

**The Interaction Between Language Proficiency and Early Reading  
Achievement in Dual-Language Students**

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## 1.0 Introduction

Researchers have long noted that there seems to be a correlation between first and second language proficiency and academic achievement in the first and second languages. This correlation, like any other, has positive and negative manifestations, and much of the research done in this area has concentrated either on the high language proficiency of successful students, or on the often poor academic performance of students with low levels of measured language proficiency. As a result, the paradoxical views of bilingualism as a cognitive deficit and bilingualism as affording cognitive advantages have co-existed in both research and in the beliefs and practices of educators (Gonzalez, 1996).

## 2.0 Review of Research

An extreme view of bilingualism as deficit can be seen in Dunn (1988), who asserts that the low I.Q. scores of Hispanics (specifically, Mexican-American and Puerto Rican students) are due in part to their “linguistic disabilities” and inadequate command of both English and Spanish. These “disabilities” are so severe that Dunn suggests that Hispanic students would benefit from being taught with the same techniques used with mentally retarded students. Conveniently, Dunn is the author of materials designed to do just that.

Other explanations of the relationship between I.Q. or achievement scores and language proficiency are not so blatantly bigoted, but still maintain that, at least temporarily, the acquisition of a second language can slow or stall academic progress. Cummins’ (1979 a, 1979 b) Threshold Hypothesis and the notion of semilingualism require that a student possess high levels of proficiency in both

first and second languages before they can experience the positive effects of being bilingual. A student with low levels of proficiency in both languages will suffer cognitive disadvantages as a result.

These concepts have been widely criticized by those who reject the deficit view and the validity of the measures used. In his criticism of semilingualism, MacSwan (2000) notes that the notion is essentially tautological: students who do poorly on achievement tests and tasks requiring literacy skills also do poorly on language proficiency tests like the LAS, which measure ability to perform linguistic manipulation tasks commonly required only in school.

“Semilingualism,” then, is irrelevant outside the traditional academic context, and is more of a pedagogical issue than a linguistic one. MacSwan maintains that “although there remains no evidence for semilingualism based on the linguistic characteristics of children’s speech, there is good evidence that reputed semilinguals are actually perfectly competent speakers of their native languages.” A detailed comparison of the linguistic performance of three “clinically disfluent” students and three “high-achieving” students (Valadez, MacSwan and Martínez, 1997) revealed no difference between the groups in knowledge and use of syntax, morphology, or expressive language.

Oller, Kim and Choe (2000) offer some support for this point of view by documenting how academic and intelligence tests, even those specifically designed to be “nonverbal,” require the use of language to a degree, and therefore these achievement/I.Q. tests are measures of language proficiency and can be expected to correlate with other language proficiency tests. Cummins (1979 a.)

explains this relationship, as described in earlier work by Oller, as evidence of “cognitive-academic language proficiency” being measured by both types of tests. In their widely cited 1989 study, Commins and Miramontes observed the four students over a period of several months in both school and non-school settings, and found that, although the students varied in their ability to use precise vocabulary in academic situations, they were able to accurately describe abstract concepts such as gravity in detail, and to express themselves effectively in different circumstances. The authors even discovered that, in spite of being reluctant readers in the classroom, these students read widely and enthusiastically outside of it, in their areas of interest. The authors assert that traditional methods of assessing the linguistic competence of bilingual students provide a narrower and gloomier picture of student abilities than is truly the case.

Grosjean (1985, 1989) concurs, remarking that any test developed for, and normed on, a monolingual population can only reflect a fragment of the linguistic ability a bilingual possesses. The expectation that a bilingual should demonstrate linguistic proficiency identical to that of a monolingual speaker of either language ignores the reality of bilingualism: for a given speaker, particular languages are better developed for specific purposes; and language mixing, ignored by all proficiency tests, is a valid and important dimension of bilingual language proficiency. This “monolingual bias” may be responsible for disappointing scores on language proficiency tests and the resulting deficit view of bilinguals.

Dulay and Burt (1980) make similar observations about the varying levels of language proficiency in bilingual children, and the need for determining the educational needs of such children on an individual basis. Valdés and Figueroa

(1994) also noted the variability of language proficiency across domains, and identified a need for diagnostic rather than dominance (labeling) tests to identify specific strengths and weaknesses in both languages.

