EFFECTS OF A PRESCHOOL PROGRAM ON PSYCHOLINGUISTIC ABILITIES OF CULTURALLY DEPRIVED CHILDREN

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EFFECTS OF A PRESCHOOL PROGRAM ON PSYCHOLINGUISTIC ABILITIES OF CULTURALLY DEPRIVED CHILDREN

THESIS

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By

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CHAPTER I
INTRODUCTION

Other than for his physical appearance, his relative lack of hair, his erect stature and oppositional thumb, the most obvious feature of man which distinguishes him from other animals is his speech and language development. This feature, making possible higher order communication with his fellows and, with the development of written language, the storage and retrieval of knowledge and experience, is an integral part of man, his history, and his accomplishments.

Hayakawa states:

Language . . . is the indispensible mechanism of human life - of life such as ours that is molded, guided, enriched, and made possible by the accumulation of the past experience of members of our own species. . . .

To be able to read and write, therefore, is to learn to profit by and take part in the greatest of human achievements - that which makes all other achievements possible - namely, the pooling of our experiences in great cooperative stores of knowledge (13, pp. 13-14).

A culture or a civilization, by definition, depends upon the transference of its accumulated experience from one generation to the next. As the great civilizations arose, and more importantly, where there was a written heritage to transmit, formal education came into being. Education in the early school years is, in effect, synonymous with instruction in those basic language skills of reading and writing which
provide the foundation for all of the individual's subsequent formal, and much informal, learning.

At times over the years, there have been varying degrees of emphasis upon the "whole child," upon social adjustment and other more specific, but peripheral, goals for education. However, while the importance of physical health and social and emotional adjustment to the learning process has been recognized to an extent, the school's primary purpose has remained the transmittal of language skills and of those "great cooperative stores of knowledge" communicated by and available through man's language. Success and achievement in school are measured principally by progress and accomplishment in the traditional academic areas of reading, writing, and arithmetic, i.e., in language competencies. Not only a child's school success, but to a large degree his later course in life will be determined by the adequacy of his verbal abilities--by his capacity for and development of verbal communication, both oral and written, receptive and expressive.

Lambert (22) observes that from its beginnings psychology has considered language and language learning as matters falling within its field of study. Within the last twenty or twenty-five years, he sees renewed and broadened interest in language, stemming from advances in neurology, in statistical and experimental procedures, in design and operation of computers, and in methods of language teaching.
Johnson and Myklebust (18) postulate three basic integritys as necessary for normal learning: psychodynamic factors, including identification, imitation and internalization; peripheral nervous system functions, of which sight and hearing are the most important to learning; and central nervous system functions. These authors recognize sociocultural factors by stating that a disadvantaged child, one lacking opportunity, will be deficient in various kinds of learning. It is necessary to consider more closely, however, what actually happens when a child learns to say words and to put them in sentences, and the effects of cultural disadvantage upon language development and school performance.

From the earliest days of a child’s life, speech activity accompanies behavior. However, Hakes (11) notes that some authorities question whether babbling can be considered the "true" beginning of language, or if there might be some kind of "break" between the babbling stage and what might be called true language.

Eisenon, Auer and Irwin (6) feel that most scholars in the field of linguistics—the study of the form, structure and functions of a language—do not seem concerned with distinguishing language from speech, while scholars in the field of speech generally tend to distinguish between language as a system of symbols and speech as a form of human behavior employing a symbol (language) system. Vocal (tonal), oral (articulatory), and pantomimic mechanisms (gestures) are
identified by these authors as the three components of speech. A child's control over his vocal and articulatory mechanisms begins to develop during the babbling stage.

Regardless of the definition of true language, the learning process is one of continuing, unbroken interaction between the child and his environment. Hakes (11, p. 220) cites Tischler's findings that during the babbling stage, the infant makes sounds which do not occur in his native language. For instance, he states that the child of English-speaking parents will make umlauted vowel sounds, rolling "r's," and even sounds produced with the intake of breath rather than its expulsion. Later, these sounds disappear. Using B. F. Skinner's theory (30) of the selective reinforcement of random sounds, Hakes suggests that parents and others around the child, through attention, affection, talking with the child and supplying food, reward and reinforce those sounds that most resemble sounds in the native language. The non-rewarded, "foreign" sounds drop out. As the child makes more and more sounds that more closely resemble words, the parents ever more selectively reinforce and strengthen appropriate sounds. The child makes ever finer distinctions about what sound or word is appropriate to a specific object, and therefore more likely to be rewarded.

Osgood (27'), whose major work has been concerned with the semantic meaning of words, has extended classical conditioning theory to explain how signs (words) become attached
to significates (objects). He postulates a two-stage process involving

1. Decoding, the association of signs with representational mediators (interpretation).

2. Encoding, which is the association of the mediated self-stimulation with overt instrumental sequences (expression of ideas).

Osgood's proposition states:

A pattern of stimulation which is not the significate is a sign of that significate if it evokes in the organism a mediating process, this process (a) being some fractional part of the total behavior elicited by the significate and (b) producing responses which would not occur without the previous contiguity of non-significate and significate patterns of stimulation.(27, p. ?). In other words, it is some portion of the emotional or behavioral reaction evoked by the actual object, or referent, which is transferred to the symbol. This response, habitually made in the presence of the object and the symbol, is referred to as the "representational mediator," and over a period of time, comes to constitute the meaning of the symbol.

From both of these views of language learning, it follows that the early home environment, the preschool years, will be of crucial importance in the child's speech and language development, not only in the number of words that he knows and the meanings he gives them, but in grammatical and syntactical structure also. Such structure is developed by the observation (auditory observation) and practice of creating sentences. Some authorities state that by the time a child
begins school, he will have learned most of the grammatical rules of his language (11, p. 223).

A large body of evidence suggests that the degree and kind of stimulation which the environment provides, the degree and kind of reinforcement for verbal behavior which the child receives, and the linguistic patterns which the child hears around him and imitates, provide the major influences in his language development, and thus accelerate or impede learning. It has been the growing awareness and admission of environmental and socio-economic factors affecting language development, school readiness and achievement, as well as social adjustment and attitudes toward the school, that have brought about concentrated efforts on the part of education and government to help bridge the gap between these disadvantaged children and their more advantaged agemates. This has led to renewed interest in early childhood education and the establishment of preschool programs to "serve as an 'antidote to cultural deprivation'" (28, p. 174).

