

This article was downloaded by: [Kathryn Lindholm-Leary]
On: 19 September 2011, At: 09:49
Publisher: Routledge
Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Journal of Multilingual and Multicultural Development

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rmmm20>

Achievement and language proficiency of Latino students in dual language programmes: native English speakers, fluent English/previous ELLs, and current ELLs

Kathryn Lindholm-Leary ^a & Ana Hernández ^b

^a Child & Adolescent Development, San Jose State University, San Jose, CA, 95192-0075, USA

^b Multilingual/Multicultural Education, College of Education, California State University, San Marcos, CA, 92096-0001, USA

Available online: 09 Sep 2011

To cite this article: Kathryn Lindholm-Leary & Ana Hernández (2011): Achievement and language proficiency of Latino students in dual language programmes: native English speakers, fluent English/previous ELLs, and current ELLs, Journal of Multilingual and Multicultural Development, DOI:10.1080/01434632.2011.611596

To link to this article: <http://dx.doi.org/10.1080/01434632.2011.611596>



PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan, sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings,

demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Achievement and language proficiency of Latino students in dual language programmes: native English speakers, fluent English/previous ELLs, and current ELLs

Kathryn Lindholm-Leary^{a*} and Ana Hernández^b

^a*Child & Adolescent Development, San Jose State University, San Jose, CA 95192-0075, USA;*

^b*Multilingual/Multicultural Education, College of Education, California State University San Marcos, CA 92096-0001, USA*

(Received 26 May 2011; final version received 2 August 2011)

This article examines the language proficiency and achievement outcomes of Latino students enrolled in a dual language programme who varied by language proficiency (Native English speakers, Current English Language Learners – ELLs, Fluent English Proficient/Previous ELLs). Most previous research has not disaggregated Latino students, especially ELLs. The purpose of this research is to examine the achievement and language proficiency of 732 Grade 4 to Grade 8 Latino students enrolled in a dual language programme who differed by language proficiency. Results show that these Latino student groups achieve at higher levels than their peers in English mainstream. Findings also indicated that the three groups vary in parent education, language proficiency in Spanish, and achievement as measured in Spanish and English. Further, Fluent English Proficient/Previous ELLs are the most Spanish proficient and bilingual, achieve at higher levels in English and Spanish, and close the achievement gap with native English speakers in English mainstream programmes.

Keywords: bilingualism; ELL; language immersion; language minorities; ethnic minorities; language proficiency

Introduction

While research and national reports in the US confirm that Latino students, whether native English- or Spanish speaking, are at risk for underachievement and school drop-out (e.g. Forum for Education and Democracy 2008; Lindholm-Leary 2010; Lindholm-Leary and Block 2010; Presidential Advisory Commission on Educational Excellence for Latino Americans 2003; Reardon and Galindo 2009; Tienda 2009), there is little information about various subgroups of Latinos to determine who is (*not*) successful and why. Most research on Latino students has focused on immigrant children, especially those who enter school as English language learners (ELLs). Even the research on English language learners (ELLs) has been more narrowly concentrated on which educational programmes and interventions best meet the needs of these students (August and Shanahan 2010; California Department of Education 2010; Genesee et al. 2006). However, even among Spanish speakers, there are few studies that specifically disaggregate ELLs who remain ELLs

*Corresponding author. Email: klindholmleary@mac.com

throughout their schooling (Olsen 2010) versus those who become proficient in English and are Reclassified Fluent English Proficient (called RFEP in California). It is important to determine whether or how these RFEP students differ from their ELL peers who do not develop sufficient English academic proficiency to be redesignated as English Proficient, and also whether RFEPs are more likely to close the achievement gap with native English speakers.

As a group, English-speaking Latinos are usually excluded from educational research because these students speak English and thus they are not considered to be at risk. However, they are included in the at-risk group when the focus is on Latinos in general, and many English speakers in this group are also found to be at risk for low or under-achievement and school drop-out (Forum for Education and Democracy 2008; Lindholm-Leary 2010; Lindholm-Leary and Block 2010; Tienda 2009).

This study will focus on Latino students who are enrolled in Dual Language (DL) programmes since these programmes have been shown to be successful with Latino students (e.g. Lindholm-Leary and Genesee 2010; Lindholm-Leary and Howard 2008), because there is research on DL programmes that provides some disaggregation of Latinos by language dominance at school entry, and because the authors have included data from these programmes for the study reported here. Dual Language programmes are designed to provide a high quality educational experience for both language minority (i.e. Spanish-speaking) and language majority (i.e. English-speaking) students and have been shown to promote higher levels of academic achievement (Collier and Thomas 2004, 2009; Genesee et al. 2006; Lindholm-Leary 2001; Lindholm-Leary and Genesee 2010; Lindholm-Leary and Howard 2008). These programmes integrate native English-speaking students and native Spanish-speaking students for content instruction in two languages. While research on these programmes shows that they promote bilingualism, biliteracy and achievement in native English- and native Spanish-speaking students (e.g. Lindholm-Leary and Genesee 2010; Thomas and Collier 2002), there has been insufficient empirical data about distinct groups of Latino participants (e.g. Lindholm-Leary and Block 2010), particularly subgroups of ELL students.

