

Full Length Research Paper

Reading Achievement In A Dual Language Setting: An Examination Of English Language Learners At The Elementary Level

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Dual or two-way immersion programs utilize two languages of instruction to promote bilingualism and biliteracy. This study examined the impact of dual language instruction on the reading achievement and language acquisition of English language learners (ELs.) at the elementary level in a public-school district in a Midwestern state. The school population included 778 students in which 400 students were enrolled in the dual language program (327 ELs., 73 native English speakers) and 378 students were enrolled in a traditional setting (225 ELs., 153 native English speakers). A one-way analysis of variance (ANOVA) was used to compare the means of reading scores of dual languages and of English-only students with no statistically significant effect found. A factorial two-way ANOVA was conducted to compare the means of reading subtest percentile scores, and statistically significant differences were found at the .05 level for the Prereading/Early Reading and Instruction subtests. The results of this study support that bilingual instruction through a 50:50 Dual Language Model contributes to positive academic results in the areas of reading achievement and language acquisition for students at the elementary level. The researchers also found that dual language instruction is appropriate for both male and female students as differences in gender do not play a significant role in the reading achievement or English language acquisition of elementary age students participating in the dual-language program.

Keywords: dual language program, two-way immersion, bilingualism, biliteracy, English Learners

Over the past several decades, the United States has experienced an increase in the immigrant population, many of which speak a native language other than English. School-age children comprise 20% of this population making English language learners one of the fastest growing school-age groups in the nation (Coleman & Goldenberg, 2010; Garcia, 2012; U.S. Census Bureau, 2015). Public educational institutions have experienced a shift in enrollment and have been charged with the responsibility of providing emergent bilinguals with equal access to education with the purpose of meeting the academic needs of emergent bilinguals (Peterson, 2017).

According to Lesaux et al. (2008), the majority of emergent bilinguals in the United States enter the school system “needing to learn oral language and literacy in English, and they have to learn with enormous efficiency if they are to catch up with their monolingual English classmates” (p. 27). Schools today have an opportunity to provide effective literacy instruction to students of all linguistic backgrounds and levels

(Mercado, 2002). Therefore, it is vital for those in education to have a strong understanding of how emergent bilinguals progress within the area of English literacy development and identify ways in which EL students can be best supported. One such understanding is the concept of culturally sustaining pedagogy which “seeks to perpetuate and foster-to sustain-linguistic, literate, and cultural pluralism as part of the democratic project of schooling” (Paris, 2012, p. 93).

The culture present in schools today is one of academic accountability with longstanding initiatives such as No Child Left Behind and Race to the Top; and more recently, the adoption and implementation of the Common Core and Smarter Balanced assessments. The most noticeable implementation efforts of these mandates occur at the classroom level, while district and building administrators are ultimately charged with the responsibility of fostering academic success by “advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning” (Reynolds, 2011, p. 6).

There is a prevailing educational achievement gap in the United States, and linguistic minority students are leaving our nation's schools unprepared to meet the academic demands necessary for success in higher education or in the professional world (Garcia, 2012). In order for the EL populations to score at levels comparable to their native-English speaking peers, it is imperative for educational professionals to understand how to best meet their academic and linguistic needs. This study will contribute to the existing literature by further investigating the academic benefits of a dual language program on a more individualized level. Bilingual programs and literacy achievement have been the focus of many studies; however, few have more closely examined the reading components and their relationship to one another alongside English language acquisition and proficiency in order to determine best instructional practices and approach. This study will attempt to identify the attributes most representative of ELs. reaching a native-like level of proficiency in reading. Knowing the environment and specific areas of reading in which they consistently excel or struggle may provide policy-makers, researchers, and educators with an additional level of insight on which to base their instructional decisions; that will in turn, narrow or close the long-withstanding linguistic achievement gap.