Conventionally, the beginning of formal education has been associated with the chronological age of six years, when a child has been assumed to be sufficiently mature, "ready," for the acquisition of basic reading and writing skills. There has been some evidence to support this assumption. Kimble and Garmezy (19, p. 426) cite an early study by Morphett and Washburn (1931) which indicated that up to a mental age of about six years, children could not
benefit from reading instruction, while at an MA of about six and a half years children learned to read about as well as at a higher MA. In other words, there appeared to be a readiness for reading at an MA of six to six and a half years. It is important to note that this study relates such readiness to mental age, not chronological age. If one postulates a normal curve of distribution for mental ages of six year old children, some sixty-eight percent of these might be expected to demonstrate an "average" level of readiness for traditional academic instruction. However, even within this "average" range there is room for wide variation and individual differences. Ilg and Ames point out that the age criterion for school entrance "favors the older age allowed by a September 1 deadline and does not allow for the fact, generally accepted, that the development of boys in this age range is slower than that of girls" (16, p. 16).

Hunt (15), in a far-ranging paper, presents several theories or "beliefs" which have influenced educational attitudes and practices, together with some empirical data on which they have been based. One of these is the belief in fixed intelligence, whose conceptual roots Hunt finds in the work of Charles Darwin and his younger cousin, Sir Francis Galton. Cattell, Hall, Goddard, Kuhlman, Anderson, and Terman are named as most instrumental in spreading this belief to others in the testing movement in America. Another of these beliefs is that in predetermined development. Again,
Darwinian theory supplies the basis for this belief. Hunt attributes to Hall and his application of evolutionary theory to human behavior much of the responsibility for the direction of child and developmental psychology in the first half of this century. Gesell's work is also seen as contributing to the idea of predetermined stages of development and to its wide acceptance. Other beliefs seen by Hunt as hampering the recognition of the importance of very early experiences are: a belief in the fixed, static, "switchboard" nature of the brain; a belief in the unimportance of experience prior to the development of speech; a belief in the emotional rather than cognitive impact of early experience; a belief that homeostatic needs, painful stimulation or acquired drives based on these must motivate learning. Hunt questions all of these ideas and presents evidence in their refutation. He feels that these "beliefs" are no longer tenable, and are changing as evidence accumulates in support of early cultural and environmental deprivation as being of crucial importance in both cognitive and affective development.

The previously cited work by Ilg and Ames (16) establishes developmental expectations for school readiness tasks. Though their studies are based upon the concept of "predetermined stages of development" which Hunt questions, the authors state that they have repeatedly revised their "blueprints" over the years. They feel that "striking growth changes do occur, that a child does move through stages—some better,
some worse" (16, p. 7). Their normative groups of children were from homes of the professional, semiprofessional, managerial, clerical, skilled, and retail business socio-economic levels. Mean intelligence scores for the three groups were 118, 109.7, and 105.4 (16, p. 365). Data are lacking relative to the use of their developmental evaluation with other children from lower socio-economic or disadvantaged groups.

Most schools utilize a standardized test of learning readiness administered soon after first grade enrollment. Such a test, like the Metropolitan Readiness Test (14), assesses verbal comprehension of words, phrases and sentences, recognition of letters, number concepts, and perceptual-motor abilities. Such abilities will depend not only upon physical and mental growth, but upon the stimulation, reward and reinforcement, and model for speech and language which the home and cultural environment have provided. Evidence suggests that as a whole, children from the lower socio-economic and minority groups perform poorly on standardized tests of intellectual functioning and academic aptitude. An article by Fishman, and others, reprinted by Passow, Goldberg, and Tannenbaum (9), points up some of the issues involved in the use of standardized tests with minority group children. Difficulties include the following:

1. Possible unreliable differentiation in the range of the minority group's scores.

2. Possible different predictive validity for minority
groups than that for the standardization or validation groups.

3. The dependence of the validity of interpretation on an adequate understanding of the social and cultural background of the group in question.

The editors comment:

Standardized tests, including intelligence and aptitude measures, are "among the most important evaluative and prognostic tools that educators have at their disposal." However, they are too often used "routinely and mechanically" as indicators of "fixed levels of either performance or potential" rather than as diagnostic tools in planning remediation (28, p. 156).

One of the largest minority groups in this country at the present time is the Mexican-American population, and another area of culture-language-school interaction which is relevant to the present study concerns the Mexican-American, Spanish-speaking child in the English-speaking school. Data indicate that socio-economic level and cultural deprivation have a significant effect upon language development and school performance, but when the child involved has learned a different first language in his home, his difficulties upon entering the English-speaking, middle-class oriented school will certainly be compounded.

Zobel (33) reports that of all the ethnic groups in the Southwest, including Negroes, Mexican-Americans are the least successful in preventing their children from dropping out of school. Some of the problems encountered by these children involve not only language and academic difficulties, but parental attitudes toward the school and majority culture,
and lack of awareness on the part of teachers of the cultural background of the students and differing cultural behavior expectations.

One might also add that teachers and others who are unfamiliar with the child's culture and language are often not aware that the words which they use may not have the same meaning in the child's culture, or perhaps have no direct equivalents in his language. Osgood's semantic differential (27) has been used to investigate differences in word meaning among various groups of people and various cultures. One can find examples in many languages which on the surface appear to indicate differences in the way a language group perceives events. In Spanish, some of the commonly cited examples include those of the clock which "walks" (anda), as opposed to the English statement that a clock "runs," suggesting a difference in the perception of time, and that of the train or bus which "leaves me," as opposed to the English, "I missed the train," suggesting a difference in the concept of individual responsibility.

There are also subjective reports from bilinguals that attest to a different "feel" of specific languages. Einar Haugen (12, l. 396) cites the memoirs of several bilinguals. One writer, Lowie, said, "The popular impression that a man alters his personality when speaking another tongue is far from ill-grounded. When I speak German to Germans, I automatically shift my orientation as a social being." Haugen
also tells of a French-born American writer, Julian Green, who failed in an attempt to translate one of his own books from French to English and had to write an entirely new book in English. He stated, "It was as if, writing in English, I had become another person."

Psychologists and linguists have proposed and investigated two different systems of bilingualism. These are the "compound" and the "coordinate" (Ervin and Osgood, 7; Lambert, 22; Fishman, 8). A compound system may be said to exist where two languages have been learned in the same social-cultural context. In this system, the two languages will be more interdependent, factors affecting speech and language functions will affect both languages, and there will be fewer semantic differences. A coordinate system develops where the languages have been learned in different cultural contexts. A coordinate bilingual will be better able to keep his two languages functionally independent and semantic differences will be more pronounced. In a coordinate system, if the individual is equally proficient in both of his two languages, he may be able to think in either of them. Fishman states:

In popular terminology, the compound bilingual thinks in one language and translates into the other, while the coordinate bilingual thinks in whichever language he is using at the moment. More precisely, the compound bilingual has two fused language systems, while the coordinate has two discrete ones. The distinction is not absolute; a great many bilinguals have a system and a half, partly compound and partly coordinate (8, p. 235).
It may be that the intensity of the subjective impressions reported previously, of shifting one's "orientation as a social being" or becoming "another person," depends primarily upon the kind of bilingual system which the individual has developed. The more discrete and independent his two languages are, the greater will be his sense of a change in his perceptions when he changes languages.