Several studies of Dual Language programmes have analysed schooling outcomes of Latino students classified according to majority or minority language group; that is, students who enter school as native Spanish speakers or as native English speakers (Lindholm-Leary 2001; Lindholm-Leary and Borsato 2005; Lindholm-Leary and Ferrante 2005, 2006; Lindholm-Leary and Howard 2008). These studies are important in showing that Latino students in elementary and secondary dual language programmes are as or more successful in developing proficiency in English, in passing the high school exit exam, and in achieving in reading and mathematics compared to ELL and Latino students in English mainstream classes, unlike their peers in English mainstream, and they also (further) develop proficiency in Spanish (for reviews, see Block 2007; Lindholm-Leary and Genesee 2010; Lindholm-Leary and Howard 2008). These results hold true even when the students attend predominantly Latino economically disadvantaged schools (Block 2007; Lindholm-Leary and Block 2010). While these studies examined Latino students categorised as Latino Spanish ELLs and Latino English speakers, there was no attempt to further disaggregate the Latino subgroups.

A few studies, both in DL programmes and in other educational contexts, have shown that bilingual Latino students tend to have higher achievement scores,

grade point averages, and educational expectations than their monolingual English-dominant or Spanish-speaking Latino peers (e.g. Fernandez and Nielsen 1986; Genesee et al. 2006; Lindholm-Leary 2001; Lindholm and Aclan 1991; Portes and Schauflier 1994; Rumberger and Larson 1998). Further, research has shown that higher levels of bilingual proficiency are associated with higher levels of reading and mathematics achievement (Cazabon, Nicoladis, and Lambert 1998; Lindholm-Leary 2001, 2003; Lindholm and Aclan 1991).

In addition, most research has examined Latino students and ELL students as if they were a homogeneous group with respect to socio-economic status, especially as measured by parent education. While research with most populations clearly shows that socio-economic status and parent education impact student achievement (e.g. Knapp and Woolverton 2003), little research has examined the influence of socio-economic status, and especially parent education, on the achievement of Latino students (Lindholm-Leary and Genesee 2010). Most of the literature on ELLs includes Latino students from low-income families. Thus, it is difficult to discern the true effect of SES because of the limited variation in SES among the samples that have been examined (Adams et al. 1994). Notwithstanding this caveat, all studies on ELLs that were reviewed by Lindholm-Leary and Genesee (2010) reported significant positive relationships between SES and school outcomes. However, the few research studies that have used parental education as a measure of SES have reported either no effect for parental education (Adams et al. 1994), or an effect only for English but not Spanish achievement (Lindholm-Leary 2001). Perhaps parental education is not reported as a significant effect in studies of ELL students since there is very little range of parental education in the predominantly Hispanic and low-SES families studied. This background variable will be included in the current study with the hope that a large sample of Latino students from a variety of schools and communities would include a greater range of parent education.

The research reviewed above indicates that there are important differences between Latino students when they are disaggregated by primary language proficiency; that is, native Spanish-speaking vs. English-speaking. In addition, the research shows the advantages of bilingualism on academic achievement. Furthermore, these bodies of research suggest the need to distinguish between Latino students who are English speakers, Spanish speakers but English-proficient and presumably bilingual (RFEP), and Spanish speakers who are Spanish-dominant (or current ELL). In addition, it is important to understand whether these groups differ in terms of the formal education of their parents, and whether parent education has any impact beyond language proficiency, or whether language proficiency and parent education interact.

Thus, the overall purpose of this research is to investigate three groups of Latino students to determine whether their outcomes vary by level of English language proficiency and parent education. More specifically, this study will examine the achievement and language proficiency of Latino students enrolled in a dual language programme. These students differ in language background (native English vs. native Spanish-speaking), English language proficiency (fluent/not fluent in English), and comprise three language proficiency groups: (1) native English speakers who are English-proficient (EP); (2) native Spanish speakers who entered school as ELLs but have developed proficiency in English and been reclassified as Fluent English proficient (RFEP); and (3) native Spanish speakers who were enrolled in school as ELLs and who continued to be classified as ELLs.

Based on previous research, we hypothesise that these language proficiency groups (EP, RFEP, ELL) will differ in their reading achievement and in Spanish/bilingual language proficiency. In addition, this study will determine whether students in the three language proficiency groups vary with respect to their parents' level of formal education, and, if so, whether parent education has a significant influence on reading achievement over and above language proficiency group.

Method

Participants

A total of 763 Grade 4 to Grade 8 Latino students were included in the study. Exactly half of the students were males (50%) and half were females (50%). Close to half (45%) of the students were in Grades 4–5, and the remainder (55%) were in Grades 6–8. Among the students, 424 (56%) were native Spanish speakers who had entered school as ELL students and were still considered English Language Learners (ELL); 182 (24%) entered school as native Spanish speakers but had been reclassified as Fluent English Proficient (RFEP), and 153 (20%) entered school as native English speakers (EP). For the purposes of this study, students were categorised by their current level of English proficiency; that is, as English language learner (ELL), Reclassified-Fluent English Proficient (R-FEP), or English proficient (EP). However, the percentage of students who were RFEP or ELL varied by grade level. Thus, as students moved up the grade levels, more students were reclassified as fluent in English. Table 1 illustrates the change across grade levels for the students who were fluent in English; that is, the number and percentage of students who were at the Early Advanced or Advanced levels of the California English Language Development Test (CELDT) and the number and percentage of students who had already been reclassified as Fluent English Proficient (RFEP). As Table 1 shows, across the grade levels there were a higher percentage of students who reached the Early Advanced or Advanced levels (from 18% in Grade 4 to 59% in Grade 7 and 29% in Grade 8), though the percentages did not necessarily increase across each grade since many of these students were then moved into the RFEP category. In the RFEP category, there was a clear increase in the per cent of students across the grade levels (from 14% in Grade 4 to 58% in Grade 8). Overall, the total percentage of students who were proficient in English increased substantially across the grades, from 32% in Grade 4 to 85% and 87% in Grades 7–8. Further, for the students who had not achieved a level of Early Advanced or Advanced (were not English proficient) on the CELDT: the seven 7th graders (12% of 7th grade ELLs and RFEPs, or all students who entered as ELLs) showed growth from 2.4 to 2.9 in proficiency levels (or close to Intermediate), and the eight 8th graders (10% of 8th grade incoming ELLs and RFEPs) showed growth from 2.4 to 2.6.