Literature Review

Research is available that both advocates for (i.e., Lindholm-Leary, 2001; Thomas & Collier, 2002) and opposes (i.e., Baker & DeKanter, 1981) the use of the students' native language as a primary means of instruction as opposed to English only. Those in support of bilingual education propose that native language instruction enhances reading fluency, language proficiency, and cultural sustainability, while opponents suggest that less time on task will have a negative impact (Genesee & Riches, 2006). Baker and DeKanter (1981) and Rossell and Ross (1986) conducted syntheses to determine which program models were superior in increasing the reading achievement of language minority students and found that those prioritizing the English language were the most beneficial. On the contrary, more current studies reveal that lack of exposure to the native language results in increasingly lower levels of reading proficiency (Gersten & Woodward, 1995; Lindholm-Leary & Borsato, 2006; Ramirez, Yuen, Ramey, & Pasta, 1991; Thomas & Collier, 2002) thus suggesting the need to continue development of the students' first language.

The general achievement patterns of various maintenance and enrichment programs have been analyzed to determine their effectiveness on reading and language proficiency. Thomas and Collier (1997, 2001a, 2001b) revealed that English language learners enrolled in dual language programs had the highest success rate at the end of their twelfth-grade year. Based on the findings of this study, bilingual instruction is one of the means by which emergent bilinguals will reach grade-level performance in reading achievement and in language

development. This can be attributed to the high positive correlation between bilingual proficiency and reading achievement (Lindholm-Leary, 2001; Slavin & Cheung, 2004). Critics of bilingual education maintain that bilingual programming is too costly for the outcome and propose that taking an English-only approach to instruction is more efficient; and partially due to such perspectives, approximately only 800 dual language programs are present in the nation's public schools (Lindholm-Leary, 2013) and research is more limited as compared to other program models.

Bilingual education research focusing on dual language instruction reveals that students achieving a balanced state of bilingualism are among the highest scoring in English reading (Lucido, 2000). According to Thomas and Collier (1997), the key to this success is simultaneous language instruction in English and the minority language over an extensive period of time. Two-way programs have been considered by multiple authorities to be the best instructional option for supporting emergent bilinguals in reaching or exceeding grade-level potential in reading (Lindholm-Leary, 2001; Cobo-Lewis, Zurer-Pearson, Eilers, & Umbel, 2002; Lindholm-Leary & Borsato, 2006). As a result, many ELs. in these programs have achieved at levels higher than their ELs. and native-English speaking peers participating in monolingual classrooms by the end of their elementary years (Cazabon et al., 1993; Gomez, 2006; Gomez et al., 2005; Howard et al., 2004; Lindholm-Leary, 1995; Mercado, 2002; Thomas & Collier, 2006, 2010).

Research conducted on two-way programming has shown this model of instruction to be effective for linguistic minority peers; however, little is known about achievement trends within the specific components of literacy. Knowledge of these components is essential for creating an effective literacy program as well as for fostering student mastery in reading, yet there is limited research of how EL students in dual language programs perform within these specific areas. August et al. (2008) report that only seventeen studies adequately analyze the process of literacy development of emergent bilinguals compared to the over 400 available for native-English speakers, and much of what is known about these components has surfaced as a by-product of a broader study on reading achievement. Contradictory findings are evident in the areas of phonological processing, word-level skills, and text-level skills where research is available. This lack of knowledge makes it difficult for educational institutions to make appropriate instructional decisions for their EL populations.

The impact of moderator variables on reading achievement and language proficiency has also been primarily analyzed as a limitation of a study despite these factors heavily influencing the academic and linguistic progress of ELs. The one study specifically examining the impact of gender showed that it did not make a significant impact on reading development (Thomas & Collier, 2001a).

Purpose of the Study

Many English language learners at the elementary level are achieving at literacy levels below their English-only peers. According to Zong and Batalova (2015), 82% of these ELs were born in the United States thus indicating a strong likelihood that they have been educated exclusively in our schools but are yet underperforming. This study examines the impact of dual language instruction on the language acquisition and literacy achievement of ELs. in an elementary setting. This study examined both the academic and the demographic factors of emergent bilinguals at the elementary level enrolled in a dual language program as well as their EL and native-English speaking peers enrolled in English-only classrooms. State and national reading and language assessment data were analyzed at the sound, word, and text levels, as was student demographic information including gender and the primary language spoken in one's home. The goal of this research was to collectively analyze these components to determine their impact on EL reading achievement and language acquisition.