The Mexican-American child entering an Anglo school will bring with him a greater or lesser degree of proficiency in his native language. Unless his family has only recently moved to this country, or has lived in a very isolated area, he will bring with him some knowledge of English, a bilingual system of a more or less compound or coordinate nature. His knowledge of English and the kind or degree of language system which he has developed will likely depend upon factors such as the family's length of residence, socio-economic status, and interaction with the majority culture. He has, however, learned to organize his world and to give it meaning through the language of his parents. Of the cultural heritage which the child receives from his parents through their language, Christian states, "One might easily predict that it will not be easy to do away with. He may be made ashamed of it and may even learn to despise it, but it will remain with him for the rest of his life" (4, p. 161). More understanding of such a child's language development is needed to help the school meet his educational needs.
Related Studies

The preponderance of recent research indicates that socio-economic level and cultural factors are more significant in language development and school achievement than are race or sex.

Goldberg (28, pp. 31-61) reviews studies giving evidence of socio-economic class difference in intellectual functioning and educational achievement. However, she reports that her research showed greater differences between Negro lower class children and the middle class white child than between lower and middle class whites. Her study was concerned with children in the third and fifth grades, and other investigators (1, 5) find evidence of a "cumulative deficit" which appears as a child progresses in school grades, and which may have been a factor in these findings.

Uhl and Nurss (32) cite studies by Grottesman and by Whiteman and Deutsch which indicate that major differences in intelligence and language development are more significantly related to environmental advantages and social class groups than to either race or sex.

The research by Uhl and Nurss (32), using the Illinois Test of Psycholinguistic Abilities, found differential factors operating in language functions and reading related tasks for lower and upper-middle class groups of children. The two groups were most similar on visual tasks. However, a "verbal mediation" factor appeared only in the middle class group,
and was significant for this group on some of the visual and visual-motor tasks. Uhl and Nurss felt that these subjects may have processed and stored the visual stimuli by using "unspoken language." No comparable verbal mediation factor was found in the lower socio-economic group. These authors also cite a study by Jenson (1969) in which lower class children were less able to use concepts to sort pictures.

In this study with the ITPA, one "general vocabulary" factor was found for the middle class group. The authors conclude that for these children, the test was one primarily of vocabulary proficiency. In the lower socio-economic group, two differentiated vocabulary factors were found, a receptive and an expressive factor, as well as an "auditory processing" factor. The appearance of the latter is interpreted as suggesting that mastery of the speaker's dialect was significant for these lower class children. Uhl and Nurss report that they found few correlations with race or sex.

In a study of language development with children two to five years of age, Sievers (29, pp. 1-26) reports no consistent differences related to sex. Occupational level of the father was found to be significant for the three and four year old groups, but not for the two and five year olds.

On the other hand, standardizations studies of the Illinois Test of Psycholinguistic Abilities (24) show socio-economic class level significant primarily for age groups of six and a half and upward. It is stated, however, that in
these studies, children of the lower age ranges tended to come from the higher social classes, since preschool referrals were not randomly selected, but were obtained through volunteer procedures (24, p. 41).

Mittler and Ward (26), in their normative study of the ITPA in England, found social class differences more marked for British children than those in the American normative groups. They report that these differences were clearly in evidence by the age of forty-eight months.

Bernstein (1) reports gross differences between verbal and non-verbal test scores for lower working class groups in England, and notes that educational performance is related to scores on the verbal test. It is suggested that

... the educational backwardness observed in lower class pupils is a "culturally induced backwardness transmitted and sustained through the effects of linguistic processing" and differs in its dynamic form from the backwardness attributable to psychological factors (1, p. 225).

Deutsch (5) reports an extensive evaluation of linguistic variables with first and fifth grade pupils. A total of fifty-two variables, including three IQ measures, was used, although not all of these were administered to both groups. In the first grade group, six measures correlated with race alone, nineteen with socio-economic status alone, and two with both. In the fifth grade group, six measures correlated with race alone, ten with socio-economic status alone, and twelve with both. Deutsch comments that the race differences
are present in the results, and reveal poorer performance by Negro children. However, he emphasizes that such differences are reflected in only eight of the possible forty-three comparisons for the first grade group. In reference to the fact that these correlations with race had increased for the fifth grade group, Deutsch states:

What makes the implications of the findings reported so significant is their apparent contribution to the cumulative deficit hypothesis. Also, they provide insight into the nature of the cumulative deficit. . . . it would appear that when one adds four years of a school experience to a poor environment, plus minority group status, what emerge are children who are apparently less capable of handling standard intellectual and linguistic tasks (5, p. 223).

Studies of bilingualism have tended to focus on semantic differences and investigation of the compound and coordinate systems as they relate primarily to learning in formal language classes. Studies relevant to the bilingual child who enters the public schools seem to have been principally concerned with the effects of bilingualism upon intellectual functioning.

It has been almost a truism that bilingualism has an adverse effect on intellectual functioning. However, a study by Peal and Lambert, with children matched on other variables such as social environment, is reported to have shown bilingual children functioning at a higher level than monolinguals on both verbal and non-verbal tasks (22, p. 120; 8, p. 237).

A recent study by Torrance and others (31) assessed the creative functioning of monolingual and bilingual children in
Singapore. The investigators hypothesized that because of competing associations, bilingual children would be less fluent and flexible in their thinking, but would be superior to monolinguals in elaboration and originality. The results did show greater fluency and flexibility for the monolinguals. Findings on elaboration and originality were not significant, but the trend was toward superiority by the bilinguals, and corrections made for the number of responses yielded even stronger trends in that direction.

One study which emphasizes the significant difference between the compound and coordinate bilingual systems involved bilinguals who became aphasic. Those with a coordinate system were more likely to have lost the use of only one of the languages, while the compound (fused) bilingual showed a more general language deficit involving both languages (22).

Studies by Lambert and others (22) have investigated semantic interference in second language learning and some teaching methods which reduce such interference. These indicate that the "direct" method of learning a second language (association of foreign words directly with their referents) is more effective in reducing interference than the "indirect" method (pairing words with their equivalents in the native language).

Some authorities have proposed that the words available in a given language and the structure of that language pre-determine a people's perceptions, and many studies have
investigated the effect of language on cognition and behavior. Intralinguistic studies by Brown and Lennenberg and interlinguistic studies by Carroll and Casagrande (20, pp. 298-301) have tended to support the theory that language influences behavior.

Brown (2) reports a study with preschool children which showed that the part-of-speech membership, or class, of a new word significantly determined the selection of relevant features of the new word.