The great majority of students (77%) were low income, as measured by participation in the federal free/reduced price lunch programme. However, socioeconomic status (SES) varied significantly across the three language proficiency groups, with 91% of ELL, 74% of RFEP, and 45% of EP students low income ($\chi^2(638) = 126.1, p < 0.001$).

Parent education was also available for 439 students (58% of sample). Close to one-third of students (31%) had parents who had not completed high school, 22% of parents had a high school diploma, 25% had some college (including vocational

Table 1. Level of language proficiency in English by grade level for ELL and RFEP students.

	Grade					Total
	4	5	6	7	8	
	<i>n</i> = 130	<i>n</i> = 124	<i>n</i> = 186	<i>n</i> = 58	<i>n</i> = 76	<i>n</i> = 574
Early Advanced/Advanced	24 (18%)	32 (26%)	52 (28%)	34 (59%)	22 (29%)	164 (29%)
RFEP	18 (14%)	37 (30%)	68 (37%)	15 (26%)	44 (58%)	182 (32%)
Total English proficient	42 (32%)	69 (56%)	120 (65%)	49 (85%)	66 (87%)	346 (60%)

Note: Early Advanced/Advanced refers to levels of the California English Language Development Test (CELDT) that denote English language proficiency. Students at the CELDT English language proficiency levels of Beginning, Early Intermediate and Intermediate are not included in this table.

training), 13% were college graduates, and 8% had completed graduate school or a professional degree. Parent education also varied significantly across the three language proficiency groups ($\chi^2(439) = 128.0, p < 0.001$). As shown in Table 2, far more ELL and RFEP than EP students had parents with *less than a high school education* (47% of ELL vs. 22% of RFEP vs. 4% of EP), or a *high school education or less* (73% of ELL vs. 44% of RFEP vs. 19% of EP), and far more EP than ELL or RFEP had parents with *at least a college degree*, that is, a four-year college degree or postgraduate training (7% of ELL vs. 26% of RFEP vs. 48% of EP). However, it is also clear that the two original ELL groups – ELL and RFEP – had parents with differing levels of education. That is, current ELLs were more likely to have less educated parents than RFEPs, and RFEPs were more likely to have more educated parents than ELLs.

These students were currently enrolled in a dual language programme at one of five public elementary or middle schools in California. The dual language programmes in four of the five schools in the study are described as 90:10 dual language programmes, with Spanish as the target language. This means that instruction was in Spanish 90% of the time during Kindergarten and first grade, 80% of the time in second grade, 70% of the time in third grade, 60% of the time in fourth grade, and 50% afterward, with English instruction during the remainder of the time. Initial literacy instruction was in Spanish for all students, including EPs; formal literacy instruction in English began in Grade 2 or 3. In the remaining school, the students participated in a 50:50 dual language programme in Spanish and English. In this model, students receive half of their instruction in each language across all grade levels and students learn to read first in their primary language and

Table 2. Level of parent education by student language proficiency group.

	ELL (<i>n</i> = 249)	RFEP (<i>n</i> = 77)	EP (<i>n</i> = 113)	ALL (<i>n</i> = 439)
Post Graduation/profession	1%	8%	24%	8%
College degree (four year)	6%	18%	24%	13%
Some college	20%	30%	34%	25%
High school diploma	26%	22%	15%	22%
Less than high school	47%	22%	4%	31%

Note: $\chi^2(439) = 128.0, p < 0.001$.

at about second grade, they add on formal reading in the second language. Thus, native Spanish speakers learn to read first in Spanish and native English speakers first in English.

In addition, in two of the schools (both 90:10), most of the school population consisted of Latino students, and the majority were considered economically disadvantaged or low income. In one 90:10 and one 50:50 school, a third of students were Latino and about 40% low income, though the surrounding community was more middle to upper income.

Students were included in the study only if they had been in the same DL programme and had achievement data for at least the past three years. Students were not excluded from the study if they were identified for special education.

Measures

Student achievement was assessed by examining the passing rates on the English Language Arts subtest of the California Standards Test (CST), a criterion-referenced state assessment in English. The CST categorises students into five classifications: Far Below Basic, Below Basic, Basic, Proficient (at grade level), and Advanced (well above grade level). A student passes the assessment when s/he achieves a level of Proficient or Advanced. Scale scores were also used for the CST; a scale score of 350 indicates grade-level performance. Students were also administered the Aprenda, a norm-referenced standardised achievement test that assesses reading achievement in Spanish. For this test, a percentile/NCE of 50 indicates grade-level performance. Test score data and background information were obtained from school personnel.

ELL students' language proficiency in English was assessed using the California English Language Development Test (CELDT), which was developed by the State of California to fulfill the legal requirements of initially and annually testing English learners. The CELDT covers four skill areas: listening, speaking, reading and writing. CELDT results assign students to one of five proficiency levels: Beginning, Early Intermediate, Intermediate, Early Advanced, or Advanced. Students receive an individual proficiency level for each skill and an overall proficiency level. CELDT criteria for English language proficiency require students to attain a proficiency level of at least Early Advanced overall, and a level of Intermediate or above in each skill area.

