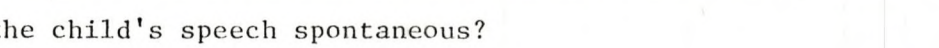
language impaired — language normal

6. Is the child's speech intelligible?

language impaired — language normal

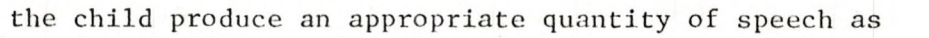
7. Does the child produce sounds appropriately for his age?

language impaired — language normal



8. Is the child's speech spontaneous?

language impaired — language normal



9. Does the child produce an appropriate quantity of speech as required in the situation?

language impaired — language normal

10. Is his language performance within normal limits for his age?

language impaired — language normal

APPENDIX C

PERSONAL CRITERIA OF SUBJECT GROUPS

TABLE 6

PERSONAL CRITERIA OF CLASSROOM TEACHERS

Category and Criteria	Number of Teachers Listing Criteria
I. Sound Production Criteria	
1. lisping	3
2. difficulty understanding the child--clarity	3
3. pronunciation	3
4. w/r substitution	2
5. substitutions, distortions, omissions	2
6. unusual speech patterns	1
7. accuracy--ability to imitate sounds	1
8. way child forms sounds	1
9. articulation of letters--also blends	1
II. Language Criteria	
1. completeness of expression--uses whole sentences	5
2. failure to use vocabulary appropriate to age group	4
3. overall, can child communicate well	2
4. very little or no speech used (very little communication)	1
5. speech is reply speech	1
6. syntax	1
7. communicates with peer group	1
8. understanding of directions	1
9. limited vocabulary--if asked to perform a task child does not understand and/or performs what you did not ask	1

TABLE 6--Continued

Category and Criteria	Number of Teachers Listing Criteria
10. association--child refers to an object with an incorrect term	1
11. depending on the child's age the complexity of his language or sentence structure--telegraphic speech at age 5	1
12. excessive use of baby talk	1
13. omitting word beginnings or endings	1
14. omitting short words such as a, an, and	1
15. language experience background	1
III. Voice Production Criteria	
1. volume	2
2. tone--nasal or normal	2
3. voice projection	1
IV. Fluency of Speech Production Criteria	
1. stuttering	4
2. is his/her speech obviously jangled, maladjusted, or rather identifying him/her as maladjusted	1
3. hesitation while speaking	1
V. Unclassified Personal Criteria	
1. appropriateness of message	1
2. physical appearance of child--teeth, lips, face	1
3. ability to hear--notice if instructions have to be repeated	1

TABLE 6--Continued

Category and Criteria	Number of Teachers Listing Criteria
4. ease of speech	1
5. attention to his own language	1
6. reaction to others language	1
7. body movement during speaking (hyperactivity)	1

TABLE 7

PERSONAL CRITERIA OF STUDENT CLINICIANS

Category and Criteria	Number of Students Listing Criteria
I. Sound Production Criteria	
1. intelligible	3
2. articulation	3
3. phonology	2
4. comprehensive	1
5. articulation test (Goldman-Fristoe Test of Articulation)	1
II. Language Criteria	
1. syntax	6
2. content of utterances measured by:	
Developmental Sentence Scoring	6
Developmental Sentence Types	5
3. semantics	4
4. morphology	4
5. past tense--regular and irregular	4
6. parts of speech developed	
verbs	4
prepositions	3
pronouns	3
nouns	2
7. comprehension of questions	2
8. is verbing	2
9. adjectives	2
10. adverbs	2
11. expressive abilities of the child to communicate his ideas	1

TABLE 7--Continued

Category and Criteria	Number of Students Listing Criteria
12. questions	1
13. length of utterances	1
14. language appropriate to mental age	1
15. vocabulary normal for age level	1
16. number of words used in a structure	1
17. agreement in sentence--plurality	1
18. comprehension of directions	1
19. use of function words	1
20. grammatical proficiency	1
21. full sentences or phrases	1
22. language test (Peabody Picture Vocabulary Test)	1
23. personal pronouns	1
24. sentence types	1
25. morphological endings	1
26. articles	1
27. negation	1
III. Voice Production Criteria	
1. voice quality	1
IV. Fluency of Speech Production Criteria	
1. fluency	1

TABLE 7--Continued

Category and Criteria	Number of Students Listing Criteria
V. Unclassified Personal Criteria	
1. age of child	4
2. environmental factors	2
3. mental disabilities	1
4. formal methods of evaluation	1
5. informal methods of evaluation	1
6. comprehension of basic concepts	1
7. ease of obtaining a language sample	1
8. auditory comprehension	1
9. adequate communication of ideas	1

TABLE 8

PERSONAL CRITERIA OF SPEECH-LANGUAGE PATHOLOGISTS

Category and Criteria	Number of Speech-Language Pathologists Listing Criteria
I. Sound Production Criteria	
1. articulation	3
possible hearing loss	2
distinctive feature errors	1
2. phonology	2
developmental errors	1
cultural errors	1
organic errors	1
development of vowel and consonant usage in young children	1
3. cosmetic quality of articulation	1
II. Language	
1. syntax	5
simple	1
compound	1
complex	1
phrases	2
constructions	1
one word	1
2. usage of other syntactic structures in relationship with child's chronological age	
plurals	5
pronouns	2
noun and verb agreement	2
3. use of verb tenses in comparison to chronological age	4

TABLE 8--Continued

Category and Criteria	Number of Speech-Language Pathologists Listing Criteria
4. semantics	4
wh-questions	4
conjunctions	3
verbing	2
pronouns--personal, indefinite	1
secondary verbs	1
5. receptive abilities	3
6. expressive abilities	3
7. morphological word endings	3
8. vocabulary	3
difficulty of words	1
categories used	1
9. average sentence length	2
10. prepositions	2
11. adverbs	2
12. adjectives	2
13. ease of organizing thoughts into expressive language	1
14. ability to ask questions	1
15. ability to describe events, people, or aspects of his life with great difficulty	1
16. language samples in comparison to the child's age group	1
17. conversation appropriate to subject matter and setting	1
18. ability to follow directions	1

TABLE 8--Continued

Category and Criteria	Number of Speech-Language Pathologists Listing Criteria
19. appropriate answers to questions	1
20. use of language in classroom and at home	1
21. complete or incomplete sentences	1
III. Voice Production Criteria	
1. voice	2
IV. Fluency of Speech Production Criteria	
1. fluency	2
V. Unclassified Personal Criteria	
1. basic concepts	5
2. auditory memory	4
3. attention span	3
4. auditory discrimination skills	3
5. cognitive development	2
6. reading ability	2
7. environmental, socioeconomic	2
8. physical impairment	1
9. sequencing of events and personal experiences	1
10. use of gestures and eye contact	1
11. pragmatics	1
12. word recall--retrieval	1
13. level of motor ability	1
14. written language	1

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