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BILINGUAL SPECIAL EDUCATION: SPECIFIC LEARNING DISABILITIES IN LANGUAGE AND READING

Jorge A. Maldonado

Note: Every attempt has been made to maintain the integrity of the printed text. In some cases, figures and tables have been reconstructed within the constraints of the electronic environment.

Introduction

Due to the implementation of Public Law 94-142 in 1975 (The Education Act for all Handicapped) and the Rehabilitation Act of 1973, Section 504, the individual needs of exceptional bilingual students have received much needed attention (Ortiz & Ramirez, 1988). As a result, a process for providing special education to meet the individual needs of each student with disabilities was started. Since then, more than 4 million students have been identified as having some type of disability (Ortiz & Ramirez, 1988).

The struggle for equality was the precursor of the Civil Rights movement of the '60s. This act provided the legal support for special education as well as for bilingual education. In the beginning, these educational services were delivered separately and without a common goal. Due to the increasing number of minority students during the past decade, particularly Hispanics, states were mandated to provide services for students with disabilities and limited English proficiency (LEP). States such as California, Texas, Florida, New York, Massachusetts, Connecticut, Michigan, Illinois, and Ohio, in which the population of minorities has increased significantly, have initiated Bilingual Special Education programs (Ortiz & Ramirez, 1988). As a result, there has been a push to combine both bilingual education and special education to meet the needs of bilingual exceptional students across the nation.

A great number of cases of bilingual students with disabilities are classified as having learning disabilities and mental retardation (Ortiz & Ramirez, 1988). Most of the provision of special education services for these students takes place in self-contained and resource room classrooms. Due to the shortage of teachers in both bilingual and special education, most bilingual exceptional students receive instruction solely in English. Many problems may occur as a consequence of these students not receiving instruction in both their native language (L1) and their second language (L2). Some of the major issues are: (a) language delay in both the native language and second language, (b) delay in the acquisition of reading skills in both the native and second language, (c) learning problems related to the lack of instruction and appropriate transition from the native language to the second language, (d) behavior problems associated with experiences of failure either in regular or special education, (e) increasing number of at-risk and drop out students due to the lack of appropriate instruction in the L1 and L2, (f) cultural identity problems, and (g) poor self-esteem problems associated with cultural factors (Omark & Erickson, 1983).

Taking these data into consideration, this research study analyzes the treatment of language and reading disabilities of ten bilingual students with learning disabilities receiving integrated bilingual special education. In addition, this research study compares the achievement between the experimental group (ten bilingual students with learning disabilities receiving integrated bilingual special education) and a similar control group who did not receive the treatment.

The Purpose of the Study

The purpose of this study is to examine the use of the native language when providing appropriate instruction to bilingual students who have specific learning disabilities in language and reading. Native language instruction and second language instruction teaching strategies are combined under an integrated bilingual special education model of dual language instruction. The transition process from L1 to L2 is demonstrated as is its importance in meeting the needs of bilingual students with learning disabilities.

Review of Related Literature

Research in the areas of special education, bilingual education, language acquisition, and reading instruction have demonstrated a significant need for native language development when teaching bilingual students with disabilities. This research review is divided into three parts to address the significant issues raised across studies in the area of bilingual special education. These areas include: (a) L1 and L2 acquisition and reading instruction, (b) empirical and legal issues of bilingual special education, and (c) significant studies in the role of the native language in second language acquisition.

L1 And L2 Acquisition and Reading Instruction

Children acquire language through a process of natural use in real life experiences. Similarly, second language is also acquired by way of natural use in real life experiences. First, L1 and L2 acquisition require conversations with someone, either an adult or another child, within a social context. A social exchange creates language (Kessler, 1986). Second, the development of social communication skills requires the conversion of sounds into meaningful patterns for understanding. This process and its many components take both time and experience; it is not simply a matter of processing sounds (Kessler, 1986). Third, these sounds are connected to words, sentences, and social context. Finally, a complex thought process is needed to use effectively one or two languages within a bicultural or multicultural social context (Kessler, 1986).

Children developing second languages incorporate advanced cognitive skills which relate to their chronological ages and environmental experiences and which are influenced by their perceptions of L1 and L2. These perceptions are the result of their biological, environmental, and cultural make up. Also, these perceptions make up some of their personality traits and characteristics. This developmental context creates a positive or negative view of self in relationship to the individual's bilingual/bicultural background (Hakuta, 1986).