The FLOSEM is a Stanford University Department of Education developed rating scale that assesses oral language proficiency in children in five domains: (1) Comprehension, (2) Fluency, (3) Vocabulary, (4) Pronunciation, and (5) Grammar. Teachers do not administer a test, but rather reflect on the students' language abilities after extensive interaction with the student in a number of different situational contexts. The scores are based on individual rubrics appropriate for each domain and range from 1, representing almost no ability, to 6, designating monolingual native speaker ability. Scores in each domain can be summed for a total language proficiency score, or kept distinct for subscale scores.

A third of the grade 5–8 students ($n=238$) completed a questionnaire that included questions concerning attitudes towards school, attitudes towards language and bilingualism, and self-ratings of language proficiency and achievement. Most of these items were rated on a four-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (4). Only items relating to self-ratings of their English and Spanish language proficiency and bilingualism were analysed for this study.

Results

Language proficiency

The first analyses examined the students' language proficiency in English and Spanish, and their level of bilingualism. Table 3 presents the results from the teacher rating of students' Spanish proficiency and the students' self-ratings of their language proficiency in English, Spanish, and their level of bilingualism. As Table 3 indicates for the teacher ratings of Spanish proficiency, the overall average of 25.6, out of a total of 30 points, shows that the students had high levels of Spanish language proficiency. However, not surprisingly, the native Spanish-speaking RFEP and ELL students were scored significantly higher than were the native English-speaking EPs ($M = 27.2$ vs. 25.9 vs. 22.8), $F(2, 384) = 30.03$, $p < 0.001$.

On a rating of 1 (not very) to 3 (very) bilingual, over half of students rated themselves as 'very bilingual' (56%), and there was no significant main effect for language proficiency group (likely because of the limited range of responses, 1–3). However, far more RFEPs rated themselves as 'very bilingual', followed by ELLs, and then EPs ($M = 66\%$ vs. 52% vs. 44%).

In English, students rated themselves as having sufficient English skills overall, and in reading and writing in particular, to do well in school. Students perceived that

Table 3. Means and SD for levels of language proficiency and bilingualism.

	ALL	ELL	RFEP	EP	F
Teacher rating					
Spanish oral language skills (Range = 5–30) ($n = 387, 196, 108, 83$)	25.6 (4.3)	25.9 ^c (3.7)	27.2 ^{a,b} (3.3)	22.8 (5.3)	30.0***
Student self-rating					
Bilingualism (Range = 1–3) ($n = 238, 119, 83, 36$)	2.5 (1.3)	2.5 (1.4)	2.7 (1.1)	2.4 (1.4)	NS
Per cent 'very bilingual'	56%	52%	66%	44%	
English skills do well in school (Range = 1–4) ($n = 196, 103, 75, 18$)	3.3 (0.7)	3.1 (0.7)	3.4 ^a (0.6)	3.5 (0.6)	5.5**
Read and write well in English (Range = 1–4) ($n = 196, 104, 73, 19$)	3.2 (0.7)	3.0 (0.7)	3.5 ^a (0.5)	3.4 (0.7)	12.1***
Read and write well in Spanish (Range = 1–4) ($n = 199, 105, 75, 19$)	3.4 (1.3)	3.4 ^c (1.4)	3.6 ^b (1.1)	3.0 (1.4)	7.6***
Self-Rate Spanish (rubric range 1–4)					
Grammar ($n = 175, 86, 71, 18$)	2.9 (1.3)	2.7 (1.4)	3.3 ^a (1.1)	2.8 (1.4)	3.9*
Fluency ($n = 183, 93, 73, 17$)	3.5 (1.3)	3.2 (1.4)	4.0 ^{a,b} (1.2)	3.1 (0.9)	6.9***
Comprehension skills ($n = 188, 97, 73, 18$)	3.3 (1.4)	3.0 (1.5)	3.7 ^a (1.2)	3.2 (0.9)	3.9*
Vocabulary ($n = 186, 95, 73, 18$)	3.1 (1.3)	3.0 (1.2)	3.4 (1.4)	2.6 (1.2)	NS

Note: Teacher rating based on FLOSEM.

Scheffé tests show: ^aRFEP > ELL; ^bRFEP > EP; ^cELL > EP scores.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

they had sufficient English skills to do well in school, though there was a significant main effect for language proficiency group, $F(2, 195) = 5.5, p < 0.01$, with RFEPs scoring significantly higher than ELLs ($M = 3.4$ vs. 3.1) on the Scheffé post-hoc comparisons. In terms of students' self-ratings of their reading and writing skills in English, students rated themselves 3.2 on a scale of 1–4; but there was a highly significant main effect for language proficiency group, $F(2, 384) = 12.1, p < 0.001$, again with RFEPs significantly outscoring ELLs ($M = 3.5$ vs. 3.0) on the Scheffé post-hoc comparisons.

In Spanish, students also felt that they were able to read and write well in Spanish for their grade level, though there was again a highly significant main effect for language proficiency group, $F(2, 198) = 7.6, p < 0.001$, with RFEPs and ELLs scoring significantly higher than EPs ($M = 3.6$ vs. 3.4 vs. 3.0) on the Scheffé post-hoc comparisons.