Recent research has provided new data on the language-cognition question. Maccoby and Modiano (23, pp. 257-269) report a study of equivalence formation, or perception of similarities between objects, with Mexican and North American children. In a pilot study involving rural Mexicans and urban North Americans, children from ages six to eight were found to be more alike in their ability to differentiate between various objects and showed little ability to synthesize. However, even in this younger group, there were differences between the two cultural groups. The North American children of this age used more formal, nominal categories and analyzed objects in terms of their use. With the older age groups (over eight years of age), differences in ability to synthesize became apparent. The North American children tended to use more abstract concepts, while the Mexican children continued to use the concrete attributes of objects to determine similarities. The second part of this study compared urban and
rural Mexican children only. On these tasks, the urban group from Mexico City was found to be much more like the urban North American children than like the rural children of their own country and language.

Greenfield, Reich and Oliver (10) report extensive data relating to culture, language and equivalence formation. A study of Eskimo children by Reich found that equivalence formation correlated more significantly with environment than with language per se. The major portion of this work, however, is devoted to a study of this subject using children of the Wolof people, the dominant ethnic group of Senegal. Senegal was formerly under French colonial rule, and French is the language of the urban centers and the schools. For their study, the investigators selected as subjects groups of monolingual and bilingual Wolof children and a group of monolingual French children. The findings were analyzed from the standpoint of relating grammatical and conceptual structure and relating levels of generality to concept formation. Also investigated was the theory, generally attributed to Benjamin Lee Whorf, that the words available in a given language are indicative of the way the people speaking that language perceive the world, and predetermine the classifications and discriminations that these people make.

The findings of this study refute the lexical version of Whorf's theory rather clearly. The lack of a large number of color words in their language did not prevent the monolingual
Wolof children from using color to classify objects far more than did the bilingual Wolofs or the monolingual French. In addition, while the monolingual Wolofs tended to make more errors in color distinctions, the absolute number of errors was small and decreased with age until completely eliminated.

In regard to levels of generality, or sets of hierarchically organized labels, the authors note first that the use of such general words as "shape" and "color" increases with age among the children who attend school. The relationships found between the use of such superordinate words and the varieties of attributes used for classification indicated that the use of abstractions was not "... an either/or phenomenon, as so much experimentation has assumed. It is, rather, a matter of adding new bases to old and of integrating them in a hierarchically organized structure" (10, p. 306).

Analysis of data regarding grammatical structure and concept formation involved the distinction of three stages of symbolic reference: pointing, labeling, and the formation of complete sentences. Pointing, present only in the younger Wolof groups, disappeared with advancing age. Among the unschooled Wolofs, labeling increased with age, while sentence formation stayed at a low level. The greatest difference in use of labeling or sentences appeared between the Wolof unschooled and schooled children. It was found that the use of complete sentences in making responses was significantly related to the formation of a superordinate structure. The
authors conclude that their research supports the previous comparisons between urban and rural children, but goes beyond other studies in highlighting the differences between schooled and unschooled children. They state, "Schooling appears to be the single most powerful factor we have found in the stimulation of abstraction" (10, p. 315).

A study by Clasen, Spear, and Tomaro (3) reports the effects of a preschool program on two groups of children from low-income families. A control group received only incidental language training, while the second, experimental, group received a concentrated language development program. The experimental group was found to have made significantly greater growth on the Illinois Test of Psycholinguistic Abilities.

Purpose of the Study

The foregoing review of literature and research points up the complexities of language learning and the transaction between culture, language development, and school achievement. It has also been noted that recognition of the importance of early environmental factors on language development and school performance has led to the establishment of preschool programs for disadvantaged children. Such programs aim to develop more adequate social skills, to encourage more positive attitudes toward the school, and to provide experiences necessary to and preparatory for coping with traditional academic tasks.
Since so much of a child's language competency and school readiness is dependent upon the circumstances that obtain in the first years of his life, one wonders if a few months of preschool experience will be adequate to compensate for a prior four years of deprivation. Evidence leads us to expect that some gains in language functions will occur where the preschool program focuses on the presentation of language development materials, but further data are needed to reinforce such an expectation and to indicate specific strengths and weaknesses and the specific linguistic areas where gains do occur.

Previous research has identified an "auditory processing" factor for low socio-economic group children. This suggests that in a preschool program, gains may appear where greater familiarity with the teacher's, or majority culture's, dialect is acquired. The same research found a relative lack of a "verbal mediation" factor for these children. This, together with other studies indicating comparatively lowered abilities to sort and classify objects, suggests that gains will be less on tasks where such a factor has appeared, i.e., in perceiving similarities between objects.

The purpose of the present study was to evaluate the psycholinguistic abilities which the disadvantaged child brings with him to the preschool setting, and the growth in language development made during his participation in the program. The performance of monolingual, English-speaking
children in the program was contrasted with that of children from bilingual, Mexican-American homes.

It might be considered inherently unfair to use a standardized test in the English language to evaluate five and six year old children from Spanish-speaking homes, even when these children understand some English. However, the purpose here was not to categorize or label these children poor in language development, but to determine if, and how, they may differ in language skills (both verbal and non-verbal) from others of their same socio-economic level. Recent trends in education have stressed the use and development of the native language through bilingual instructional programs. It would have been additionally helpful had an instrument been available to assess the level of language development in Spanish. In the absence of such an instrument, it was still felt that much useful information about the abilities of this group of children could be gathered. It would also seem of great importance to evaluate the preschool program in preparing them traditional school learning tasks.

Definitions

For the purposes of this study, "psycholinguistic abilities" are defined in terms of the subtest scores on the Illinois Test of Psycholinguistic Abilities.

"Auditory processing" is defined in terms of the scores on two of the subtests, the Auditory-Vocal Automatic and the
Auditory-Vocal Association subtests of the *Illinois Test of Psycholinguistic Abilities*.

"Verbal mediation" is defined in terms of performance on the Visual-Motor Association subtest of the *Illinois Test of Psycholinguistic Abilities*.

Those children from homes where Spanish constitutes the first, or major, language are defined as "bilingual."

Children from homes where English is the only language spoken are defined as "monolingual."

**Research Hypotheses**

On the basis of previous studies of language development and linguistic abilities of lower socio-economic level groups, and research related to the interaction of culture, language and cognition, the following hypotheses will be tested in this study:

1. The preschool program will result in significant overall gains in psycholinguistic functioning for both the bilingual and monolingual groups of children.

2. For both groups, gains on tasks involving auditory processing will be of greater significance than gains on tasks requiring verbal mediation.

3. There will be no significant difference between the gains demonstrated by the bilingual and monolingual children.
CHAPTER BIBLIOGRAPHY


CHAPTER II

METHODS AND PROCEDURES

Source of Data

A pilot kindergarten program was initiated by the Dallas Independent School District in January, 1969. The overall objective of the program was to evaluate the effectiveness of providing preschool experiences for children from low socio-economic and culturally disadvantaged families. Specific objectives included the evaluation of four different instructional models used in the program.