In this country the focus is on the development of the second language because the majority of the population is monolingual English speaking. Less attention is given to the acquisition and maintenance of the native language and culture (Miller, 1984).

When addressing the needs of bilingual students with learning disabilities, it is necessary to understand the theoretical differences between the two levels of language proficiency pointed out by Cummins (1984).

These are: Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP). Cummins (1984) researched these two levels of proficiency and discovered that children may be proficient in the BICS in English, but they may experience difficulties with the CALP.

Bilingual students are often lost between these two levels of proficiency in L1 and L2. Language interference results from inadequate development of L1 and L2. These interferences may result in the inability to achieve the native language or English as a second language. Moreover, learning styles are influenced by the child's culture which differs from the majority culture in a variety of ways (Duran, 1988). For example, the ways children develop study habits, reading practices, and writing skills are influenced by their home and culture. In some cases parents establish as a custom reading and studying with their children or a time for supervised homework (Cummins, 1984; Baca & Bransford, 1982). For these reasons, the native literacy approach can be effective when meeting the needs of language minority students. The native literacy approach facilitates the development of proficiency in L1 and enables children to make the transition to L2. The advantage of this approach is that a child's native language and culture are acknowledged and are the main focus of instruction (Duran, 1988; Cummins, 1984; Baca & Bransford, 1982). For Hispanic students this means that language development takes place in both L1 and L2, and their culture remains as a valuable source for daily instruction. This process is implemented by teaching the child how to read in L1 first. English is taught orally or through a whole language approach, and the reading in L2 is taught after this process has been attained. In most cases when this process is carefully implemented, the child can simply transfer the language and reading skills (BICS and CALP) developed in L1 and apply them to L2 successfully (Baca & Bransford, 1982; Plata, 1982). In some instances, this process can be implemented by using dual language instruction or bilingual strategies. L1 and L2 can be either taught partially during the day or during periods for reading and language in the content areas (Baca & Bransford, 1982; Plata, 1982).

Reading is a complex process involving neuropsychological functions, cognitive abilities, and linguistic abilities. To be able to read, a student needs appropriate vocabulary development, perceptive-conceptualization skills, and retention abilities. The teacher is responsible for assuring that these abilities are incorporated into the reading process. If these cognitive abilities have been acquired in L1, the child is ready to begin reading instruction in L1. If L2 reading instruction is introduced without the development of BICS and CALP in L2, the child is more likely to be unsuccessful in L1 and L2 reading. When the child is ready to begin L1 reading instruction, the process flows naturally, and this readiness helps to facilitate the application of reading skills in L1 and L2. It is essential to establish language proficiency in the two languages before reading instruction is introduced (Carrasquillo & Philip, 1984; Sanchez, 1972).

Reading is only one aspect of language. The skills used by children in language development may also be used in learning to read. Children learn language arts skills holistically or in a skill-by-skill approach depending on their learning style. Competence in listening and speaking may precede competence in reading and writing. Children learn to discriminate sounds, letters, and words by becoming acquainted with different features. Children move from a level of perception to an awareness of the internal patterns of words by applying letter-sound relationships from known words to unknown words. The level of literacy to which children develop competence in oral language influences their recognition of the language they read. Bilingual children experiencing their first school experience cannot separate the two language codes and may become confused. This confusion results in a lack of comprehension which causes a barrier to successful reading. Bilingual children must first develop reading skills in L1 and oral language proficiency in L2. Reading skills in L2 come later in the transition process from reading in L1 to reading in L2, or when this process has properly taken place, the children can then transfer or apply reading skills in L1 to L2 effectively (Carrasquillo & Philip, 1984; Sanchez, 1972).

On the other hand, this process is controlled by each individual's learning style and human diversity. In some cases teachers may observe children who can develop literacy in L1 and L2 simultaneously (Cummins, 1984; Carrasquillo & Philip, 1984).

The transition from reading in L1 to reading in L2 occurs when the child has acquired the mechanism for reading in L1 as well as the basic comprehension skills in L1. These skills are then transferred to L2 because they are the same in both languages. The differences exist in the sound system which is the phonology of language and in decoding the symbols in written language. Both the sound system and decoding symbols make possible the relationship between sounds and written symbols when reading a given printed word (Hakuta, 1986; Ovando & Collier, 1985).