In four items, students self-rated their Spanish grammar, fluency, comprehension skills, and vocabulary using a rubric, from 1 to 4, that was appropriate for each domain. A one-way MANOVA revealed a significant multivariate main effect for language proficiency group, Wilks' $\lambda = 0.893, F(8, 328.0) = 2.4, p < 0.02$, partial eta squared = 0.055. Given the significance of the overall test, univariate main effects were examined. Significant univariate main effects for language proficiency were obtained for Spanish grammar, $F(2, 165) = 3.924, p < 0.02$, partial eta square = 0.045, power = 0.70; Spanish fluency, $F(2, 165) = 6.956, p < 0.001$, partial eta square = 0.077, power = 0.92; Spanish listening, $F(2, 165) = 3.897, p < 0.02$, partial eta square = 0.045, power = 0.697; but not for Spanish vocabulary, $F(2, 165) = 2.733, p = 0.06$. Significant language proficiency pairwise differences were obtained in Spanish grammar between RFEP and ELL students; in Spanish fluency between RFEP and ELL and between RFEP and EP; and in Spanish listening between RFEP and ELL students. In all cases, RFEP students scored higher than their ELL or EP peers, but only in the previous pairwise analyses were these differences significant.

Reading achievement

Student achievement in reading/language arts in English was examined using the California Standards Test (CST). Table 4 provides the Mean scale scores and Standard Deviations (SD) for the students and further disaggregates the data by language proficiency and parent education. Overall, across all proficiency groups, the larger sample of DL students ($n = 755$) scored slightly above the Latino scale score average (Mean = 338.8 vs. 330) and lower than the smaller sample used for the Univariate ANOVA ($n = 437, M = 344.7$). The average scale score of 344.7 in the smaller sample for all students is close to the 350 mark that serves as the defining point for Proficient status on the CST test and close to the average score for native English speakers in English mainstream ($M = 354$). This is an interesting result since the DL sample includes students who are far more likely to be ELL and economically disadvantaged than the population of students in California.

In looking at the CST reading/language arts scale scores by language proficiency group, Table 4 under One-Way ANOVA for Language Proficiency Group shows that there was a significant main effect for language proficiency group [$F(2, 527) = 158.0, p < 0.001$], with ELL students scoring significantly lower than those of RFEP and EP students; however, RFEP and EP students' scores did not differ. In comparing the DL students to their same-language proficiency peers in the state, we see in Table 4

Table 4. Student achievement in reading/language arts measured in English on the California Standards Test (Scale scores).

	ALL	ELL	RFEP	EP	
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	F
One-Way ANOVA for Language proficiency group					
Overall (<i>n</i> = 755, 421, 181, 153)	338.8 (49.2)	314.9 (38.3)	368.8 ^a (38.6)	368.8 ^b (51.4)	158.0*
<i>STATEWIDE DATA-COMPARISON PEERS</i>					
Language proficiency group	330	306	363	359	
Univariate ANOVA for Language proficiency group & Parent education					
High school or less (<i>n</i> = 234, 179, 34, 21)	322.1 (38.9)	317.8 (40.7)	355.7 (37.5)	355.8 (57.2)	
Some college (<i>n</i> = 111, 50, 23, 38)	356.1 (45.0)	334.2 (32.6)	379.8 (39.5)	370.5 (49.8)	
College degree (<i>n</i> = 92, 18, 20, 54)	376.7 (42.7)	331.1 (28.1)	388.5 (31.7)	387.5 (40.5)	
All (<i>n</i> = 437, 234, 111, 92)	344.7 (48.8)	322.1 (38.9)	371.4 (39.0)	375.9 (48.3)	

Note: Comparison peers for All students comprise All Latino students in the state; ELL, RFEP, and EP comparison peers include all students in those groups and not just Latinos. Parent education data were not available for all students; thus, the *n*s vary for the overall mean, and for the means according to parent education. Scheffé tests show: ^aRFEP > ELL; ^bEP > ELL scores. **p* < 0.001.

that ELL, RFEP, and EP students in DL scored slightly above their same-language proficiency background peers in the state (314.9 vs. 306 for ELL; 368.8 vs. 363 for RFEP; 368.8 vs. 359 for EP). However, the state averages for all three groups include other ethnic groups with higher socio-economic levels, whereas the current study only included Latino students, more of whom were low income (77% economically disadvantaged in sample vs. 59% economically disadvantaged in state).

Table 4 also provides DL students' scale score Means (and SDs) according to language proficiency group and parent education. A 3 × 3 factorial ANOVA was run to determine whether there would be significant main effects for parent education and language proficiency group and whether there would be a significant language proficiency group by parent education interaction. Table 5 provides the results from the ANOVA; the findings indicate that both language proficiency group and parent education are highly significant main effects [$F(2, 437) = 41.5, p < 0.001$ for language proficiency group and $F(2, 437) = 10.2, p < 0.001$ for parent education level], with no significant interaction. Thus, according to Scheffé post-hoc comparisons, ELLs scored lower than RFEPs and EPs, but there was no difference between RFEPs and EPs. Also, students with parents who had high school or less education scored significantly lower than students whose parents had some college, who, in turn, scored significantly lower than students whose parents were college graduates.

