A BILINGUAL EDUCATION PROGRAM HAS BEEN FIELD TESTED IN SAN ANTONIO, TEXAS, IN CLASSES OF DISADVANTAGED MEXICAN-AMERICAN CHILDREN. THIS SOUTHWEST EDUCATIONAL DEVELOPMENT LABORATORY (SWEDL) PROGRAM IS ALSO APPLICABLE TO TEACHING FRENCH ACADIANS AND NEGRO AMERICANS. THE STRENGTH OF THE PROGRAM, ACCORDING TO THE AUTHOR, LIES IN WHAT IT DOES TO CHANGE THE CHILDREN. IT HELPS THEM BECOME "INTELLECTUALLY CURIOUS, PROFONDLY SENSITIVE TO OPPORTUNITIES AROUND THEM, AND FRIENDLY AND RESPONSIVE HUMAN BEINGS." BY TALKING FIRST ABOUT AN IMPERSONAL SUBJECT LIKE SCIENCE, THE CHILDREN GAIN LANGUAGE PROFICIENCY AND CONFIDENCE WHICH ENABLES THEM TO MOVE TOWARD LEARNING ABOUT SOCIAL STUDIES, AND HOW THEY FIT INTO THE LARGER WORLD BEYOND THEIR NEIGHBORHOODS. READING IN THE TWO LANGUAGES IS INTRODUCED EARLY AND IS BASED ON WHAT THEY HAVE LEARNED TO UNDERSTAND AND USE ORALLY. SUBJECT MATERIALS ARE TAUGHT IN BOTH SPANISH AND ENGLISH AT SEPARATE PERIODS DURING THE DAY. A DESCRIPTION OF HORN'S LANGUAGE RESEARCH PROJECT (BEGUN IN 1964 AND STILL ONGOING IN THE SAN ANTONIO SCHOOL DISTRICT) AND THE OTT STUDY (THE SPANISH-ENGLISH FLUENCY TEST WHICH WAS GIVEN TO CHILDREN PARTICIPATING IN THE HORN PROJECT) IS FOLLOWED BY TEST DATA.

(AMH)
BASIC EDUCATION FOR SPANISH-SPEAKING DISADVANTAGED PUPILS

In this time of unprecedented educational change, the curricula at all levels are assuming new dimensions and providing new and compelling purposes for study. To meet this challenge, the new curricula must develop:

1. understandings of the world culture of which we are an integral part;
2. a better grasp of the burgeoning technological developments through learning the basic knowledge and theory which underlie them;
3. the behaviors and attitudes for both critical and creative problem solving needed for independent thinking, not only on today's problems, but for problems arising in the future.

Four basic questions related to these important issues will be discussed in the remainder of this article.

What are the implications for pupils of a non-English-speaking background?

Many teachers experienced in teaching children from a non-English-speaking background consider themselves relatively successful in developing in their pupils a style and vocabulary in "basic" English, free from gross errors in syntax and morphology, and adequate for self-expression of daily experiences. The content of the beginning English language program is often (and logically) based primarily on English structures essential for communication and conversation.
in social situations. Unfortunately, little or no attention has been given to the native language of the child. Teachers find the teaching of subject matter content, with its heavy load of concepts and terminology, a complex task indeed for all pupils, but more particularly for pupils who must learn such material through the medium of a language which is foreign to them. This applies as well to children who possess a non-standard American-English dialect. Traditionally, textbooks assume certain common experiences and are written for the native-English-speaking child. Therefore, there remains the important task of developing bilingual competence through specialized curricular materials which organize the subject matter content and the appropriate language methodology to meet the specific needs of the non-English-speaking child or the child with a non-standard dialect.

What are some innovations which evidence sound direction, development and implementation?

The Southwest Educational Development Laboratory (SWEDL) in Austin, Texas, is working to develop a curriculum in Language-Bilingual Education (this includes bilingual education in both Spanish and French and bi-dialectic education for the Negro), incorporating the content of Mathematics, Social Studies, and Science for identified population groups in Texas and Louisiana.

Although applicable to teaching English as a second language to disadvantaged Mexican American, Negro American, and French Acadians, the SWEDL Language Program is designed for initial emphasis on teaching English as a second language to Mexican-American boys and girls—and
it accomplishes this with notable success. However, its greater
strength lies in what this program does to **change** the boys and girls in
the schools—how it helps them to become intellectually curious, pro-
foundly sensitive to opportunities around them, and friendly and
responsive human beings.

The program has been field tested in schools in San Antonio, in
classes where more than ninety percent of the children come from homes
of abject poverty.