The teacher may facilitate the transition in reading from L1 to L2 by making the distinction between both languages using contrastive analysis. This approach enables students to understand the differences in the sound system and decoding skills of both L1 and L2. For example, when children learn vowel and consonant sounds in Spanish, they can transfer these concepts into the English language. The teacher can point out that there are five vowels in Spanish, and using contrastive analysis integrated with other teaching strategies, can show that the same vowel sounds exist in English. However, in English a distinction exists between lax and tense vowels. The same process applies to teaching consonants, consonant blends, and digraphs using a holistic or skill teaching approach (Carrasquillo & Philip, 1984; Douglas, 1981).

Once children have acquired the reading mechanism they are then able to develop reading comprehension. The reading mechanisms and comprehension skills are transferable to L2 when the child is ready for transition (i.e., after mastering these skills in L1 or when L1 and L2 have been developed simultaneously) (Hakuta, 1986; Ovando & Collier, 1985; Douglas, 1981).

Ramirez (1991 & 1992) reports the findings of a longitudinal study of three bilingual education models (i.e., Structured English-Immersion, Early-Exit, and Late-Exit Transitional Bilingual Programs). This study was conducted and funded by the U.S. Department of Education. The major findings of this research study suggest that providing LEP students with substantial amounts of L1 does not interfere with or delay their acquisition of L2. On the contrary, children who receive L1 instruction acquire higher levels of proficiency in L2 than those children who are not exposed to L1 development. Another finding suggests that bilingual students can develop literacy in L1 and L2 simultaneously.

Cummins (1992) analyzes the same study from a theoretical perspective. Cummins (1992) states that

There is considerable evidence of interdependence of literacy-related or academic skills across languages such that the better developed children's L1 conceptual foundation, the more likely they are to develop similarly high levels of conceptual abilities in their L2. The moderate to strong correlation between academic skills in L1 and L2 suggests that L1 and L2 acquisition are manifestations of a common underlying proficiency. (p. 95)

Dolson & Mayer (1992) examine the findings of this study from a critical perspective. Their critiques of the findings suggest there is enough evidence to support the effectiveness of L1 reading instruction to achieve L2 reading literacy. L1 reading skills are transferred to L2 when children are ready on the basis of their individual learning styles and human diversity. On the other hand, reading literacy skills in L1 and L2 can be developed simultaneously within an integrated dual language instruction program or integrated bilingual education program.

Empirical and Legal Issues of Bilingual Special Education

During the past ten years many empirical and legal issues related to the education of bilingual students with disabilities have received special attention and litigation.

This section reviews some of the most important issues in the legislation favoring bilingual students with disabilities. In addition, alternative models for assessment and individualized instruction for bilingual students with disabilities used in this research are analyzed.

Duran (1988) pointed out that the right for appropriate special education services to bilingual handicapped students was specifically established with the passage of Public Law 93-112, The Rehabilitation Act of 1973, Section 509. The Act states that:

No otherwise qualified individual in the United States as defined in Section 7(6) shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. (p. 188)

Public Law 94-142 of 1975 (The Education Act for all Handicapped (EAH), now Individuals with Disabilities Education Act (IDEA) of 1990) mandates the education of all handicapped children in the least restrictive environment. Clearly, the provision of this environment, in the case of bilingual exceptional students, requires the use of their native language to facilitate the appropriate educational process for the development of their capacities to the maximum extent possible (Fradd & Tikunoff, 1987; Cegelka, Lewis, Rodriguez, & Pacheco, 1986; Plata, 1982).

In spite of these federal laws, the majority of special education programs as presently structured do not meet the needs of limited English proficiency exceptional students. Public Law 94-142 does not address the language of instruction issue. As a consequence, most special education programs are conducted in English. Total language immersion programs for students who have an exceptionality are inappropriate and do not provide the least restrictive environment mandated by federal laws. Also, these programs jeopardize the main principle of effective learning: the learner's ability to understand and interact with what is being presented (Ortiz & Ramirez, 1988; Duran, 1988).

When providing services to LEP exceptional students, it is necessary to consider the assessment process steps as well as the steps for the implementation of individualized instruction.