Different language proficiency tests may not even classify the same students the same way: Ulibarri, Spencer and Rivas (1981) demonstrated that three commonly used language proficiency tests differed in their identification of students as non English speaking, limited English speaking, or fluent English speaking. The tests were not fully comparable. One test, the Language Assessment Scales, demonstrated higher correlations with academic achievement tests than the other two. Schrank, Fletcher and Alvarado (1996) found another three proficiency tests to be similar, but not identical, in their assessments of language proficiency.

Nevertheless, traditional assessment methods are a fact of educational practice. Limits of time, money and personnel demand that assessment tools administered to large groups of students be quickly administered and easily scored. As long as such tools are recognized as the imprecise indicators they are, their use can provide a rough idea of how a particular student compares with others in the group, and may indicate students in need of closer observation and individualized assistance. Such tests also provide numerical results that make comparisons possible and gains quantifiable, both highly desirable qualities for educational administrators and others who need “empirical” proof of program effectiveness.

With these limitations in mind, we may now consider what interrelationships between language proficiency and academic achievement, as

measured on standardized tests, may exist. Many correlational analyses of these factors have been conducted, and almost without exception, these studies have found significant relationships between oral language proficiency scores and academic achievement (usually reading achievement) scores.

Cummins (1979a) compiled the results of nine such comparisons, involving different language pairs and student ages, and found that I.Q. or achievement scores showed high correlations with measures of both L1 and L2 proficiency. He also found that measures of L1 proficiency were strongly related to measures of L2 proficiency. Age also seemed to affect performance on both language proficiency tests and achievement tests. Cummins took these relationships as support for his interdependence hypothesis, and this evidence led to his proposal of the existence of “cognitive-academic language proficiency” that was being measured by both types of test.

Garcia-Vásquez, Vásquez, López and Ward (1997) compared the reading achievement scores of Hispanic middle and high school students with measures of their proficiency in English and Spanish, and found that the highest correlations were between English proficiency and English academic achievement ( $r=.84$ ). Lower, significant, correlations were observed between Spanish reading and English reading ( $r=.24$ ), and no correlation was found between Spanish proficiency and English academic achievement ( $r=.03$ ).

In a similar study, Lee and Schallert (1997) looked at Korean middle and high school students learning English, and found that L2 reading ability was most related to proficiency in the L2, although a significant relationship between L1 and L2 reading achievement was also observed.

Saville-Troike (1991) summarizing her previous research, finds that “reading achievement in English as a second language is more dependent on reading achievement in their native language than it is on relative oral proficiency in English.”

In a study of monolingual English kindergarten and first graders, Speece, Roth, Cooper and De La Paz (1999), found that while oral language proficiency was a significant factor in the development of early literacy, relationships were not uniform, suggesting that other factors also play a part. Waltzman and Cairns (2000) did find that monolingual third graders who were good readers had a more advanced understanding of particular English syntactic constructions than students who were poor readers, although order of causation could not be determined.

### 3.0 Research Questions and Predictions

To date, research about the relationship between first and second language proficiency and academic achievement have been concerned with older students who are already literate in their first language. Studies of language proficiency and reading achievement in younger students have looked at monolingual children only. Yet, an increasing number of children are becoming literate in their second language at the same time as, or soon after, they become literate in their first, and it cannot be assumed that the interaction of factors will be the same for these children as they are for others.

The current study will make comparisons similar to those in the Lee and Schallert and García-Vásquez et.al. studies, to see if similar relationships between

first and second language proficiency and literacy in both languages are evident. In addition, a combined first/second language proficiency score will be compared to the other measures as a rough indicator of how overall language proficiency may be a predictor of reading achievement in either language.

It is predicted that, despite the differences in age and literacy levels between the current study group and previous ones, that the same relationships between factors will obtain. Specifically, a strong relationship between English language proficiency and reading achievement in English is expected, as is a strong relationship between reading achievement in Spanish and reading achievement in English. It is expected that older students will show higher levels of reading achievement and proficiency in both languages. Relationships between proficiency in a language and reading achievement in the opposite language are predicted to play a smaller role, if any. Finally, it is expected that the combined language proficiency score will be a better predictor of reading achievement than either individual proficiency score.

#### 4.0 Methodology

The 28 students in this study group were first and second graders enrolled in a Spanish/English dual language program in an El Paso, Texas school. The students were not randomly selected; all students with a complete set of data were included in the group. The student body at the school was 96% Hispanic and 93% economically disadvantaged, according to Texas AEIS statistics. All students in this study entered school as limited-English proficient.