The instructional models used were the Bank Street Model, the Deutsch Model, the Marie Hughes Model, and the Weikert Model. Each of these differed somewhat in materials used and in emphasis placed upon various phases of the preschool experience. However, the general goals of each were quite similar. No attempt was made to evaluate every goal of every model, but the major objectives common to the four were examined and appraised.

Classes were established on the campuses of three elementary schools serving areas populated by low-income, minority group families. Teachers were specifically selected for this program and received orientation and training in the instructional model of choice. Teacher aides were employed for each
of the classes. The aides were Negro and Mexican-American women selected on the basis of general intelligence, aptitude, interest, and minority group background.

Major objectives to be appraised included improvement in the areas of intellectual functioning, self-image, peer interaction, reading readiness level, and sensory-motor abilities. Other objectives consisted of the identification of teacher-pupil interaction patterns, assessment of the effectiveness of using teacher aides, and increased parental involvement with the school. Evaluation procedures consisted of the administration of nine test instruments to all of the children in the program, and the administration of two individual tests to a random sample of the pupils. A parent questionnaire was utilized to secure parental impressions of the program and to determine the degree of parental involvement. Three additional instruments were administered to teachers and teacher aides.

Subjects

Participation in the preschool program was voluntary. It was open to any child who lived within the specific geographic area served by any of the three schools and who was to be six years of age by September 1, 1969. Ethnic group distribution of those who participated was approximately 60 per cent Negro, 30 per cent Mexican-American, and 10 per cent Caucasian. No attempt was made to secure income figures
for the families of the children, but it has been estimated that fewer than five per cent had incomes above the "poverty level" (7).

From the total research population of 207 children, a random sample was drawn to serve as subjects for the administration of the Stanford-Binet Intelligence Scale and the Illinois Test of Psycholinguistic Abilities. Originally, the sample consisted of forty children, but five were deleted because of withdrawal from the program or absence during one of the test administrations, so that the final sample was made up of thirty-five children.

Eighteen of these pupils were from monolingual, English-speaking homes, and seventeen were Mexican-American children from bilingual, Spanish-speaking homes. At the beginning of the program, mean age for both the monolingual and bilingual groups was five years, eleven and a half months.

Description of the Instrument

The Illinois Test of Psycholinguistic Abilities was developed from a model for the communication process formulated by C. E. Osgood, and based upon Hull's learning theory. This model includes the following categories which were utilized in the construction of the test:

1. Channels of communication. These are various combinations of stimulus input and response output and include the auditory-vocal, auditory-motor, visual-vocal, and the
visual-motor channels. Another mode of sensory input, the tactile, was omitted because of practical considerations.

2. Levels of organization. The representational level mediates meaning or significance of linguistic symbols, while the integration level mediates the more automatic or habitual activities.

3. Processes. This includes decoding, the grasp of meaning of auditory or visual stimuli; encoding, expression of ideas in words or gestures; association, the habits required to manipulate linguistic symbols.

Nine subtests were constructed to tap these categories. Tests on the representation level are:

1. Auditory Decoding, which assesses the ability to understand the spoken word.
2. Visual Decoding, which assesses the ability to understand visual stimuli.
3. Auditory-Vocal Association, a verbal analogies kind of task measuring the ability to relate spoken words in a meaningful way.
4. Visual-Motor Association, which involves relating visual symbols in a meaningful way.
5. Vocal Encoding, which requires the ability to express ideas in spoken words.
6. Motor Encoding involves expressing one's ideas in gestures.

The remaining three subtests measure automatic vocal
responses, attention span and immediate recall. These Automatic-Sequential tests are:

7. Auditory-Vocal Automatic, which involves the use of automatic grammatical habits, or the prediction of future linguistic events from past experience. The authors comment that no comparable test in the visual-motor channel could be designed for this battery.

8. Auditory-Vocal Sequencing, a test of attention and immediate auditory recall for series of digits.

9. Visual-Motor Sequencing, requiring the ability to reproduce from memory a series of visual stimuli.

The test was standardized on a group of 700 children in Decatur, Illinois. No attempt was made to insure a population representative of national ethnic or social class groups. However, the authors state that Decatur, Illinois, was chosen because social class distribution in that city was more representative of the state as a whole than were other centers. IQ range of the sample population was 80-120, and children with serious sensory or physical handicaps were excluded, since the stated aim was "to provide a reference group of relatively normal children" (1, p. 14). Language age norms were established for children of ages two and a half through nine years.

Factor analysis of the standardization data found a "general linguistic ability" factor appearing most significantly at all age levels. This would seem comparable to the
"general vocabulary" factor found by Uhl and Nurss in their upper-middle class group (5). All nine abilities purportedly measured by the subtests appeared as factors in the standardization analysis, but the frequency and weight of the factor loadings varied considerably at various age levels.

This test was first issued as an experimental edition after several years of prior research, with the frank admission that much more research and clinical experience with the battery was needed. McCarthy and Olsen state that subsequent validation studies "... are not subject to simple summation. Generally, the data suggest the concurrent, construct and predictive validities to be adequate, followed by the content and diagnostic" (2, p. 66).

It is noted specifically that the two Encoding subtests and the Auditory-Vocal Automatic subtest may not fit the definitions given in the Examiner's Manual. The Two Encoding tests were found to be relatively free of the decoding and associational processes in their respective channels, but were contaminated by each other for some undetermined reason. The Auditory-Vocal Automatic subtest seemed to be less grammatically mechanical than was intended and to perhaps measure a more general linguistic factor.

The test has been employed and found useful in differentiating perceptually and sensorily handicapped children. It is widely used, in combination with other instruments, for diagnostic and prescriptive purposes for children with
difficulties in learning to read, or with other kinds of language learning disabilities.

In the present study, since limitations of time and of examining personnel dictated an abbreviated battery, the two sequencing tests were omitted. The purpose of the study was to appraise meaningful language abilities and usage, and it was felt that the two tests measuring attention and immediate recall could be deleted with the least loss to this objective.

Treatment of the Data

The test was administered at the beginning and the end of the preschool program. Mean differences between pre- and post-tests for the sample as a whole were obtained for each of the seven subtests. The significance of the differences was determined by the use of Fisher's $t$ test.

Residualized scores were obtained to correct for gains to be expected on the basis of time alone, and were used in the following computations:

1. $t$ tests to determine the significance of gains on each of the seven subtests for the sample group as a whole.

2. $t$ tests for the significance of gains by the bilingual group and the monolingual group for the seven subtests and for the total score.

3. $t$ tests to determine the significance of any differences between the gains made by one group over the other.
CHAPTER BIBLIOGRAPHY


CHAPTER III

RESULTS

It was stated in Chapter II that preschool children have shown significant gains in language functioning where they have been provided with a planned language development program. On this basis, it was hypothesized that the pupils in the present study would demonstrate significant differences between pre- and post-test performance on tests of linguistic abilities.