The rationale for the program is based on six principles:

1. An environment for learning that includes a feeling of warm
affection and sincere acceptance between teacher and pupils.
The teacher's task calls for robust vitality, academic com-
petence, patience, realistic appraisal of pupil socio-economic
and psychological backgrounds, and the sincere concern and
interest needed to nurture the best efforts to kindle the
spark for learning.

2. A belief that every child has a desire to learn, that the
thirst to know is a basic and innate quality of humanity,
as basic as a need for food.

3. A respect for the unique personality of each pupil that takes
into account acceptance and support for his efforts.

4. A recognition of the necessity for the child to be success-
ful in an environment that includes "fail safe" opportunities
in learning.
5. A specialized instructional program that includes methods and materials developed especially for the needs and learning styles of the student population.

6. A specialized teacher education program which reflects a continuous modification of the program as may be indicated, for greater pupil gains.

It is recognized that these principles are basic to effective education of children, regardless of content or specialized methods. However, as the process of the program is described, keep in mind that these are children who come to school speaking little or no English. This specialized method, which will be described later, is a way of introducing language patterns first in Spanish, then in English.

While language proficiency is the center of the program, language learning is accomplished through experiences in substantive learning—language development is emphasized in the presentation of materials in science, social studies, art and drama, and music. The program's first step toward the mastery of the language system for effective reading and writing and talking is the building of a positive self-concept. The child is taught to think of himself as someone important—important to the teacher, to his classmates, to his family, and to the community. Soon after the child arrives at school, he identifies himself. He is not asked, "What is your name?" Instead, he is asked, "Who are you?"

And the answer comes proudly, "I am Juan." Juan stands before a mirror and looks at himself as he says, "I am Juan." He is made to understand that, as Juan, he is a unique and wonderful person. There is no one else like him, no one else with his capabilities, with his smile, with his power to charm
and to learn. From Juan, the teacher moves with him to other students—but the subject still is Juan.

"Who is he?" she asks.

"He is Juan," the children answer.

Before they know it, the pupils have learned their English pronouns; and through games like this, in which the child in the center is the subject of the discussion, the children have experiences in sentence-making. First the child learns about himself—who he is, where he lives, and how he looks to others, and what he likes. The alerting of the senses awakens him to the world around him and helps him to bring orderliness and beauty to often chaotic and sometimes brutal surroundings. From self identity, he moves toward an understanding of himself as a member of a family.

From the family, the class turns to the neighborhood. The teacher has made with cardboard a facsimile of the community, with houses and streets representing each child's home. Using this model, the child locates where he lives, and says, "This is my house. I live at 1416 South Laredo Street."

The first content area the children are taught in this program is science, utilizing modified AAAS science materials. Science was chosen because it proved to be more culture-fair. It deals with impersonal facts and ideas generally unrelated to the children's previous experiences. Of course, these children are aware that they are different, that they somehow have less than many other children.

For the science content, the pattern for the talk is "This is . . . ." Working from the five senses and with the pattern, "This is . . . .", the words begin to flow. From many objects brought into the classroom, the children
learn: "This is rough. This is smooth. This smells fragrant. This is cinnamon. It smells spicy. This is a lemon drop. It tastes sour. This is fruit. It tastes sweet. This is peppermint. It tastes sharp and clean."

By talking about and learning about an impersonal subject like science, they gain language proficiency and confidence which enables them to move toward learning about social studies and how they (the children) fit into the larger world beyond their neighborhoods.

Reading in two languages is introduced early, as the experiences in the classroom unfold. The language of reading materials is the same as that which the children have learned to understand and use orally, so they quickly begin to read. Subject materials are taught in both Spanish and English, at separate periods during the day.

What system is used for reorganization of content for the bilingual child?

The following outline is an example of such a reorganization of curricular content for the bilingual child and is the general procedure for the development of bilinguistic materials by the SWEDL Language Program.

1. For each of the disciplines to be taught through the medium of standard Spanish dialect and English as a second language, the content is analyzed to determine the special basic abilities it requires, considering: (a) its value to education; (b) the inherent structure of the subject matter area; (c) the various symbol systems, e.g., the vocabulary of the physical, biological, and social sciences, the numerals and signs of mathematical processes; (d) various relevant methods of instruction for this content,
e.g., hypothesizing, experimentation; (e) the types of problems it solves; and (f) the kinds of inquiry which it fosters.

2. The major topics to be learned are selected and a sequence determined for presenting them. This is done by surveying topics in the Content Guide and supplementary reinforcement and enrichment materials. Decisions are then made in accordance with the developmental level of the learners. This includes the physical, emotional, experiential, and achievement levels, as well as any other characteristics unique to the group. For example, the topical sequence in the study begins with the process of observation: identifying shapes, components of shapes, color, size, and texture. The next major topics deal further with the development of sensory perception: sounds, odors, flavors; then on to space-time relationships.