Table 4 provides further information about differences between ELLs and RFEPs that is important to understand. While RFEP students entered school as ELLs, they do not resemble the ELLs in parent education, as already discussed in the Methods section; that is, their parents have significantly higher levels of education. Further, as the lack of interaction in the ANOVA demonstrates, even holding parent education

Table 5. Language proficiency group \times Parent education factorial analysis of variance for English reading achievement.

	df	Mean Square	<i>F</i>	Significance	Partial eta squared
Language proficiency group	2	68280.2	41.5	0.000	0.162
Parent education	2	16742.3	10.2	0.000	0.045
Lang \times Parent education (interaction)	4	1262.9	0.77	0.55	0.007
Error (within groups)	428	1644.5			

Note: *R* Squared = 0.32 (Adjusted *R* Squared = 0.310).

constant, RFEPs have higher mean scale scores than the ELL students. Thus, in looking at the parent education level High School or less, ELLs have a score of 317.8 while RFEPs score 355.7; for Some College, ELLs achieve a score of 334.2 while RFEPs score 379.8; and for College Degree, ELLs score 331.1 while RFEPs score 388.5. Further, there is no statistical advantage to having parents with a college degree for the current ELL students, as their score is the same as that for Some College, but there is additional advantage for RFEP students.

Table 6 presents the Means and Standard Deviations for the students on the reading portion of the Aprenda, a norm-referenced achievement test in Spanish. As Table 6 shows, overall, students achieved slightly above grade level in reading/language arts measured in Spanish (Mean NCE = 56.9, Mean percentile = 62; normed grade level = 50). There was a significant main effect for language proficiency group [$F(2, 688) = 35.3, p < 0.001$] with the larger DL sample ($n = 692$), in which RFEP students significantly outperformed their ELL and EP peers, who

Table 6. Student achievement in reading measured in Spanish on Aprenda (Scores in NCEs).

	ALL	ELL	RFEP	EP	<i>F</i>
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
One-way ANOVA for Language proficiency group					
Overall ($n = 692, 383, 157, 151$)	56.9 (18.1)	53.1 (16.4)	66.9 ^{a,b} (18.1)	55.1 (18.4)	35.3**
Percentiles	62	55	78	59	
<i>STATEWIDE DATA-COMPARISON PEERS</i>					
Latino Percentiles	54	53			
Univariate ANOVA for Language proficiency group & Parent education					
High School/less ($n = 225, 174, 30, 21$)	56.1 (16.5)	54.1 (15.9)	67.1 (15.6)	56.5 (16.9)	
Some college ($n = 111, 50, 23, 38$)	64.4 (17.0)	62.1 (13.6)	77.3 (16.9)	59.7 (17.7)	
College degree ($n = 93, 19, 20, 54$)	62.7 (17.9)	56.0 (13.2)	74.4 (10.3)	60.7 (18.6)	
All ($n = 429, 225, 9, 59$)	59.7 (17.2)	55.9 (15.6)	72.3 (15.3)	59.6 (17.9)	
Percentiles	67	60	85	67	

Scheffé tests show: ^aRFEP > ELL; ^bRFEP > EP scores.
** $p < 0.001$.

scored similarly (Mean = 66.9 vs. 53.1 vs. 55.1) statistically, according to Scheffé post-hoc comparisons.

Table 7 presents the results from the 3 × 3 factorial ANOVA for Spanish reading. These findings indicate that both language proficiency group and parent education are again highly significant main effects [$F(2, 420) = 23.0, p < 0.001$ for language proficiency group and $F(2, 420) = 5.2, p < 0.01$ for parent education level], with no significant interaction. As Table 6 illustrates, according to Scheffé post-hoc comparisons, RFEP students scored significantly higher than ELLs and EPs, who scored similarly (Mean = 72.3 vs. 55.9 and 59.6). Also, students with parents who had high school or less education scored significantly lower than students whose parents had some college or were college graduates (Mean = 56.1 vs. 64.4 and 62.7). Interestingly, students whose parents had a college degree did not differ statistically from students whose parents had some college; in fact, ELLs and RFEPs with college-degree parents actually scored slightly, but not statistically, lower.

Discussion

There are several notable findings in this study. First, it is important to point out that the overall results of these DL students are consistent with other research showing that Latino students in dual language programmes achieve at or above their peers in English mainstream, including the subgroups of ELL, RFEP, and Latino students in general (Christian et al. 2004; Lindholm-Leary 2001; Lindholm-Leary and Borsato 2005, 2006; Lindholm-Leary and Ferrante 2005; Lindholm-Leary and Howard 2008; Thomas and Collier 2002).

Second, the current results show the importance of disaggregating Latino students to better understand their language proficiency and academic achievement outcomes. These results indicated that there are significant effects due to language proficiency group in Spanish proficiency as rated by the teacher, and self-rated Spanish and English language and reading/writing proficiencies.

Third, in almost all analyses in this study, RFEP students scored the highest. Though these RFEP students entered school as ELLs, they continued to develop their Spanish to levels that exceeded those of the current ELL students, both in oral language proficiency and in literacy. Furthermore, their English oral language skills were strong as assessed in oral language proficiency on the CELDT and on literacy measures assessed by the CELDT and the CST. In addition, on the CST reading/language arts test, RFEP students outperformed their Latino EP peers and also EPs in English mainstream classes. These results demonstrating the success of RFEP

Table 7. Language proficiency group × Parent education factorial analysis of variance for Spanish reading achievement.

	df	Mean square	F	Significance	Partial eta squared
Language proficiency group	2	5889.2	23.0	0.000	0.099
Parent education	2	1321.2	5.2	0.006	0.024
Lang × Parent education (interaction)	4	160.4	0.63	0.55	0.006
Error (within groups)	420	1644.5			

Note: *R Squared* = 0.153 (*Adjusted R Squared* = 0.137).

students have been reported in other research on DL programmes and other educational contexts, and show that bilingual Latinos demonstrate higher levels of achievement and educational expectations than their monolingual English-speaking or Spanish-speaking Latino peers (e.g. Fernandez and Nielsen 1986; Genesee et al. 2006; Lindholm and Aclan 1991; Lindholm-Leary 2001; Portes and Schauflier 1994; Rumberger and Larson 1998).