Initially, pre- and post-test mean scores for the combined bilingual and monolingual groups were computed for each of the seven subtests of the Illinois Test of Psycholinguistic Abilities. The differences between these were obtained, and Fisher's t test was used to determine the significance of the differences.

Since it was to be expected that some gains would accrue simply with the passage of time, residualized scores were computed to remove the time factor. The t-ratios obtained for the actual and hypothesized differences yielded a more accurate picture of the significance of the gains. Tests of significance for the bilingual and monolingual groups separately used t-ratios based on correlated differences between actual and hypothesized language age scores.
Mean language age scores and differences between pre-test and post-test scores for the combined groups are shown in Table I. Since it was necessary to show gains in terms of months, all scores are expressed in months in the tables. It will be noted that the mean language ages on the pre-test range from three years, five months on Auditory-Vocal Automatic to five years, four months on Visual-Motor Association. Since the mean chronological age at the time of pre-testing was five years, eleven and a half months, it can be seen that the group as a whole was much below norms on all of the sub-tests. It is additionally clear that, as has been found previously with children from disadvantaged or minority groups, performance is lowest in the auditory-vocal channel, while scores are high on visual and visual-motor tasks.

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Pre-Test Mean</th>
<th>Post-Test Mean</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-V Decoding</td>
<td>53.75</td>
<td>60.39</td>
<td>6.64</td>
</tr>
<tr>
<td>Visual Decoding</td>
<td>60.00</td>
<td>67.91</td>
<td>7.91</td>
</tr>
<tr>
<td>A-V Association</td>
<td>49.47</td>
<td>58.92</td>
<td>9.45</td>
</tr>
<tr>
<td>V-M Association</td>
<td>64.35</td>
<td>79.13</td>
<td>14.78</td>
</tr>
<tr>
<td>Vocal Encoding</td>
<td>46.28</td>
<td>58.12</td>
<td>11.84</td>
</tr>
<tr>
<td>Motor Encoding</td>
<td>58.78</td>
<td>64.40</td>
<td>5.62</td>
</tr>
<tr>
<td>A-V Automatic</td>
<td>41.21</td>
<td>44.55</td>
<td>3.34</td>
</tr>
</tbody>
</table>

*Language age scores given in months.*
On post-testing, the same pattern prevails. However, absolute gains appear for all of the subtests, although the difference for Auditory-Vocal Automatic is not equal to the four-month time period between the two testings. Post-test scores on five of the tests approach or exceed a language age of five years. The Visual-Motor Association language age, at six years, seven months, exceeds the chronological age level. The largest gains, fourteen months on the Visual-Motor Association test and eleven months on Vocal Encoding, appear in areas which were not predicted to show gains. The smallest gain is found on the Auditory-Vocal Automatic test, which was predicted to show significant growth.

The significance of these differences is presented in Table II. Based on absolute differences, significant gains are demonstrated on the first five subtests. These are the Auditory-Vocal Decoding test, significant beyond the .05 level of confidence; Visual Decoding and Auditory-Vocal Association, both significant beyond the .01 level; Visual-Motor Association and Vocal Encoding, significant beyond the .001 level.

The last column of Table II gives the t scores for the correlated differences; that is, for the gains made in excess of those that would be expected on the basis of time alone. As can be seen, with this procedure, only tests four and five, Visual-Motor Association and Vocal Encoding, continue to show significant differences.
TABLE II

TESTS OF SIGNIFICANCE BETWEEN PRE- AND POST-TEST SCORES AND BETWEEN ACTUAL AND HYPOTHESIZED GAINS FOR THE COMBINED BILINGUAL AND MONOLINGUAL GROUPS

<table>
<thead>
<tr>
<th>Subtest</th>
<th>S. D.</th>
<th>t</th>
<th>t for Correlated Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-V Decoding</td>
<td>15.98</td>
<td>2.42&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.21</td>
</tr>
<tr>
<td>Visual Decoding</td>
<td>15.18</td>
<td>3.05&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1.67</td>
</tr>
<tr>
<td>A-V Association</td>
<td>20.43</td>
<td>2.87&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1.79</td>
</tr>
<tr>
<td>V-M Association</td>
<td>17.62</td>
<td>4.98&lt;sup&gt;d&lt;/sup&gt;</td>
<td>3.02&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Vocal Encoding</td>
<td>15.06</td>
<td>4.62&lt;sup&gt;d&lt;/sup&gt;</td>
<td>2.70&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Motor Encoding</td>
<td>16.38</td>
<td>2.03</td>
<td>0.89</td>
</tr>
<tr>
<td>A-V Automatic</td>
<td>21.49</td>
<td>0.64</td>
<td>-0.19</td>
</tr>
</tbody>
</table>

<sup>a</sup><sub>p= <.05.</sub>  <sup>b</sup><sub>p= <.02.</sub>  <sup>c</sup><sub>p= <.01.</sub>  <sup>d</sup><sub>p= <.001.</sub>

As stated earlier, these findings do not show significant gains in the predicted areas. Analysis of the data for each of the groups separately clarifies the above results to a degree and shows the contribution made by each to the total gains.

Table III shows the mean language age scores and the gains in months for the Mexican-American children. As is true for both groups, relatively greater scores occur on the visual and visual-motor tests. Auditory-vocal abilities are quite depressed, ranging from below the three-year language age level on Auditory-Vocal Automatic, to four years on the Auditory-Vocal Decoding test. However, differences beyond the four-month period between testings are found on all seven of the subtests. On four of these, the gains appear
to be rather startling. On the post-test, language age for Vocal Encoding, at four years, six months, remains below the chronological age level, but the difference represents a gain of more than one year over the pre-test performance. This

TABLE III

ITPA LANGUAGE AGE SCORES FOR THE BILINGUAL GROUP*

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Pre-Test Mean</th>
<th>Post-Test Mean</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-V Decoding</td>
<td>48.12</td>
<td>58.06</td>
<td>9.94</td>
</tr>
<tr>
<td>Visual Decoding</td>
<td>56.88</td>
<td>68.65</td>
<td>11.77</td>
</tr>
<tr>
<td>A-V Association</td>
<td>40.88</td>
<td>54.18</td>
<td>13.30</td>
</tr>
<tr>
<td>V-M Association</td>
<td>63.65</td>
<td>76.47</td>
<td>12.82</td>
</tr>
<tr>
<td>Vocal Encoding</td>
<td>40.06</td>
<td>54.29</td>
<td>14.23</td>
</tr>
<tr>
<td>Motor Encoding</td>
<td>54.94</td>
<td>60.41</td>
<td>5.47</td>
</tr>
<tr>
<td>A-V Automatic</td>
<td>31.41</td>
<td>40.82</td>
<td>9.41</td>
</tr>
</tbody>
</table>

*Language ages given in months.

is also true for Auditory-Vocal Association. Visual Decoding, with a mean language age of five years, eight months, and Visual Motor Association, exceeding chronological age level with a score of six years, four months, show gains of one year over the pre-test levels. Motor Encoding shows the smallest gain and the lowest score of all of the non-verbal tasks, indicating less change in motor coordination tasks and self-expression through gestures.