The research questions guiding this study include:

1. What impact does participation in a dual language program have on the reading achievement of native-English and emergent bilingual students?
2. What impact does participation in a dual language program have on the language acquisition of emergent bilingual students?
3. To what extent does dual language enrollment impact areas of literacy and language for ELs. enrolled in dual language programs compared to emergent bilingual peers enrolled in monolingual programs?
4. To what extent do demographic characteristics impact reading achievement and language acquisition of elementary ELs. (i.e., gender, primary language spoken in one's home)?

Significance of the Study

In its most recent report on graduation rates, the U.S. Department of Education disclosed that emergent bilinguals had the lowest graduation rate out of all subgroups at 57% compared to the national high school graduation rate of 79%. The Nation's Report Card (2015) reveals that fourth grade EL students perform below the basic proficiency level with an average National Assessment for Educational Progress (NAEP) reading score of approximately 189 points while their non-EL peers perform above basic with a score of approximately 226. Scores follow the same trends at the eighth-grade level. EL students perform below basic with an average score of 223 as compared to their non-EL peers performing above basic with an average score of 268.

Using the students' native language as opposed to English as the primary means of instruction is an on-going debate (Cummins, 1976) and per August et al. (2008), the research on literacy development in linguistic minority students pales in comparison to that available for native-English speakers. Societal factors also play a role in this on-going debate as

“most states and districts lack a vision for EL education that builds on families' cultural and linguistic assets.” (Tung, 2013, p. 2). This study aims to add support for dual language opportunities for emergent bilinguals and to promote an asset-based view of our ELs.

Methods

This study identified the achievement patterns and demographic characteristics of ELs. enrolled in the dual language program as compared to those ELs. and native-English speaking peers participating in an English-only classroom. This required a quantitative approach utilizing a one-way ANOVA with an F ratio, a Chi-Square test of independence, and a factorial two-way ANOVA. A one-way ANOVA with an F ratio was conducted to compare the mean percentile scores of the FAST aReading scores while a Chi-Square test of independence was used to compare the categorical data of the ELDA. A factorial two-way ANOVA with an independent t-test was conducted to compare the mean ELDA reading subtest percentile scores for English language learners participating in dual language and English-only programs in grades four and five to determine whether dual language enrollment had an impact on student performance within specific areas of literacy and language.

Study results contributed to the current literature regarding the impact of implementing a dual language program and offered greater insight into best program options and teaching practices for EL students. There are various factors that may have impacted the results or interpretation of these results including a 50:50 dual language program only focused on Spanish and English, a limited scope from only one year and one district, and uneven population sizes.

Population

The population for this study was derived from an elementary school located in a Midwestern state that houses dual language and English-only classrooms. The school district officials from this elementary school provided the following demographic information based on their official documents required during registration. The school has an EL populations of approximately 63%, and Hispanics comprise the largest minority group with a population rate of 67%. Other ethnicities represented within the building include White, Black, Native American, Asian, Pacific-Islander, and multi-race. Eighty-five percent of the total population has been classified as free or reduced lunch; thus, indicating a low-socioeconomic status and qualifying the school to receive the Community Eligibility Provision (CEP) which grants all students in high-poverty schools free breakfast and lunch regardless of individual household eligibility. This institution began the dual language program in 2006 as a response to community needs.

A 50:50 dual language model was adopted and Spanish and English served equally as the mediums for instruction. Based on best practice research (Gomez, Freeman, & Freeman, 2005), students receive daily literacy instruction in both

languages while other content areas are taught evenly in the two languages over the course of the school year. The program has expanded into all grades kindergarten through fifth with two sections at each grade level. Acceptance into the program is based on a lottery system. The goal is to have an equal number of students from each language group. Students with a native language other than English or Spanish are welcome to join the program and are considered as part of the English population. Each dual language classroom is limited to an enrollment of twenty-five. Non-native Spanish speaking students entering the program beyond the kindergarten level are required to pass a Spanish proficiency entrance exam to determine appropriateness of the program.