Some have attributed this educational success to the positive impact of bilingualism on cognition and academic achievement (Cazabon, Nicoladis, and Lambert 1998; Cummins 1981; Lindholm-Leary 2001, 2003; Lindholm and Aclan 1991). This phenomenon related to the high achievement of RFEP students in English and Spanish might be associated with one or more of the following variables: (1) a higher level of metalinguistic and metacognitive awareness of both language systems; (2) a more advanced working knowledge of their native language that facilitates transfer of language processes and functions into English (Hornberger 1989; Hornberger and Skilton-Sylvester 2000); and/or (3) a higher level of parental formal education or other background variables that impacts their language proficiency development. This is clearly an area requiring further research on the interplay between bilingual language proficiency, reading achievement, and various background variables.

Fourth, this study shows that most current ELLs are likely on their way to achieving English proficiency since 85–87% of the seventh and eighth graders were either RFEP or Early Advanced or Advanced on the CELDT. Among the 15 students who had not achieved English proficiency, even these students showed increases in their levels of proficiency on the CELDT. Thus, this study also shows that only a small percentage (10–12% of ELLs) might be considered long-term ELLs as defined in the study of long-term ELLs (Olsen 2010). However, given that half to three quarters of secondary ELLs are long-term ELLs, this study shows a very small per cent of DL students who might fall into this category. These results could be an indication that ELLs in DL programmes are achieving success in academic English through the process of additive bilingualism and biliteracy.

Fifth, this study included the Latino English speakers who are rarely examined as a subgroup in other studies. The results here demonstrate that these DL students score at grade level and comparable to native English speakers in English mainstream programmes when assessed in English, and they score close to grade level in reading assessments in Spanish. Further, these Spanish heritage students are acquiring Spanish and bilingual proficiencies. Even students with high school educated parents are scoring at grade level, which is much higher than the average for Latino students in the state. Thus, this study joins many others in demonstrating that DL programmes may be effective in promoting achievement and bilingualism for this group of students as well, which is consistent with other studies on Latino English-speaking students in dual language programmes (Block 2007; Lindholm-Leary 2001; Lindholm-Leary and Howard 2008).

Sixth, this study showed that parent education has a highly significant effect in assessments conducted in both Spanish and English, and for English and Spanish speakers. In addition, ELLs differed significantly from RFEPs in level of parent education overall and in their relationship to achievement measured in both English and Spanish. Yet, research has not examined parent education backgrounds of ELL students to better understand why some students are successful and others are not. The more successful RFEP students tended to have parents with higher levels of

education, but even RFEPs who had parents with comparable levels of education to ELLs scored higher than the current ELLs. It appears that RFEP parents may play a strong and catalytic role in the education of their children. Perhaps parents of RFEPs, who have more advanced levels of education, positively influence the use of complex communicative approaches and literacy events in the home that may affect the students' language proficiencies in English and Spanish. Clearly, more research needs to be conducted with these students to examine their levels of bilingualism and their home backgrounds. In addition, these differences should be considered in developing more appropriate parent education efforts.

The significantly greater performance of the most bilingual subgroup, RFEPs, suggests the importance of providing language arts instruction through both languages. Even the ELL subgroup was achieving at grade level in reading/language arts measured in Spanish, but more information is needed in how to help the students form bridges between their reading skills in Spanish and in English. It is important to examine whether teachers in DL programmes tend to differentiate instructional strategies among the various English and Spanish acquisition levels of the students during explicit and guided lessons. Hernández (2011) found that teachers in DL programmes strove to meet the diverse linguistic needs of their students by using mixed ability or flexible grouping structures during Spanish and English language arts, as well as homogeneous groupings, particularly for English Language Development. Teachers in this study stated the importance of implementing lessons of skill transference to connect similarities or distinctions between languages for ELL, RFEP, and EP students in their DL classes. More investigation is needed on how teachers address and/or accelerate the biliteracy needs of Latino ELLs during lessons, interactions, and collaboration between home and school.

Finally, this study has important language policy implications. The student participants in this study, who are normally considered at-risk for achievement, were achieving at levels comparable to or higher than their peers in English mainstream classes. Furthermore, the RFEP students were outscoring native English speakers in English mainstream programmes. These data clearly show that ELL and heritage speakers experience more advantages when they participate in programmes that integrate their heritage or home language and culture into their schooling. Thus, we join others who advocate for practices and policies that provide a path towards bi/multilingualism especially for heritage language speakers (Tedick, Christian and Fortune 2011).

References

- Adams, D., B. Astone, E.M. Nunez-Wormack, and I. Smolaka. 1994. Predicting the academic achievement of Puerto Rican and Mexican-American ninth-grade students. *Urban Review* 26: 1–14.
- August, D., and T. Shanahan. 2010. Effective English literacy instruction for English learners. In *Research on English language learners*, ed. California Department of Education, 209–249. Sacramento: CDE Press.
- Block, N. 2007. Dual immersion programs in predominantly Latino schools. Unpublished PhD diss., Claremont Graduate University, CA.
- Cazabon, M., E. Nicoladis, and W.E. Lambert. 1998. Becoming bilingual in the Amigos two-way immersion program (Research Report 3). Santa Cruz, CA and Washington, DC: Center for Research on Education, Diversity and Excellence.
- Collier, V.P., and W.P. Thomas. 2004. The astounding effectiveness of dual language education for all. *NABE Journal of Research and Practice* 2, no. 1: 1–20.

