

The Effectiveness of an After-School Intervention Program for Improving the Reading
Performance of First and Second Grade Latino Students

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Community Need

Historically, students living on the U.S.-Mexico border have had less academic success than students from better funded and economically advantaged schools, thereby requiring additional assistance to compete effectively. Latino students are faced with serious challenges to their academic success, a success that is “dependent on the actions and interactions of educators, families and students themselves” (PACEEHA, 2002).

Research shows that literacy rates among Hispanic students, expected to comprise 25% of all U.S. students by the year 2020 (NCLI, 2004), or nearly 16 million children (PACEEHA, 2002), are low when compared to non-Hispanics. In 2000, the National Institute for Literacy reported that 98% of 17-year-old Latinos could not read to gain information from specialized texts such as newspapers (National Institute for Literacy, 2003) and only 13-26% of Hispanic students were reading proficiently, according to a 1998 National Association of Education Professionals reading assessment (Au, 2002).

In Laredo, Latinos comprise 94% of the population (USCB, 2001) poverty is widespread (32%), and Laredo’s literacy rate at 47%, is the lowest of all cities surveyed in the Census of 2000 (USCB, 2000). Over 90% of Laredoans are bilingual, and despite evidence that children who learn more than one language have greater cognitive flexibility and capacity compared to monolingual children (PACEEHA, 2002), 45% of Laredoans lack a high school diploma and 28% have no education beyond 8th grade (USCB, 2001). All Laredo schools qualify for Title 1 status, further evidence of the great need in this area.

Numerous studies show that before they even start school, children from low-income families lag behind their peers in literacy development. With a student population that is 97.8% Hispanic and 86.1% economically disadvantaged (TEA, 2000), and a full 47% of its citizens having the lowest level of literacy as defined by the U.S. Department of Education (National Institute for Literacy, 2003), Laredo is in a state of critical need and as such, in a unique position to effect significant change if we can address the challenges facing Hispanic students and those providing their education.

In the year 2000, the National Institute of Health and the Institute of Education Sciences spent \$32 million to identify the best ways to help Spanish-speaking children learn to read in English. Their goals included developing specific ways to help children who speak a language other than the language of instruction (PACEEHA, 2003). Moreover, the White House Initiative on Educational Excellence for Hispanic Americans stated that they “do not have clear evidence as to the effect [bilingual education programs] have on the learning abilities of these children” and cited a need for more information on the best teaching methods for Spanish-speaking children in American schools (PACEEHA, 2002).

Because of the complex nature of the problems outlined above, from 2002-2005, the TAMIU Hinojosa Reading Research Center (HRRC) implemented several reading intervention programs in its after-school clinic and in local elementary schools. These

collaborative programs established strong ties between the university and the community and involved continuous training of preservice and practicing teachers.

Despite the apparent need of its programs, operations at the HRRC were discontinued in 2005 because of a lack of funding. Nonetheless, it is hoped that the instructional model developed as a result of the HRRC efforts can be more widely disseminated. In order to do so, further research must be conducted on the effectiveness of this model. The Texas Reading First initiative, for example, mandates that any intervention program used to fulfill its requirements must be scientifically-based. That is, the program must demonstrate its effectiveness through: a) research procedures which are rigorous, systematic and objective; b) the use of empirical methods drawing on observation or experiment; c) rigorous data analysis in order to test stated hypotheses and justify the conclusions drawn; d) methods and interpretation of results which are valid across evaluators or observers and across multiple measurements and observations; and e) research reviewed by a panel of experts using rigorous criteria or accepted by a peer-reviewed journal (Guidance for the Reading First Program, U.S. Dept. of Education, Office of Elementary and Secondary Education, April 2002). The current study attempts to document the effectiveness of the HRRC instructional model through the use of a scientifically-based experimental design.

Preliminary Findings

In order to initially test the effectiveness of the instructional model with a large group of children, an after-school program was established at six Title I elementary schools in Laredo Independent School District during the 2004-2005 academic year. English language learners scoring the lowest on district-wide reading assessments were targeted for the project. Seventy-two bilingual teachers were trained to implement the model in 90 minute blocks, twice weekly for 22 weeks. Instruction was carried out in two languages with all children, one block in Spanish and one block in English, in small groups with a 3:1 student-teacher ratio. Parents of children participating in the program attended four training sessions in Spanish.

For purposes of the current project, data was analyzed for the 75 first graders and 63 second graders who were in attendance from September of 2004 to April of 2005. Preliminary data was gathered using the English and Spanish versions of the Jerry Johns Informal Reading Inventory as pre and post test measures. The difference in mean scores indicates that both the first and second grade students made substantial gains in reading in both Spanish and English, although the improvement of second graders was more accelerated than that of first graders.