The school has a total population of 778 students in grades kindergarten through fifth in which 400 students are enrolled in the dual language program (327 ELs., 73 native English speakers) and 378 students are enrolled in a monolingual setting (225 ELs., 153 native English speakers). The languages represented among the ELs. sample of the dual language students include Spanish (n = 321), Mai Mai (n = 1), Laotian (n = 1), Cambodian (n = 2), and Oromigna (n = 2). These language groups are also represented among the monolingual student population as well as Vietnamese, Chinese, Portuguese, French, Somali, Tigrinya, Chuukese, and Amharic. Students in both samples vary in their language proficiency level from limited English proficient (beginning to advanced), first year monitoring (achieved native-like proficiency and are in the first year of monitoring), second year monitoring (achieved native-like proficiency and are in the second year of monitoring), non-limited English proficient (declined EL services, tested proficient on initial placement exam, or maintained proficiency beyond the two years of monitoring), and English-only.

Demographic Data

To be eligible for the study, participants needed to be enrolled in either the dual language or mainstream program at the participating K-5 institution during the 2015-16 school year and have valid FAST aReading scores. For students classified as ELs., valid ELDA scores were also required. Students not meeting this criterion were excluded from the study. The final sample for this study included 385 dual language and 300 non-dual language participants.

Instrumentation

English Language Development Assessment (ELDA). The Council of Chief State School Officers describes the ELDA as a valid and reliable assessment designed to measure the language proficiency skills of English language learners in the areas of listening, speaking, reading, and writing (Cook & Linqanti, 2015). The battery includes kindergarten and grades 1-2 observation inventories and separate assessments at the 3-5, 6-8, and 9-12 grade level clusters. Each inventory includes a series of reading (14), writing (9), listening (7), and speaking (8) entries and is individually scored on a 0-3 scale. The

assessment for grades 3-5 includes a series of reading (35), writing (16), listening (35), and speaking (12) items. The writing and speaking portions are evaluated by district appointed personnel and scored according to ELDA rubrics. State officials from the Midwestern state's Department of Education score the reading and listening portions of the assessment.

The reading portion consists of short and long passages as well as comprehension of written instructions and requires students to demonstrate early to advanced reading skills. The writing portion consists of written responses in addition to responding to writing prompts and requires that students show knowledge of the writing process. The listening portion consists of short phrases, short and long dialogues, and short presentations to assess student comprehension of various speech and language patterns. The speaking portion consists of items that require students to verbally connect, tell, expand, and reason according to various prompts. The assessments are not timed. Accommodations required by students per individual learning plans are honored. Standard procedure training is required annually for all individuals administering or scoring the assessment. It is administered via paper-and-pencil to all limited English proficient students annually in the spring testing window.

The Council of Chief State School Officers (CCSSO) has developed standards for each language component which assess language learning students' ability to read, write, listen, and speak in English. Scaled scores earned on the assessment are converted to a proficiency score ranging from 1 (pre-functional) to 5 (fully English proficient). The EL receives a proficiency score in each component. The mean scale score of each of the components is totaled to determine a composite score. This composite score is converted to a proficiency score using the same proficiency continuum. Percentage scores are also assigned to each skill assessed within the reading component. The percentages are based on the number of correct responses per skill area. This research analyzed the proficiency scores for the reading component and composite and the percent-correct scores for the specific reading skills.

Formative Assessment System for Teachers (FAST). The FAST is considered to be a suite of evidence-based assessment tools specifically designed to screen and to progress monitor students at the elementary and secondary levels. Dr. Christ and colleagues from the University of Minnesota received funding from the United States Department of Education to help create the FAST assessment. This allowed educators to analyze reading skills through the use of a universal screener and monitoring system. An oral assessment was administered to measure the fluency of a student while the teacher listens to a student reading three reading passages at grade level. Each reading passage lasts one minute, and the teacher records the students' words read correct per minute (WCPM) and accuracy from the three passages. There is also a weekly component that monitors student progress toward the determined fluency

benchmark score. The Tools for Innovation and Educational Research (TIER) electronic data management system supports the delivery and data tracking of the assessment. This research specifically analyzed the results from one of the assessment tools: Adaptive Reading (aReading).