Plata (1982) recommended the following steps for the assessment phase: (a) referral for special education data, (b) assessment of home language, (c) determination of language proficiency, (d) establishment of language for intensive assessment purposes, (e) in-depth assessment of speech and language L1 and L2, (f) administration of complete assessment battery in both L1 and L2, (g) cultural assessment, (h) presentation of a final report to the multidisciplinary team for consideration, and (i) decisions made by the team about placement and instruction.

Ortiz (1984) proposed the following steps for the implementation of individualized instruction for LEP handicapped students. These include: (a) planning with parents, teachers, and bilingual special education specialists; (b) becoming familiar with the child's native language and culture; (c) identifying special needs; (d) developing an IEP, which reflects assessment results and steps 1 through 3; (e) individualizing lessons to address exceptionality problems; (f) individualizing instruction for language and culture; (g) using resource staff and coordinating services; (h) conducting ongoing evaluation; (i) parental involvement; and (j) student-

centered instruction. Some of the steps in the assessment and individualized instruction models were incorporated in the development of this study.

Significant Studies in the Role of the Native Language in Second Language Acquisition

Several studies show that many skills in language and reading are transferable from one language to another (Ramirez, 1991 & 1992; Fradd & Tikunoff, 1987; Cummins, 1984). Even in languages that do not use the same writing system, researchers have found that general strategies, habits, attitudes, knowledge of text structure, rhetorical devices, sensorimotor skills, visual-perceptual training, cognitive functions, and many language and reading readiness skills transfer to L2 reading (Ramirez, 1991 & 1992; Fradd & Tikunoff, 1987; Cummins, 1984). Students who are literate in L1 progress much faster in L2 reading than those who are nonliterate in their L1. This offers ample reason for special education programs to use L1 as the language of instruction when the child's handicapping condition and functioning levels require it (Ramirez, 1991 & 1992; Fradd & Tikunoff, 1987; Cummins, 1984).

Ovando & Collier (1985) describe Cummins' research in second language learning. According to Cummins' research, school personnel often test LEP students and assume full proficiency in English on the basis of context-embedded face-to-face communicative proficiency or Basic Interpersonal Communication Skills (BICS). This level of English proficiency involves the ability to use complex conversation using contextual cues (i.e., gestures, intonation, and body language) and social context for meaning. This level of language proficiency normally takes two years of development. In most cases, the student may sound like a native speaker of the language, but this privilege is limited to the use of BICS only.

On the other hand, Cognitive Academic Language Proficiency (CALP), requires language in context-reduced and high-cognitive skill levels. This type of framework can be observed within a social-cognitive context. Cummins (1984) found that when LEP students receive instruction in L2, the process of language acquisition in L2 takes them from 5 to 7 years to achieve accepted age-grade norms in reduced context components of English proficiency. Moreover, skills in reduced context language in L1 naturally transfer to the L2 (Ovando & Collier, 1985). For this reason, minority students should receive an appropriate L1 development incorporating BICS and CALP, while the development of BICS in L2 takes place simultaneously. Once they have acquired BICS and CALP in L1 and BICS in L2 they are ready to transfer L1 CALP to L2 CALP (Cummins, 1984).

Ortiz (1984) describes four basic types of Bilingual Special Education Instructional Delivery Models that can allow bilingual students with learning disabilities to achieve higher proficiency levels of BICS and CALP in L1 and L2. These models are:

Bilingual Support Model: Bilingual paraprofessionals are teamed with monolingual English-speaking special educators and assist with the IEP implementation. The teacher assistant provides native language instruction in areas specified in the IEP as requiring L1 instruction.

Coordinated Services Model: Handicapped LEP students are served by a team consisting of a monolingual English speaking special education teacher and a bilingual educator.

Integrated Bilingual Special Education: This model is used when a district has teachers who are trained in both bilingual education and special education. These dually certified teachers provide special education instruction in the native language, provide ESL-English as a second language training, and assist in the transition into English language instruction as the child develops adequate proficiency. This model was used

in this research study.

Bilingual Special Education Model: is an integrated model in which the entire personnel and school focus on bilingual special education instruction and services. All professionals have been previously trained in bilingual special education. The LEP students receive all services needed to accomplish their goals and objectives established in the IEP.