The program in which they were enrolled was a 50/50 dual language immersion model. Half of each school day was taught in Spanish, and the other



half in English. The class grouped Spanish-dominant, English-dominant and bilingual students together throughout the school day. Instruction included an emphasis on literacy, using Guided Reading strategies, higher order thinking skills, and the integration of literacy and content-area instruction. Students were recommended for the program by parents or teachers, and academic performance was a factor considered in the acceptance of students.

In the normal course of the school year, student progress was measured by a number of formal assessments: all students were given the Language Assessment Scales (LAS) test of proficiency in English and Spanish. English reading and language achievement were measured by the Stanford achievement test, and Spanish reading and language achievement by the Aprenda achievement test. This is the test data used in this study.

The Language Assessment Scales of English and Spanish are commonly used in Texas to identify and measure the progress of limited-English proficient students. The tests are both standardized, and the norming population is reported to be students from grades 1-6 from California, Texas, New York, Illinois and Wisconsin. 33% of these students came from an English home language background, 61% from a Spanish home-language background, and 6% reported another language was used at home. After testing, a raw score is obtained, which is then converted to a scale score from 1-5, as listed in Table 1.

<b>Level</b>	<b>Label</b>	<b>Characteristics</b>
<b>1</b>	Non-speaker	
<b>2</b>	Limited speaker	Isolated words
<b>3</b>	Limited speaker	Systematic errors

4	Native-like	Occasional errors
5	Native-like	Articulate, fluent

Table 1. LAS-O Rating Scale

De Avila (1997), an author of the LAS, suggests that LAS scale scores may not be as meaningful for measuring student progress as the raw scores. He notes that non-English speakers may reasonably expect to gain 20 raw score points a school year. At that rate, a student beginning at level 1 may not move to level 2 for three years. Scale scores change slowly, and do not show progress that is actually occurring, thus they may be interpreted by educators as indicating that the student has acquired no English over the course of a year. Nevertheless, only scale scores were recorded for students in this study.

Student LAS scores and normal curve equivalents for reading and language achievement tests were collected from school records. A combination language proficiency score (LAS-X) was obtained for each student by multiplying the two LAS scale scores together. Correlation coefficients were derived from all possible pairs of factors, and significance at the  $p=.05$  and  $p=.01$  levels was determined through the use of two-tailed tests.

## 5.0 Results

### All Students

	Grade	Span Lang	Span Rdg	Eng Lang	Eng Rdg	LAS X	LAS S
Grade	1.00						
Span Lang	0.36	1.00					
Span Rdg.	<b>0.55**</b>	<b>0.49**</b>	1.00				
Eng Lang	<b>0.56**</b>	<b>0.50**</b>	<b>0.45*</b>	1.00			
Eng Rdg.	<b>0.41*</b>	<b>0.43*</b>	<b>0.51**</b>	<b>0.70**</b>	1.00		
LAS X	<b>0.60**</b>	<b>0.41*</b>	<b>0.59**</b>	<b>0.62**</b>	<b>0.53**</b>	1.00	
LAS S	<b>0.45*</b>	0.33	<b>0.47*</b>	<b>0.39*</b>	0.17	<b>0.74**</b>	1.00
LAS E	<b>0.56**</b>	<b>0.41*</b>	<b>0.52**</b>	<b>0.61**</b>	<b>0.63**</b>	<b>0.86**</b>	0.33

n =28

\*p=.05

\*\*p=.01

Table 2. Correlational analysis for all students

For the student group as a whole, the results were much as expected. A high correlation between English proficiency and English reading achievement was observed. (.63) The correlation between Spanish proficiency and Spanish reading achievement was lower (.47), but significant at the .05 level, meaning that there was only a 5% chance that such a relationship could be the result of chance. A moderate, significant correlation between English and Spanish reading achievement was also found (.51). Age, as measured by grade level, was a good

predictor of performance on all measures. The older students did better on the tests than the younger ones did, in all areas except Spanish language proficiency.

Somewhat unexpectedly, a significant relationship between Spanish reading achievement and English language proficiency (.52) was also found, although the reverse relationship, between English reading achievement and Spanish language proficiency was one of the few pairs that showed no significant correlation.

LAS-X, the combined language proficiency measure, proved to be a good predictor of reading and language achievement in both English and Spanish.