Adaptive Reading (aReading). This assessment was designed for students in kindergarten through grade six to evaluate reading achievement as aligned to the National Common Core Standards. The components assessed include concepts of print, phonological awareness, phonics and decoding, vocabulary, and comprehension. Each assessment is administered and scored electronically. The questions and length of the assessment adapt according to student ability and response pattern. The test consists of a possible 30 questions written in standardized question-response format (i.e., multiple choice, fill in the blank). The assessment is administered to students during the fall, winter, and spring testing windows with the exception of kindergarten students who only take the assessment in the winter and spring. The assessment utilizes scaled scores, which are vertically scaled and comparable across the grade levels as well as to grade level benchmarks. These scores are translated to descriptors describing student skills as without mastery, developing, or mastered. Standard procedure training is required annually for all individuals administering the assessment.

Data Collection

This study utilized ex post facto data with permission from the public-school district in a Midwestern state. Permission was originally sought for the demographic, and academic data of all English language learners in the district from the 2007-2008 academic year through 2015-2016. Demographic information included student gender and primary language spoken in one’s home. Academic information included FAST aReading scores and ELDA proficiency levels and subtest scores.

Data Analysis

To determine the degree of differences between the two sample groups, the means and standard deviations were computed for each group. The 0.05 probability level of significance was used for analysis. A two-tailed test of significance was utilized due to the need to analyze the outcomes observed from both directions.

Research Question 1 sought to determine the impact that participation in a dual language program has on the reading achievement of native-English and linguistic minority students. This required a comparison of the FAST aReading scores of the native-English and English language learner (ELs.) students enrolled in the dual language program to those scores achieved by these populations in the English-only classrooms. A one-way ANOVA with an F ratio was used to compare the sample means. Research Question 2 aimed to identify any impact that participation in a dual language program has on the language acquisition of emergent bilinguals. This required a comparison of the English Language Development Assessment

(ELDA) composite proficiency levels of the ELs. enrolled in the dual language program to this population in the English-only classrooms. A Chi-Square test of independence was conducted to compare the categorical data. Research Question 3 involved comparing the ELDA Reading subtest percentile scores of the ELs. in the fourth and fifth grades enrolled in the dual language program to this population in the English-only classrooms. The researchers attempted to obtain data from additional grade levels in the district but was only able to secure data from fourth and fifth grades. A factorial two-way ANOVA with an independent t-test was used to compare the mean percentile scores. Research Question 4 compares the demographic features of gender and one’s primary language spoken at home of dual language students to determine the impact of these characteristics on reading achievement and language acquisition of elementary ELs. A one-way ANOVA with an F ratio was conducted to compare the mean percentile scores of the FAST aReading scores while a Chi-Square test of independence was used to compare the categorical data of the ELDA.

Findings

Impact of Enrollment in Dual Language on Reading Achievement

A one-way ANOVA was conducted to compare the mean FAST aReading scores for dual language and English-only native-English (NE) speakers, native-Spanish (NS) speakers, and native speakers of other languages (NO) in K-2 and 3-5 grade bands were compared to each other to determine whether reading achievement was impacted by enrollment in a dual language program (Research Question 1). ANOVA results of this comparison are outlined in Table 1.

Table 1
Mean Scores for FAST aReading of Dual Language and Mainstream Students

	Language					
	Native English		Native Spanish		Native Other	
	Grade Band					
	K-2	3-5	K-2	3-5	K-2	3-5
	FAST aReading Spring 2015-16 Mean Scores					
Non-Dual Language	460.92	503.00	441.41	492.13	452.63	497.45
Dual Language	472.19	506.50	447.61	493.97	453.33	*
N	95	86	236	198	41	29

Impact of Dual Language Enrollment on Language Acquisition

A Chi-Square test of independence was conducted to compare the percentage of K-2 and 3-5 English language learners

participating in dual language and English-only programs scoring Advanced (Level 5) and Fully English Proficient (Level 6) on the ELDA to determine whether English language acquisition was impacted by enrollment in a dual language program.