Table IV shows the significance of these differences. As noted above, absolute gains on four of the tests seem
TABLE IV

TESTS OF SIGNIFICANCE BETWEEN ACTUAL AND HYPOTHESIZED DIFFERENCES OF PRE- AND POST-TEST SCORES FOR BILINGUALS

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Mean Difference</th>
<th>S. D.</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-V Decoding</td>
<td>5.94</td>
<td>18.69</td>
<td>1.27</td>
</tr>
<tr>
<td>Visual Decoding</td>
<td>7.76</td>
<td>14.65</td>
<td>2.12*</td>
</tr>
<tr>
<td>A-V Association</td>
<td>9.29</td>
<td>17.77</td>
<td>2.09*</td>
</tr>
<tr>
<td>V-M Association</td>
<td>8.82</td>
<td>16.09</td>
<td>2.19*</td>
</tr>
<tr>
<td>Vocal Encoding</td>
<td>10.24</td>
<td>17.36</td>
<td>2.36**</td>
</tr>
<tr>
<td>Motor Encoding</td>
<td>1.47</td>
<td>14.38</td>
<td>0.41</td>
</tr>
<tr>
<td>A-V Automatic</td>
<td>5.41</td>
<td>23.14</td>
<td>0.94</td>
</tr>
<tr>
<td>Total</td>
<td>72.94</td>
<td>68.59</td>
<td>4.25***</td>
</tr>
</tbody>
</table>

* Approaches significance at the .05 level.
** p = < .05.
*** p = < .001.

quite large. However, $t$ scores for the correlated differences, removing the time factor, reveal that three of these only approach significance at the .05 level of confidence. Had the group been larger, these might have reached higher levels of significance. The difference for Vocal Encoding is found to be significant beyond the .05 level, and overall gains are significant beyond the .001 level. Thus, for this group of bilingual children, the first hypothesis is accepted. Overall gains for the seven subtests are highly significant.

The second hypothesis stated that gains would be of greater significance on tasks requiring auditory processing than on those involving a verbal mediation factor. The data do not support this hypothesis for this group. The large
gain on the Auditory-Vocal Association test does not reach an acceptable level of significance. The Auditory-Vocal Automatic test shows the lowest language age on both pre- and post-tests and does not yield a significant gain. On the other hand, Visual-Motor Association, which was specified as involving a verbal mediation factor, produces one of the largest absolute gains and shows the highest language age of all the subtests.

Data for the monolingual group are presented in Tables V and VI. It will be noted that language age scores for this group are higher on all tests than those for the bilingual children. As with the first group, Visual-Motor Association represents the highest level of performance, followed by the Motor Encoding and Visual Decoding tests. For this group, Visual-Motor Association shows a large and distinct gain, not

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Pre-Test Mean</th>
<th>Post-Test Mean</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-V Decoding</td>
<td>58.38</td>
<td>62.72</td>
<td>3.34</td>
</tr>
<tr>
<td>Visual Decoding</td>
<td>63.06</td>
<td>67.17</td>
<td>4.11</td>
</tr>
<tr>
<td>A-V Association</td>
<td>58.06</td>
<td>63.67</td>
<td>5.61</td>
</tr>
<tr>
<td>V-M Association</td>
<td>65.06</td>
<td>81.78</td>
<td>16.72</td>
</tr>
<tr>
<td>Vocal Encoding</td>
<td>52.50</td>
<td>61.94</td>
<td>9.44</td>
</tr>
<tr>
<td>Motor Encoding</td>
<td>62.61</td>
<td>68.39</td>
<td>5.78</td>
</tr>
<tr>
<td>A-V Automatic</td>
<td>51.00</td>
<td>48.28</td>
<td>-2.72</td>
</tr>
</tbody>
</table>

*Language ages given in months.
even approached by the differences for the other subtests. Other than for this gain and that on the Motor Encoding test, these differences do not equal those made by the bilingual group. Performance on the Auditory-Vocal Automatic subtest shows a loss of over two months in language age which defies explanation.

Table VI shows the significance of the differences for the monolingual group. As might be expected from the data presented in Table V, the only significant difference for a specific subtest occurs on Visual-Motor Association. However, a total gain significant beyond the .01 level supports the first hypothesis for this group.

As with the first group, the second hypothesis must be
rejected for the monolinguals. Gains made on the Auditory-Vocal Association test barely exceed those to be expected with the passage of time, and are not significant. The two-month loss on Auditory-Vocal Automatic has already been noted. Since it does not seem logical to attribute poorer grammatical usage to the preschool program, this finding must be ascribed to some unknown chance factor. Perhaps it is more important to note, not the loss, but the failure to gain.

It was not expected that Visual-Motor Association, involving a verbal mediation factor, or equivalence concept formation, would show significant gains. However, as with the bilingual group, this is the only area which exceeds chronological age expectations on either test administration, and it shows the only significant gain for the second group other than the total gain.

The third hypothesis stated that there would be no significant differences between the gains made by one group and the gains made by the other. In spite of the large apparent differences in gains on some of the subtests, and the differences in language age scores, the third hypothesis must be accepted. Then the actual and hypothesized gains for the two groups are compared, no statistically significant differences are found.

The following t scores were obtained for the differences between the gains: Auditory-Vocal Decoding, 1.23; Visual
Decoding, 1.52; Auditory-Vocal Association, 1.11; Visual-Motor Association, 0.65; Vocal Encoding, 0.94; Motor Encoding, 0.05; Auditory-Vocal Automatic, 1.64.
CHAPTER BIBLIOGRAPHY


CHAPTER IV
DISCUSSION AND CONCLUSIONS

The findings presented in the preceding chapter clearly depict the expected deficiencies in language development of both groups of these lower socio-economic level, culturally disadvantaged children. As hypothesized, each group did make significant overall gains on linguistic tests. Also, while the gains made by the Mexican-American children were much larger in some areas, statistically, these were not significantly greater than the gains of the monolingual pupils. The most significant gains for each group, however, were not in the predicted areas. Of particular interest are the large gains made by the Mexican-American children in several areas, the appearance of Visual-Motor Association abilities as a major strength for both groups, and the low level of performance on the Auditory-Vocal Automatic subtest and its evident resistance to change.

It is felt that had the sample of children been larger, more statistically significant gains would have been shown, at least where the scores approached an acceptable level of confidence, as they did on three of the subtests for the bilingual group. Since these Mexican-American children did show some gains on all of the auditory-vocal tests, it seems
probable that an "auditory processing" factor involving increased ease and familiarity with the speech of the teacher and other English-speaking individuals was operative for the group.