The integrated bilingual special education model was implemented in this study. Also, some elements of the bilingual special education model were incorporated. For example, psychological services and administrative support were provided using this model.

Up to this point, the effectiveness of bilingual special education programs in theory and practice has been demonstrated through the research literature. From this point on some of the major and recent studies supporting L1 instruction will be discussed.

Medina and Garza (1989) found that reading achievement for a group of Mexican American students was significantly higher when L1 reading instruction was provided. When they compared both groups, group 1 in an English only program, and group 2 in a bilingual transitional program, group 2 achieved significantly higher in reading English proficiency and also attained proficiency in English faster than group 1. These results strongly suggest that reading instruction in L1 promotes early acquisition of L2 across all the language areas.

Similar results were encountered by Carrasquillo (1991). In her review of the research literature, she found that success in learning a second language is defined by the degree of performance in the native language. Children transfer to the second language the system of meanings and use what they already know from their native language. Throughout this research, there is a strong focus on second language learners being able to achieve more when they are initially encouraged to acquire concepts, vocabulary, and proficiency in L1. By doing so, second language learners expand cognitive and academic skills.

Finally Padron (1988) examines the cognitive reading strategies that second grade bilingual students use while reading texts in Spanish and how some strategies are applied to reading texts in English. The findings indicate that bilingual students in second grade use more cognitive reading strategies in English than in Spanish. Early instruction of cognitive reading strategies must take place in the early stages of the reading process. This study also shows that students who do not receive appropriate reading instruction in L1 have more problems in developing cognitive reading strategies that can be transferable across languages than do students who receive reading instruction in L2.

For example, one of the most frequently used strategies reported in the findings was translation. When children have acquired BICS and CALP in L1, these skills are transferable to L2, facilitating their reading comprehension of any text. In this study, it was demonstrated that when children are forced into L2 instruction without developing appropriate L1 instruction, problems like bad translation habits may develop.

Other strategies that have been successful and frequently used are rereading, imaging, changing speed, self-generated questions, and students' perceptions of teacher's expectations. As was reported in the study the application of these strategies varied depending on the text and language. Also, the inability of these students to transfer cognitive reading strategies when reading English or Spanish texts was reported in the study.

Statement of the Hypothesis

The research evidence strongly suggests the use of native language instruction when meeting the needs of bilingual students with learning disabilities in language and reading.

Furthermore, evidence supports the benefits of the use of the native language in language and reading instruction. English language skills can be developed at a higher thinking level, and language and reading skills can be acquired at a higher cognitive-literacy level through the use of the native language as the medium of instruction.

Research-Directional Hypothesis

Bilingual students with learning disabilities who receive integrated bilingual special education services (using L1 as the medium of instruction) develop higher proficiency levels in L2 than bilingual students with learning disabilities who do not receive integrated bilingual special education services.

Statistical-Null Hypothesis

There are no significant differences in the L2 proficiency levels of bilingual students with learning disabilities who receive integrated bilingual special education (using L1 as the medium of instruction) and bilingual students with learning disabilities who do not receive integrated bilingual special education services.

Method

Subjects

The sample for this study was selected from the total population of fifty bilingual learning disabled students of an inner city elementary school in Harris County, Houston, Texas. The population was Hispanic-Spanish speaking students (see Table 1 for the characteristics of the population.) Twenty students were randomly selected (using a table of random numbers, see Table 2) and randomly assigned into two groups of ten each.

Instrument

The Comprehensive Test of Basic Skills (CTBS, 1977) was the measuring instrument for this study. The Comprehensive Test of Basic Skills (CTBS) is a group-administered achievement test designed to measure pupils' level of attainment of language, numbers, and problem-solving skills required for academic learning. The test consists of two forms, S and T; items are classified by a taxonomy of intellectual skills across the content areas of reading, language, mathematics reference skills, science, and social studies. The test contains seven levels. These levels include language, reading, and math skills taught in grades K - 12.9.

Experimental Design

The design applied in this study was the Pretest-Posttest Control Group Design 1 X 1 experimental design (see Figure 1). Two groups of ten bilingual learning disabled students were each assigned into a control group of ten and an experimental group of ten. A pretest and posttest were given using the CTBS. Changes in the CTBS scores between the control group and the experimental group were analyzed at the beginning (pretest) and at the end (posttest).