Table 2
ELDA Composite Proficiency Level Percentages of Dual Language and Mainstream English Language Learners

	Grade Band			
	K-2		3-5	
ELDA Composite Proficiency Level				
	5	6	5	6
Percentage of Student Scores				
Non-Dual Language	8.9	5.4	7.3	19.3
Dual Language	4.5	14.4	7.5	19.6

Impact on Specific Areas of Literacy and Language Achievement

A factorial two-way ANOVA with an independent t-test was conducted to compare the mean ELDA reading subtest percentile scores for English language learners participating in dual language and English-only programs in grades four and five to determine whether dual language enrollment had an impact on student performance within specific areas of literacy and language (Research Question 3). The reading subtests analyzed include Prereading/Early Reading, Main Idea, Supporting Ideas, Instructions, Vocabulary, and Inferencing. ANOVA results outlined in Table 3 reveal that ELs. in dual language outperform their English-only counterparts in the area of Prereading/Early Reading.

Table 3
Mean ELDA Percentile Scores for Prereading/Early Reading Subtest of Dual Language and Mainstream English Language Learners in Grades 4-5

	N	ELDA Prereading/Early Reading 2015-16 Mean Percentile	p
Non-Dual Language	65	78.29	.047
Dual Language	74	85.16	

The ANOVA results outlined in Table 4 reveal that ELs. in dual language outperform their English-only counterparts in the area of Main Idea. The difference of 8 points between dual

language ($M=66.89, SD=34.40$) and non-dual language ($M=59.23, SD=39.42$) students is not statistically significant ($t(137) = -1.224, p < .223$).

Table 4
Mean ELDA Percentile Score for Main Idea Subtest of Dual Language and Mainstream English Language Learners in Grades 4-5

	N	ELDA Main Idea 2015-16 Mean Percentage
Non-Dual Language	65	59.23
Dual Language	74	66.89

The ANOVA results outlined in Table 5 reveal that ELs. in dual language outperform their English-only counterparts in the area of Supporting Ideas. The difference of 6 points between dual language ($M=66.89, SD=26.84$) and non-dual language ($M=61.38, SD=29.36$) students is not statistically significant ($t(137) = -1.155, p < .250$).

Table 5
Mean ELDA Percentile Score for Supporting Ideas Subtest of Dual Language and Mainstream English Language Learners for Grades 4-5

	N	ELDA Supporting Ideas 2015-16 Mean Percentage
Non-Dual Language	65	61.38
Dual Language	74	66.89

The ANOVA results outlined in Table 6 reveal that ELs. in dual language outperform their English-only counterparts in the area of Instructions. The difference of 12 points between dual language ($M=67.57, SD=31.35$) and non-dual language ($M=55.69, SD=30.31$) students is statistically significant ($t(137) = -2.263, p > .025$).

Table 6
Mean ELDA Percentile Score for Instructions Subtest

	N	ELDA Instructions 2015-16 Mean Percentage	p
Non-Dual Language	65	55.69	.025
Dual Language	74	67.57	

The ANOVA results outlined in Table 7 reveal that ELs. in dual language outperform their English-only counterparts in

the area of Vocabulary. The difference of 9 points between dual language ($M=60.26$, $SD=28.23$) and non-dual language ($M=60.00$, $SD=32.11$) students is not statistically significant ($t(137) = -.1.809$, $p < .073$).

Table 7

Mean ELDA Percentile Score for Vocabulary Subtest

	Number of Students	ELDA Vocabulary 2015-16 Mean Percentile
Non-Dual Language	65	60.00
Dual Language	74	69.26

The ANOVA results outlined in Table 8 reveal that ELs. in dual language outperform their English-only counterparts in the area of Inferencing. The difference of 7 points between dual language ($M=61.66$, $SD=30.51$) and non-dual language ($M=55.11$, $SD=30.89$) students is not statistically significant ($t(137) = -.1.256$, $p < .211$).