- Collier, V.P., and W.P. Thomas. 2009. *Educating English learners for a transformed world*. Albuquerque, NM: Fuente Press.
- Cummins, J. 1981. The role of primary language development in promoting the educational success for language minority students. In *Schooling and language minority students: A theoretical framework*, ed. California Department of Education, 3–49. Los Angeles, CA: Evaluation, Dissemination, and Assessment Center, California State University.
- Fernandez, R.M., and F. Nielsen. 1986. Bilingualism and Hispanic scholastic achievement: Some baseline results. *Social Science Research* 15: 43–70.
- Forum for Education and Democracy. 2008. *Democracy at risk: The need for a new federal policy in education*. Washington, DC: The Forum for Education and Democracy.
- Genesee, F., K.J. Lindholm-Leary, W. Saunders, and D. Christian. 2006. *Educating English language learners*. NY: Cambridge University Press.
- Hernández, A. 2011. Successes and challenges of instructional strategies in two-way bilingual immersion. Unpublished PhD diss., University of California, San Diego.
- Hornberger, N.H. 1989. Continua of biliteracy. *Review of Educational Research* 59, no. 3: 271–96.
- Hornberger, N., and E. Skilton-Sylvester. 2000. Revisiting the continua of biliteracy: International and critical perspectives. *Language and Education* 14, no. 2: 96–122.
- Knapp, M.S., and S. Woolverton. 2003. Social class and schooling. In *Handbook of research on multicultural education*, 2nd ed., ed. J. Banks and C.A. McGee Banks, 548–69. New York: Jossey Bass.
- Lindholm-Leary, K.J. 2001. *Dual language education*. Clevedon: Multilingual Matters.
- Lindholm-Leary, K.J. 2003. Dual language achievement, proficiency, and attitudes among current high school graduates of two-way programs. *NABE Journal* 26: 20–5.
- Lindholm, K.J., and Z. Aclan. 1991. Bilingual proficiency as a bridge to academic achievement: Results from bilingual/immersion programs. *Journal of Education* 173: 99–113.
- Lindholm-Leary, K.J., and N. Block. 2010. Achievement in predominantly low-SES Hispanic dual language schools. *International Journal of Bilingual Education and Bilingualism* 13: 1–18.
- Lindholm-Leary, K.J., and G. Borsato. 2005. Hispanic high schoolers and mathematics: Follow-up of students who had participated in two-way bilingual elementary programs. *Bilingual Research Journal* 29: 641–52.
- Lindholm-Leary, K.J., and G. Borsato. 2006. Academic achievement. In *Educating English language learners*, ed. F. Genesee, K. Lindholm-Leary, W. Saunders, and D. Christian, 176–221. New York: Cambridge University Press.
- Lindholm-Leary, K.J., and A. Ferrante. 2005. Follow-up study of middle school two-way students: Language proficiency, achievement and attitudes. In *Language in multicultural education*, ed. R. Hoosain and F. Salili, 157–79. Greenwich, CT: Information Age.
- Lindholm-Leary, K.J., and F. Genesee. 2010. Alternative educational programs for English language learners. In *Research on English language learners*, ed. California Department of Education, 323–382. Sacramento: CDE Press.
- Lindholm-Leary, K.J., and E. Howard. 2008. Language and academic achievement in two-way immersion programs. In *Pathways to bilingualism: Evolving perspectives on immersion education*, ed. T. Fortune and D. Tedick, 177–200. Clevedon: Multilingual Matters.
- Olsen, L. 2010. *Reparable harm: Fulfilling the unkept promise of educational opportunity for California's long term English learners*. Long Beach, CA: Californians Together. <http://www.californianstogether.org/> (accessed January 5, 2011).
- Portes, A., and R. Schauffler. 1994. Language and the second generation: Bilingualism yesterday and today. *International Migration Review* 28, no. 4: 640–61.
- Presidential Advisory Commission on Educational Excellence for Hispanic Americans. 2003. *From risk to opportunity: Fulfilling the educational needs of Hispanic Americans in the 21st century*. <http://www.yic.gov/paceea/finalreport.pdf> (accessed July 31, 2003).
- Reardon, S.F., and C. Galindo. 2009. The Hispanic-White achievement gap in math and reading in the elementary grades. *American Educational Research Journal* 46, no. 3: 853–91.

- Rumberger, R.W., and K.A. Larson. 1998. Toward explaining differences in educational achievement among Mexican-American language minority students. *Sociology of Education* 71: 69–93.
- Tedick, D.J., D. Christian, and T.W. Fortune, eds. 2011. *Immersion education: Practices, policies, possibilities*. Bristol: Multilingual Matters.
- Thomas, W.P., and V. Collier. 2002. A national study of school effectiveness for language minority students' long-term academic achievement (Final report). Santa Cruz, CA and Washington, DC: Center for Research on Education, Diversity and Excellence. <http://www.crede.ucsc.edu/research/llaa/1.1pdfs/1.1complete.pdf> (accessed March 1, 2008).
- Tienda, M. 2009. *Hispanicity and educational inequality: Risks, opportunities and the nation's future*. Princeton, NJ: Educational Testing Service. <http://www.ets.org> (accessed August 3, 2010).