3. Next, there is set up a hierarchy of the thinking processes to be developed within each topic. These are objectives which are formulated from understandings and abilities around which specific lessons are then designed. Such a hierarchy begins with the most basic and concrete types of thinking, developing up into the more complex and abstract and leading to the formation of concepts.

4. The fourth step in materials development is the identification of the specific terminology and symbolism inherent in the material to be learned. The vocabulary, then, must be couched in structure models which are chosen on the basis of frequency and usefulness to the learner. These are as simple and explicit as possible in both
languages and are representative of linguistic expressions which are typical and acceptable to the educated group in both the Spanish-speaking and the English-speaking communities. With reference to the foregoing, the linguistic considerations include:

a. **Syntactical**: development of basic sentence structures.

b. **Morphological**: development of inflections and derivational forms.

c. **Phonological**: development of patterns of sounds, stress, and intonation in Spanish and English, with particular emphasis on sound combinations occurring in one language and lacking in the other.

d. **Functional**: development of basic patterns which the children will need in order to:

   (1) handle basic communication in Spanish and English;

   (2) describe and learn about their environment in both languages; and

   (3) achieve at least a fair chance for success in beginning reading instruction in both languages.

5. All early learning experiences are accompanied by concrete representations illustrating the meaning of the concepts being developed cognitively and expressed linguistically. By actively experiencing through the senses, i.e., observing, handling, rearranging, matching, smelling, tasting, and feeling, the meanings of the language and the relationships being expressed are firmly established and reinforced.

6. Finally, the development of step-by-step procedures for teaching language patterns is established. The methodology includes audio-
lingual techniques providing a variety of language reinforcement
drills. These procedures for language teaching are written in
detail in the sequence to be followed by the teacher. Where lin-
guistic problems are anticipated, provisions are made by suggest-
ing remedial drills, games, exercises, and activities. The
language development methodology includes:

b. Substitution drills.
c. Transformational grammar techniques: statement to question.
d. Positive to negative.
e. Negative statement to negative question.
f. Application and reinforcement procedures: directed dialogs--
role playing.

What research-based evidence supports
the development of this program?

The literature reveals that a number of researchers have done inves-
tigations on the nature of language learning. Ideational fluency and
expressional fluency are best developed from a baseline of concrete, sensory
experiences which give meaning to abstract symbols, including those of the
language system. The literature emphasizes the importance of psychological
factors in the learning of the language.

Due to the fact that speaking a language is a skill, the teaching and
learning of it require habituation through various repetitions and occasions
for usage. Since the initial phase of learning to speak a language is the
most difficult, instruction should be purposeful, structured, and intensive.
The problem of contextual environments of words is one of the most difficult and important factors in establishing linguistic command.

Research on language learning has been restricted by the lack of appropriate evaluation instruments. The need is particularly acute for assessing the language of young subjects at the preliterate stage.

Bloomfield's principal recommendations of twenty-five years ago are:

1. whatever the rationale, the learning situation in early stages should be designed so that the perception of a printed word is conditioned to a previously established phonetic habit, instead of trying to condition an oral response to the printed word; and
2. the child should be given an awareness about the nature of orthography, for he may easily develop letter-sound generalizations earlier than is expected, particularly in his native language, and he may need reassurance when his generalizations seem to misfire.

Progress in reading for children who are required to begin their formal education in a second language depends upon progress in speaking the second language, and especially upon vocabulary development. Oral language development, therefore, should run well ahead of reading instruction at all stages.  

The Horn Study

In 1964, Horn began a research study designed to determine the load-carrying elements in developing reading skills for disadvantaged Spanish-speaking children. This research was one of twenty-seven national studies concerned with

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2 Thomas D. Horn, "Three Methods of Developing Reading Readiness in Spanish-Speaking Children in First Grade," The Reading Teacher, 20 (October, 1966), 38-42.
with approaches and practices in beginning reading instruction. Only three of the twenty-seven studies involved Spanish-speaking populations and only this study is being continued as a longitudinal operation. A basic premise of this research was the establishment of fluency in oral language, English and Spanish, prior to the beginning of formal instruction in reading, thereby undergirding the child population linguistically, experientially, and cognitively, to bridge the great gulf of disadvantagedness separating them from success in school. The subjects of the study were nine hundred first graders representing the most disadvantaged school population group of the San Antonio Independent School District. These subjects were ninety-nine percent Spanish-speaking. Most of them came from families having less than $3,000 annual income, and an average family membership of 5.4. Beyond the implicit socio-economic problems caused by these factors, the children were also subjected to cultural sanctions which negatively affected learning.