Procedure

Prior to the beginning of the 1987-88 school year, before special education classes were formed, 20 of the 50 bilingual students with learning disabilities were randomly assigned to two groups of 10, the special education teacher student ratio; thus, each group became a class. One of the classes was randomly chosen to receive integrated bilingual special education as a treatment (experimental group). The second class was chosen to receive traditional special education. Students in both classes had

Table 1. Characteristics of the population

Social Status	Ethnicity	Gender	Grade	Type of School	Years in Special Ed.	L2 Prof. Level
Middle Class-10 Low Income Class-10	Hispanic Spanish Speaking	F - 10 M - 10	2nd - 10 3rd - 10	Public School	3	LEP

Table 2. Experimental Design

Group	Assignment	N	Treatment	Pretest	Posttest
1					
Control	Random	10	Special Education	CTBS Form S	CTBS Form T
2					
Experimental	Random	10	Bilingual Special Ed.	CTBS Form S	CTBS Form T

similar characteristics in terms of education, experience, age, disability LD, language proficiency, and family background (see Table 1). Language proficiency in Spanish for both groups was at the BICS and beginning CALP level. The language proficiency in English was at the beginning BICS level, based on the LAS Test Language Assessment Scales, English and Spanish versions. Of the three special education teachers, the two with similar backgrounds, i.e., Masters in LD and five years of experience, were selected to teach the classes. One of the teachers was trained in integrated bilingual special education and has had previous experience teaching bilingual students with learning disabilities. The bilingual special education teacher was assigned to the experimental group, and the traditional special education teacher was assigned to the control group.

During the third week of school, a letter with a permission slip attached was mailed to the parents of the children in both groups requesting their participation in the study. The letter, written in both Spanish and English, briefly described the purpose of the study. Immediate return of the permission form was requested.

To avoid making the students responsible for returning the forms, a stamped, addressed, return envelope was included in the material sent to parents. All permission forms were returned within 15 days.

During the three school years of the study, 1987-88, 1988-89, and 1989-90, the two groups were taught in essentially similar classrooms and by similar teachers with different teaching styles. Each classroom had a direct instruction center, a language and reading center, a writing center, a science and social studies center, a listening center, and a creative learning center.

An individualized educational plan (IEP) was written for each student. All students had common language and reading goals and short-term objectives. Both groups received an equal number of hours of language and reading instruction. Throughout the study, both groups used learning centers, student centered activities, and student-teacher created materials.

Treatment for the Experimental Group

The schedule, instructional design, and teaching strategies for the experimental group were taken from the integrated bilingual special education model designed by Ortiz (1984).

Figure 1 Full Day Schedule.

8:00-8:30 A.M.	Opening -- students' independent time: journal writing, learning activities for the day, thematic reading.
8:30-9:00 A.M.	Daily Routine -- drill and practice: alphabet phonics review in Spanish and English, analysis of differences, thought for the day.
9:00-12:00 N	Theme for the month review -- integration of all content areas in relationship to the monthly theme, direct instruction in language, reading, math, science, and social studies as a whole.
12:00-1:00 P.M.	Lunch and Recess
1:00-2:00 P.M.	Shared Reading--group reading, small group reading, and discussion of the readings.
2:00-3:00 P.M.	Learning Centers--independent and group work in the learning centers, programmed activities chosen by the students to reinforce skills learned during the morning.

Instructional Design

The instruction for the experimental group was conducted on three different developmental levels. During the first year (Beginning Year) students used Spanish most of the day with forty five minutes of ESL every day to provide for the mastery of BICS and CALP in Spanish. During the second year (Transitional Year)

dual language instruction was provided (i.e., half of the day in Spanish and half of the day in ESL without using translation to facilitate the transition). Finally, during the third year (Rapid Growth Year) instruction was given only in English as a Second Language.

Teaching Strategies

The teaching strategies applied to the experimental group consisted of applied strategies to bilingual/ESL education. These strategies included demonstration, modeling, high expectations communicated everyday to the students, feedback response, learning centers, direct instruction, whole language experiences, contrastive analysis between Spanish and English, dialogues, repetition, memorization, alphabet through phonics, choral and group reading, discussion, students' responses to learning experiences, process writing, publishing center, guided and independent practice, evaluation, total physical response (TPR), cultural experiences, cooperative learning, and hands-on activities. All of these strategies were fused into a whole and applied within a framework of learning integration, application to daily life activities, and experimentation of uses.