Table 8

Mean ELDA Percentile Score for Inferencing Subtest

	N	ELDA Vocabulary 2015-16 Mean Percentile
Non-Dual Language	65	55.11
Dual Language	74	61.66

Impact of Gender and Primary Language Spoken in One’s Home on the Reading Achievement and Language Acquisition of Dual Language Participants

The mean FAST aReading and ELDA composite scores were analyzed according to gender and primary language spoken in one’s home in order to determine their impact on reading achievement and English language proficiency of dual language students (Research Question 4). A one-way ANOVA was conducted to determine the impact of gender and language on reading achievement. A Chi-Square test of independence was conducted to determine the impact of gender and language on English language proficiency.

Among the K-2 students, there was almost no difference in the FAST aReading scores between male and female groups. For the 3-5 male and female students, the difference was 3 points. The mean FAST aReading scores for K-2 and 3-5 male and female students enrolled in dual language ($M= 467.29$, $SD= 38.39$) were combined and compared to determine the impact of gender on reading achievement. Results of the ANOVA outlined in Table 9 show there was not a statistically significant difference of gender on reading achievement at the $p < .05$ level [$F=.316$, $p=.574$].

Table 9

Mean FAST aReading Scores of K-2 and 3-5 Dual Language Male and Female Students

Grade	Gender	Mean	Std. Deviation	N
K-2	Female	452.36	35.93	136
	Male	451.31	36.11	114
3-5	Female	497.35	24.60	62
	Male	494.52	22.92	73
Total	Female	466.45	38.86	198
	Male	468.18	37.98	187
	Total	467.29	38.39	385

Due to variance in sample sizes, mean FAST aReading scores for K-2 and 3-5 dual language students ($M= 495.82$, $SD= 23.66$) were combined and analyzed according to the primary language spoken in one’s home. ANOVA results summarized in Table 10 indicate that there was a significant effect of the primary language spoken in one’s home on reading achievement at the $p < .05$ level [$F= 3.93$, $p=.002$].

Table 10

Mean FAST aReading Scores for K-2 and 3-5 Dual Language Student Home Language Groups

Grade	Language	Mean	Std. Deviation	N
K-2	English	472.19	30.37	42
	Spanish	447.61	35.90	202
	Mai Mai	441.00	*	1
	Cambodian	433.00	8.49	2
	Laotian	439.00	*	1
	Oromigna	487.00	15.56	2
	Total	451.88	35.94	250
3-5	English	506.50	16.96	20
	Spanish	493.97	24.22	115
	Total	495.82	23.66	135

Chi-Square test of independence was conducted to compare the percentage of dual language K-2 and 3-5 male and female English language learners scoring Advanced (Level 5) and Fully English Proficient (Level 6) on the ELDA to determine whether English language acquisition was impacted by gender.

Among the K-2 group, there was almost no difference in male and female students scoring a Level 5. For the 3-5 group, there

is almost no difference in male and female students scoring at either a Level 5 or Level 6. Chi-Square values for these comparisons outlined in Table 11 indicate that no significant interaction found between gender and English language acquisition at the $p < .05$ level for the K-2 ($X^2(5) = 1.7, p < .895$) or the 3-5 ($X^2(5) = 1.5, p < .917$) grade bands.