First Grade

	Span Lang	Span Rdg	Eng Lang	Eng Rdg	LAS X	LAS S
Span Lang	1.00					
Span Rdg	0.44	1.00				
Eng Lang	<b>0.71**</b>	<b>0.58*</b>	1.00			
Eng Rdg	0.43	<b>0.66*</b>	0.53	1.00		
LAS X	<b>0.68*</b>	<b>0.66*</b>	<b>0.61*</b>	<b>0.59*</b>	1.00	
LAS S	<b>0.71**</b>	0.52	0.48	0.37	<b>0.81**</b>	1.00
LAS E	0.52	<b>0.65*</b>	0.54	<b>0.70**</b>	<b>0.92**</b>	0.55

n = 13

\*p=.05

\*\*p=.01

Table 3. Correlational analysis for first grade students

Among the first grade students, a high correlation between English reading achievement and English proficiency (.70) was observed. The correlation found between English and Spanish reading achievement (.66) was significant at

the .05 level, and the correlation found between English and Spanish language achievement was even higher (.71). The same unexpected correlation between English proficiency and Spanish reading achievement (.65) was found, significant at the .05 level. LAS-X again was a consistent predictor of reading and language achievement, finding correlations significant at the .05 level of significance.

Second Grade

	Span Lang	Span Rdg	Eng Lang	Eng Rdg	LAS X	LAS S
Span Lang	1.00					
Span Rdg	0.34	1.00				
Eng Lang	0.18	-0.06	1.00			
Eng Rdg	0.30	0.27	<b>0.71**</b>	1.00		
LAS X	-0.21	0.11	0.21	0.35	1.00	
LAS S	-0.25	0.10	-0.14	-0.28	0.34	1.00
LAS E	0.04	0.00	0.31	0.50	<b>0.55*</b>	<b>-0.58*</b>

n = 15

\*p=.05

\*\*p=.01

Table 4. Correlational analysis for second grade students

Unlike first grade, the second grade comparisons showed few correlations at either level of significance. English reading and English language achievement were found to have a high correlation, although Spanish reading and language achievement did not demonstrate the same relationship. A negative correlation between Spanish and English language proficiency (-0.58), significant at .05 level, was found. LAS-X was not a good predictor of any language or achievement scores.

## 6.0 Conclusions

Most of the relationships found were similar to those found in studies of older students. However, these relationships seemed to exist only at the first grade level. Due to the small sample size, the correlation levels required to establish significance were very high, nevertheless, the second grade correlations were very low to nonexistent. The reason for this evaporation of ties between language proficiency and academic achievement may be at least partially explained if the mean LAS scores of the two grades are taken into consideration. Second grade students had a mean LAS E of 3.33 and a mean LAS S of 4.06, compared to 2.07 and 3.15 for first graders. Second graders, then, performed more like native speakers in both languages than did their first grade counterparts. De Avila (1990) observes that the relationship between academic achievement and language proficiency disappears as students approach native-like proficiency levels, because native speakers perform at all levels on achievement tests.

In short, the following conclusions can be drawn from the current study:

- English language proficiency is the best predictor of English reading achievement for students with lower levels of English proficiency, even when students are just beginning to learn to read,
- Reading achievement in English is also related to reading achievement in the native language, particularly at the earlier levels, suggesting that limited-English proficient students draw upon reading skills already possessed in the native language, and supporting bilingual education models which develop native-language literacy,

- A strong relationship between native language reading achievement and second language proficiency suggests that good readers may acquire a second language more quickly, or that emergent bilingualism has a positive effect on literacy, and
- As students become fluent in the second language, their reading achievement patterns begin to resemble those of native speakers of the second language, and, like the students in the Speece, Roth, Cooper and De La Paz study, success begins to depend on factors other than oral language proficiency.

#### 7.0 Areas for Future Investigation

In order to confirm these findings, a larger sample of students should be studied. The current group was so small that only very high correlations could be considered significant, and some contributing factors were undoubtedly ignored in this study. Any future study sample should also be more representative of the student body, as the students in the current sample were not randomly selected, and their NCE scores on the achievement tests were unusually high. A complete study would assure that these findings hold true even for students who are struggling academically. Finally, a comparison of such correlations in groups of students in other instructional models, such as ESL immersion and early-exit bilingual education, would be very enlightening.

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