Procedures

Twenty-eight first grade classrooms were arbitrarily assigned to one of the three treatments for an instructional period of 140 days: (1) nine classrooms to oral-aural English; (2) nine classrooms to oral-aural Spanish (all teachers of this treatment spoke both English and Spanish); and (3) ten classrooms to no oral-aural treatment. The treatments were as follows:

1. Experimental Groups 1 and 2 were given intensive language instruction in English (hereafter referred to as OAE) and Spanish (hereafter referred to as OAS), respectively, using "culture-fair" science materials with audio-lingual techniques. This instruction of one
hour a day replaced readiness instruction of one hour rather than
being given in addition to such time allotments. Consultant
services were provided weekly by members of the project staff for
materials and in use of the audio-lingual techniques in English and
Spanish.

2. The third group, a control section, was given no intensive language
instruction (hereafter referred to as HOA) while using the same
"culture-fair" science materials as the two experimental groups.
This was considered the "regular" science time allotment rather
than reading readiness. Weekly consultant services were provided
by the project specialist in elementary school science. The
"regular" readiness program outlined by the school district was
followed in preparation for use of locally adopted basal reading
series (Ginn).

3. A fourth group was needed due to "contamination" of the original
controls by teacher interaction and adaptation of experimental
materials and methods, and sampled classrooms from all socio-
economic levels. This placed the disadvantaged pupil population in
perspective with the total pupil population.

Assessment Instruments

The large number of zero scores attained by the San Antonio population
on the instruments used by Cooperative Research Projects in the pre-testing
clearly demonstrates the inappropriateness of most available standardized
tests for the project population. Since little work has been done in
language teaching or testing in English as a second language for children who do not yet read or write, research data and test materials designed for other groups had to be used. However, tests were developed which were able to discriminate between treatments—the Spanish-English Level of Fluency Test and the Brengelman-Manning Linguistic Capacity Index. The Ott study will be discussed below.

Further conclusions will have to await completion of analysis of data at the end of the third year and succeeding years, as well as additional data yields from new and appropriate instrumentation.

### The Ott Study

The Spanish-English Language Fluency Test (SELF) was administered in September to seventy-five first-grade subjects in four schools participating in Horn's Language Research Project. The subjects of this study were selected on the basis of the criteria: (1) no score lower than seventy on the Goodenough-Harris Draw-A-Man Test; (2) no age greater than 7.0 as of September 1, 1965, and no previous formal first-grade instruction; (3) little or no functional use of oral English; and (4) present in class and physically well enough to potentially participate in both pre- and post-tests. Because

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of pupil mobility, only twenty-nine remained in each of the treatments for the May testing: (1) Oral-aural English (OAE); and (2) No-oral-aural (NOA).

Part I of the Ott-Jameson Test, Phonemic Analysis, consisted of fifty-four response items. For each of these response items, one of three possible ratings was provided: (1) correct; (2) minimum phonemic change (predicted error); and (3) no response / response error not the predicted one / response not identifiable. In Part II, Fluency Analysis, there were twenty-nine questions (total possible responses, twenty-nine) to which responses varied from one word, a phrase, sentence, series of sentences, and/or combinations of these. Part II yielded the following information: (4) total number of responses; (5) from the sum total, the number of responses using Spanish intonation; (6) total word count with Spanish intonation (7) from the sum total, the number of responses using English intonation, and (8) total word count with English intonation.

All scales were quite reliable (p<.01) for the total sample with the exception of variable 2, Minimum Change, Part I (r=.23). Closer examination of individual scores revealed that the two groups clustered separately regarding low scores and diverged toward higher scores, such that when combined, their accumulated variance deflated the r. Considered separately, however, the scale appears to be quite reliable for each group (OAE: r=.55, p<.01 and NOA: r=.63, p<.01).
Analyses of the SELF test data

Mean number of correct responses (Table I): The analysis of variance for the first variable, Number of Correct Responses (phoneme test), clearly indicates the striking effect of the experimental treatments upon the performance of the pupils. For instance, the Experimental group increased approximately twenty-one responses from September to May, while the control group increased eight. Since the NOA group did not receive special instruction in language, but followed typical approaches which do not include intensive language instruction, they may be considered as a baseline group for the purpose of this analysis. Admittedly, no attempt was made to establish parametrically such a baseline; however, the relative influence of the oral-aural treatment is easily ascertained by comparison with this control group.