The significant gain on Vocal Encoding for the Mexican-American pupils suggests the presence of another factor in the performance of these children. Performance on this test does not depend upon grammar, "correctness of expression," or precision of word usage, but upon the number and kind of ideas and observations about a specific object which a child can express. It is less structured than the other auditory-vocal tests, and requires that the child volunteer different, meaningful descriptions of the objects presented to him. In such self-expression, it is necessary not only that one have ideas and the words in which to state them, but that one feel like expressing them. Shy children, or any children in a novel setting, may be disinclined to say anything aloud in such a situation. The encoding tests, and Vocal Encoding particularly with less verbal children, would be apt to reflect a lack of self-confidence and spontaneity. It does not seem illogical to assume that some of the observed language gains denote, in part, increased freedom of expression.

Data for the monolingual group do not reveal as large a gain in vocal expression. For this group, however, Vocal Encoding does show the greatest gain of all the auditory-vocal tests. Assuming that spontaneity is a factor in these
results, the difference between the two groups on this dimension may lie in the levels of out-goingness from which they started.

The Visual-Motor Association test shows the only significant gain for the monolingual group, other than for the total score, and also shows a large gain for the Mexican-American group. For both groups it provides the highest language age score, and on post-testing, exceeds chronological age for both groups. This task involves relating visual symbols in a meaningful way. "Symbols" here is not used in the abstract sense of geometric forms or letter symbols, for the visual stimuli presented are pictures of more or less familiar objects. The child must pair one object with one of four others, either on a concrete level of association (sock goes with shoe, spoon goes with teacup), or on a broader conceptual basis (a man and a woman are both people). No verbalization is necessary, and the child may respond by simply pointing.

It will be remembered that one factorial study (5) found a "verbal mediation" factor influencing performance on this test. This verbal mediation recalls and can be related to the "inner language" concept. The abilities and processes involved here can also be related to the "equivalence formation" studied by Bruner and others (1). It is clear that these children demonstrate such abilities in marked superiority over other language skills. It is also evident, from
the gains made over a brief, four-month period, that they were able to use the materials presented in the preschool classes to capitalize on and enhance these abilities. The challenge to educators will be two-fold: to supply these children with the superordinate words for such concepts and classifications and to provide experiences and materials in such a way that the pupils can build on the conceptual bases which they now have and integrate new concepts with the old.

In discussing their findings relating to classification and equivalence, Greenfield, Reich and Oliver (3) comment that it is not that one person uses color classification and another uses shape, but rather that one can use color and the other can use shape and color. These authors state:

Superordinate class words are not just a luxury for people who do not have to deal with concrete phenomena ... we seem to have found an important correspondence between linguistic and conceptual structure. It relates, however, not to words in isolation but to their depth of hierarchical embedding both in the language and in thought. This correspondence has to do ... with the presence or absence of words of a higher order that can be used to integrate different domains of words and objects into hierarchical structures. No matter how rich the vocabulary available to describe a given domain, it is of limited use as an instrument of thought if it is not organized into a hierarchy that can be activated as a whole (3, p. 306).

The Auditory-Vocal Automatic subtest is a grammatical task, described as evaluating the ability to predict future linguistic events from past experience. The items are in a sentence completion form where the child must supply the last word, the plural form of a singular noun or the past
tense or past participle of a verb previously used in the sentence. One would not expect the Mexican-American pupils, who would have had little opportunity in the home to hear and acquire English grammatical structure, to perform well on such items. This group does, however, demonstrate gains on this test, from a language age of two years, seven months on the pre-test, to three years, four months on the post-test. The monolingual group, as has been noted, failed to show any gains on this test.

Validity studies by McCarthy and Olsen (4) showed significant intercorrelations between Auditory-Vocal Automatic and each of the other subtests in the auditory-vocal channel. However, post-test results in the present study reveal a marked discrepancy between the language age scores on this test and those of the other auditory-vocal tests. For each group, the language ages for Auditory-Vocal Decoding, Auditory-Vocal Association and Vocal Encoding approximate each other rather closely, while the language age for Auditory-Vocal Automatic is one to one and a half years below these.

It is this area of language usage, together with pronunciation, that is meant when the term "sub-standard English" is applied to the speech of minority groups. The term and its implications frequently result in a prejudgement of inferior or limited intelligence. For the Subjects of this study, such speech patterns appear to be less amenable to change than other areas of language development. One can
easily predict that this factor will probably contribute to confusion and difficulty when written language is introduced to these children in the classroom, when they must read from books written in standard English which they do not, in essence, speak. The schools may need to adjust expectations and perhaps value judgements vis a vis the grammar of minority group pupils, and/or develop instructional materials to ease the standard/sub-standard translation problem for these youngsters.

CONCLUSIONS

This study found two groups of culturally disadvantaged children, bilingual and monolingual, entering preschool with expected deficiencies in language development. Deficiencies were greater for the bilingual, Mexican-American children, and for both groups deficits were more pronounced in the area of spoken language rather than on primarily visual tasks. The same pattern of lower auditory-vocal performance was found at the conclusion of the preschool program, although significant overall gains had been made.

Results indicate that the value of the preschool experience for language development lay principally in increased effectiveness of verbal expression and increased ability to formulate conceptual relationships between objects. The monolingual group demonstrated the largest gain in this kind of non-verbal conceptualization, while the bilingual group
had greater gains in several other areas, notably in verbal expression. The differences between the two groups in the amount of gain were not statistically significant, however.

It may be that the larger gains obtained for the Mexican-American children were, in part, an effect of poor language abilities further depressed and inhibited not only by unfamiliarity with the speaker's language, but by a lack of self-confidence and spontaneity on the pre-test which made them seem more linguistically deficient than was actually the case. However, this is purely speculative and might not apply in the same degree to the obvious gains made on visual tasks.

Hypotheses based upon other studies with this test instrument, which related to specific areas in which significant gains might be expected to occur, were not supported by the findings. This may have been due to unknown variable differentiating this sample of children from those studied in prior research.

These results, when related to other studies on cognitive growth and language development, do offer suggestions to educators in regard to building upon the non-verbal conceptual basis which these children do possess. It is also suggested that the role of grammatical structure and the sub-standard English of minority group children be recognized as a possible contributing factor in their learning difficulties with the written language. As further speculation,
the failure of the schools to adequately meet the needs of these children in these two areas may contribute equally with the home and social environment to the cumulative deficit effect in school achievement.

Further research is needed to augment these findings and to support or contest the conclusions. As a more complete appraisal of the preschool program in furthering language development, it would be helpful to investigate psycholinguistic abilities of entering first grade pupils, one group of whom had attended the preschool, and one who had not had this experience.
CHAPTER BIBLIOGRAPHY


BIBLIOGRAPHY

Books


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Unpublished Materials