The instruction for the control group was conducted only in English. The schedule and instructional design were provided using the special education model. Some of the teaching strategies were applied in a similar fashion to both groups. But the teaching strategies used with the experimental group were applied to the bilingual dual language instruction and ESL content/context.

During the third week in April of 1990, the CTBS form T was administered to both groups. Following testing, the posttest and pretest scores were analyzed for both groups, and statistical analyses were applied to establish differences in terms of achievement.

Results

These students' proficiency in English, when given the opportunity to develop reading skills and proficiency in L1, allowed them to be successful when being mainstreamed into regular classrooms. These students were also able to perform at the appropriate grade level with only the assistance of a special education teacher consultant. In comparison, the bilingual learning disabled students who were placed in controlled, self-contained, and resource classrooms without native language instruction did not show significant growth.

Achievement scores in language and reading from the CTBS were examined. The means, as well as a t test for independent samples ($\alpha = .05$ and $.01$), indicated that the groups were not equal in the language and reading achievement in the CTBS achievement in English at the end of the school year and at the end of the treatment (see Table 1).

Table 3 - Statistical Analysis

Group			
Test	Experimental	Control	t test
Pretest			
M	60	69	1.086a
SD	4.73	4.48	
Posttest			
M	89	63	3.868b

SD	3.15	4.20	
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Note: Maximum score = 100

a-df = 18, $p < .05$

b-df = 18, $p > .05$ and $.01$

Random assignment of the students to the groups made the t test for independent samples the appropriate test of significance. Results show that the means and standard deviations for the two groups in the posttest differed significantly $M=89 > 63$ & $SD=3.15 < 4.20$ (see Table 3). Therefore, the statistical data analysis supports the rejection of the statistical-null hypothesis and the acceptance of the research-directional hypothesis. Bilingual students with learning disabilities who received integrated bilingual special education services (using L1 as the medium of instruction) developed higher proficiency levels in L2 than bilingual students with learning disabilities who did not receive integrated bilingual special education services. The t test showed a significant difference at the $.05$ and $.01(3.86 > 1.08)$ levels for the experimental group in the posttest. This level of significance established the difference in terms of achievement in English proficiency (language and reading) for the experimental group after receiving the treatment. An integrated bilingual special education program which includes the components discussed in the treatment section can provide bilingual students with learning disabilities a unique opportunity for meeting their individual needs.

Discussion

The results of this study strongly support the research hypothesis. The experimental group achieved higher levels of proficiency in English as a result of the integrated bilingual special education program. The native language instruction and cultural development increased self-esteem levels, learning abilities, and expectations of these bilingual students with learning disabilities. Second, the achievement level attained by these students allowed them to increase their grade functioning level to the chronological grade level where they are expected to be. As a result, a follow up study was conducted during the 1990 91 school year. The results of this follow up indicated that the ten students who received integrated bilingual special education were successfully mainstreamed during this year into general education classrooms. The students achieved at their respective grade level and competed with their regular peers receiving only LD teacher consultant support.

The results of this study are similar to those of Carrasquillo (1984), Hakuta (1986), Douglas (1981), and Ramirez (1991) concerning language and reading achievement of bilingual students. In addition, this study demonstrated the benefits of bilingual instruction for students with learning disabilities. These research findings suggest to school districts the existing need of providing special education services to bilingual students with learning disabilities. Finally, additional longitudinal studies and program research are needed in this area to empirically support the extension and mandatory implementation of bilingual special education services to all the bilingual students with disabilities needing these programs.

Definition of Terms

Specific Learning Disability (SLD): A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, write, spell, or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, dysgraphia, and dyscalculia (Davis, 1986).

Bilingual Education (BE): An educational program that uses the language and culture of the students to teach the school's curriculum, learning experiences, and English as a second language.

Integrated Bilingual Special Education (IBSE): An educational program designed to meet the individual needs of language minority students. In this program special education is provided through the use of the student's native language and culture. The major components of special education and bilingual education are integrated to meet the needs of bilingual exceptional students.

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Jorge A. Maldonado, EdD, is an assistant professor of special education in the Education Department at the University of Puerto Rico, in Rio Piedras, Puerto Rico.