In September, the Number Correct Response variable indicates the initial superiority of the NOA group. This difference is considered a chance difference, since selection of all subjects was based on the same criteria. What is important, however, is the direction of the change. The slope of the lines here describes the performance of these two groups on the pre- and post-tests.
Table I. Spanish-English Level of Fluency, Part I: Repeated Measures Analysis of Variance of Number of Correct Responses

<table>
<thead>
<tr>
<th>Source</th>
<th>M. S.</th>
<th>D. F.</th>
<th>F</th>
<th>P</th>
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<td>TOTAL</td>
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<td>57</td>
<td>&lt;1.0</td>
<td>n.s.</td>
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<td>error</td>
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<td>WITHIN SUBJECTS</td>
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<td>Groups x Periods</td>
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<td>68.16</td>
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<tr>
<td>error</td>
<td>16.39</td>
<td>56</td>
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Mean Number of Correct Responses, by Group and Testing Period

- OAE: 26.41 in September, 39.45 in May
- NOA: 18.79 in September, 34.66 in May
Mean total responses, English intonation (Table II): What is more important for the purpose of this investigation is the number of responses using English intonation given by each group, both before and after instructional treatment. The Experimental subjects increased about seventeen English intonation responses, while the control group increased only about four responses. Since the purpose of the oral-aural approach is to provide the learner with improved skills in the language spoken, the significance of this interaction of groups by periods is highly important (p<.001). For example, it is not enough to simply reduce the number of Spanish intonation responses by the child, if he is not at the same time provided with developmental procedures for increasing his skill in the use of acceptable "standard" English.

Mean word count, English intonation (Table III): This variable, word count of English intonation responses, is the most dramatic in terms of differences between groups. It is interesting to note that in September the groups were very nearly equal. The NOA subjects increased the average number of words spoken in English intonation by sixteen units as a result of traditional teaching methods. The OAE groups receiving intensive language instruction using audio-lingual techniques increased the number of words spoken in English intonation over ninety. Both Groups (F=7.82, p<.01) and Groups by Periods (F=26.56, p<.001) indicate the high degree of significance of this finding.
Table II. Spanish-English Level of Fluency, Part II:
Repeated Measures Analysis of Variance of Number of Responses, English Intonation

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<th>F</th>
<th>P</th>
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<tr>
<td>BETWEEN SUBJECTS</td>
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<tr>
<td>Between Groups</td>
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<td>WITHIN SUBJECTS</td>
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<td>Within Periods</td>
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<td>328.95</td>
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<td>85.91</td>
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Mean Total Responses, English Intonation, by Group and Testing Period

Mean: 9.07, 14.41, 22.38
### Table III. Spanish-English Level of Fluency, Part II:
Repeated Measures Analysis of Variance of Word Count, English Intonation

<table>
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<td>WITHIN SUBJECTS</td>
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<td>.001</td>
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<td>Groups x Periods</td>
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<tr>
<td>error</td>
<td>1505.45</td>
<td>56</td>
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Mean Word Count, English Intonation, by Group and Testing Period

- **OAE**: 21.48 (Sept), 111.72 (MAY)
- **NOA**: 20.79 (Sept), 36.69 (MAY)
Conclusions: The important implication of this study is that the language power of content, rich in concepts and developed through varied and interesting learning experiences, needs to be added to the proven effectiveness of specialized language teaching techniques to move school beginners of Spanish-speaking backgrounds farther ahead, educationally, than ever has been attained through other educational methods.

The main objective of the program is to encourage the use of language with fluency and power, and to open an intellectual world to the children. At present, bilingual materials are being field tested further at three sites in Texas, in New York City schools, and in San Diego, California schools. After initial field testing, the materials were introduced for the Mexican American, and will be later modified for the Negro and Louisiana French-speaking pupil populations.


INFORMATION CONCERNING THE LANGUAGE RESEARCH PROJECT

THOMAS D. HORN, DIRECTOR

THE UNIVERSITY OF TEXAS AND
THE SAN ANTONIO INDEPENDENT SCHOOL DISTRICT

The following materials can be obtained by writing to Dr. Richard D. Arnold, Assistant Director, Language Research Project, 205C Wooldridge Hall, The University of Texas at Austin, Texas 78705.

Language Unlimited, 16mm. black and white film, $65.00 plus postage.


Horn, Thomas D., A Study of the Effects of Intensive Oral-Aural Spanish Language Instruction, Oral-Aural English Language Instruction, and Non-Oral-Aural Instruction on Reading Readiness in Grade One. Austin: The University of Texas, 1966. $2.50 plus postage. Out of Print.


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February 1, 1968