As a follow up, in this study an experimental design was carried out to determine if the gain in students' test scores could be attributed to the intervention program. Because the pre and post test measures in the preliminary study were not administered to a control group, it is not certain if the students' gains may have been the result of other factors not related to the HRRC intervention within the district's reading curriculum, at the time of the study. The purpose of the current study is to determine if any differences

found in the intervention students' reading performance is statistically significant when compared to reading scores of students in a control group.

Method

All first and second grade students in LISD were given the Tejas Lee, a state-approved reading assessment in Spanish, in the fall of 2004 and in the spring of 2005. Scores on the word identification portion of the Tejas Lee of those students who were in the TAMIU intervention program were compared with the scores in word identification for a sample of students who did not participate. It was hypothesized that students in the TAMIU program would show higher post test scores on the Tejas Lee word identification section than a control group of students matched by gender, SES level and initial word identification scores.

Participants

In order to control for socioeconomic level, students from the schools participating in the TAMIU reading program were matched with students from those LISD elementary schools which were geographically close to them. Table 1 indicates how the schools were matched.

Table 1
LISD schools participating in the TAMIU reading program and their matched counterpart

| TAMIU PROGRAM SCHOOL | NON-TAMIU PROGRAM MATCH |
|----------------------|-------------------------|
| Bruni | Buenos Aires |
| Santo Nino | Ligarde |
| Kawas | Zachry |
| Farias | Santa Maria |
| Tarver | Sanchez Ochoa |
| Dovalina | Leyendecker |

Those students in the TAMIU program schools comprised the experimental group, while the students in schools not participating in the TAMIU program comprised the control group.

Students were additionally matched by gender and pretest scores on the Tejas Lee. All students from the matching schools with the same or similar pretest scores were included in the control group. Table 2 indicates the number of boys and girls in the final sample in grades 1 and 2.

Table 2

Number of students in the experimental and control groups by grade and gender

| Grade | Experimental Group | | Control Group | |
|-------|--------------------|-------|---------------|-------|
| | Boys | Girls | Boys | Girls |
| 1 | 30 | 25 | 68 | 58 |
| 2 | 15 | 11 | 24 | 26 |
| Total | 45 | 36 | 92 | 84 |

Data Analysis

Pre-test and post-test means were calculated for the experimental and control groups at each grade level. An unpaired t-test was then used to determine if the difference between the two groups at post test was statistically significant.

Results

Table 3 shows the mean pre and post test scores for students in both the experimental and control groups at each grade level.

Table 3

Pre and post test means on the Tejas Lee for students in grades 1 and 2, experimental and control groups.

| Grade | Experimental Group | | | Control Group | | | |
|-------|--------------------|-------|----|---------------|-------|-----|--------|
| | Pre | Post | N | Pre | Post | N | t |
| 1 | 3.64 | 17.91 | 55 | 3.67 | 15.89 | 126 | 1.560 |
| 2 | 4.5 | 7.65 | 26 | 4.5 | 8.94 | 50 | -1.561 |

As the table indicates, the first grade experimental group's mean was slightly higher than the mean of the first grade control group, while in second grade the control group scored slightly higher. Based on the t test statistic, there was no significant difference between groups at either grade level.

Discussion

In this study, scores on the Word Identification section of the Tejas Lee were used to compare students who had participated in the TAMIU reading intervention program during the 2004-2005 academic year with a control group of students who had not participated in the program. It was hypothesized that the students in the TAMIU program would score higher on the post test than students in the control group on this particular measure. However, no significant differences were found in mean scores between the two groups at either grade one or grade two.

It should be pointed out that the students in the TAMIU program had initially been targeted by their teachers as being the students with the most difficulty in their classrooms in terms of their reading skills. The students in the control group, on the other hand, were chosen for the study only on the basis of their Tejas Lee pretest scores. In other words, the students in the TAMIU group were identified by both their scores and their teachers as being in need of intervention. It is unknown whether or not all students in the control group were actually struggling readers. Some of these students may simply not have been good test takers. Students with poor test taking skills often improve over time, as they become more experienced with the “culture” of the test.

Additionally, word identification is only one of many skills involved in learning to read. The TAMIU program emphasized listening comprehension, vocabulary, fluency and reading comprehension, in addition to word identification. The TAMIU students did show impressive gains in scores as indicated in the preliminary analysis of the Jerry Johns Reading Inventory. However, the over-all score for each student in that preliminary study was obtained from three sections; word identification, reading comprehension and listening comprehension. For future studies, other measures besides word identification should be examined in order to obtain an accurate assessment of the students’ reading ability.

Since the results here only indicate how well students performed in Spanish, as a follow-up to this study, the TAMIU students’ scores on the Texas Primary Reading Inventory (TPRI) Word Identification test will be compared to the scores of a control group on that same measure. The TPRI is a district-wide assessment administered in English. Additionally, the TAMIU students’ scores on the Jerry Johns Informal Reading Inventory will be analyzed further to determine in which aspect of reading TAMIU students made the most gains.

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Budget

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