Table 11

ELDA Composite Proficiency Level Percentages of K-2 and 3-5 Dual Language Male and Female Students

Grade Band									
K-2		3-5							
Gender		Female		Male		Female		Male	
ELDA Composite 2015-16 Proficiency Percentage Scores									
5	6	5	6	5	6	5	6	5	6
4.3	17.4	4.8	11.1	8.0	20.0	7.0	19.3		
%	%	%	%	%	%	%	%		

A Chi-Square test of independence was conducted to compare the percentage of K-2 ELs participating in dual language scoring Advanced (Level 5) and Fully English Proficient (Level 6) on the ELDA to determine whether English language acquisition was impacted by the primary language spoken in one's home. Of the five primary languages spoken in one's home represented among this sample group (Spanish, Mai Mai, Cambodian, Oromigna, and Laotian), only the Spanish speaking group had students score at a Level 5. Only Spanish (14.2%) and Oromigna (50%) speaking students scored at a Level 6. The 36% difference in the two language groups may be a consequence of the large variance in the groups' sample sizes. Results of the ANOVA summarized in Table 12 indicate that the primary language spoken in one's home does not have a statistically significant effect on English language acquisition at the $p < .05$ level for the K-2 ($X^2(20) = 15.7, p < .735$) sample. Provided there was a larger sample size, a statistically significant effect may have been detected. No study analysis was conducted for the 3-5 grade band as Spanish is the only primary language spoken in one's home represented among this sample group.

Table 12

ELDA Composite Proficiency Level Percentages for K-2 Dual Language Student Home Language Groups

K-2 Grade Band

	Language									
	Spanish		Mai Mai		Cambodian		Laotian		Oromigna	
ELDA Composite 2015-16 Proficiency Percentage Scores										
	5	6	5	6	5	6	5	6	5	6
Dual Language	4.7%	14.2%	0%	0%	0%	0%	0%	0%	0%	50%

Discussion

The results of this study support the implementation of two-way, or dual language models of instruction for school-aged native-English and for emergent bilinguals. Comparable to the studies conducted by Lindholm-Leary (2001) and Thomas and Collier (1997, 2001a, 2001b), this study's results show dual language education to have a positive impact on the reading achievement of emergent bilinguals although not statistically significant outside the areas of Early/Prereading and Instructions. This supports an enrichment bilingual model that emphasizes the continued simultaneous development of both the minority and majority language and culture despite political and societal pressures (Cederberg, Hartsmar, & Lingärde, 2009; Lambert & Wolfgang, 1973). Dual language opportunities also help students break down the barriers of monolingualism, monoculturalism, and elitism (Kubota, 2010; Keneman, 2016). Opponents of dual language instruction maintain that time away from English results in lower reading proficiency; however, findings from this study show that students participating in the dual language program score equivalent to or above their peers enrolled in monolingual classrooms. This indicates that the dual language model is more effective in fostering reading proficiency than alternative approaches such as ESL pullout. Likewise, it supports the research of Genesee and Riches (2006) and Ramirez et al. (1991) in that English language learners can accommodate two languages without negative consequences on English language acquisition or literacy development.

Enrollment in a dual language program reveals a positive impact on the English language acquisition of emergent bilinguals although not at statistically significant levels. Similar to studies conducted by Genesee (1983) and Slavin, Madden, Calderon, Chamberlain, and Hennessy (2011), this study shows that students in the intermediate elementary grades did not experience more of a discrepancy in language proficiency compared students in the primary years; in fact, this study shows dual language and non-dual language ELs to be more comparable in the later years. This study confirms that continued instruction in the native language supports acquisition in English; again, refuting the argument that less time engaged in English-only instruction results in limited language acquisition.

This study also analyzes the impact of a dual language model on school-aged native-English speakers and speakers of native languages other than English and Spanish (i.e., Mai Mai,

Cambodian, Laotian, Oromigna). While these populations of students have not been previously analyzed in an extensive study on bilingual models of instruction, results from this study show these populations experience outcomes similar to the native-Spanish speaking participants in regard to reading achievement and to English language acquisition. These results are despite time away from English instruction and in the presence of a third language for some EL students. This study shows that the primary language spoken in one's home has a statistically significant impact on reading achievement which may be indicative of the cognitive benefits associated with bilingual and multilingualism (see Table 10); however, the population of students speaking a language other than English and Spanish was small and may have impacted the results. The outcomes of this study support the participation of students of all linguistic backgrounds in dual language programs regardless if their primary language spoken in one's home is represented. This is important because dual language programs promote language and literacy development in the areas of Prereading/Early Reading, Main Idea, Supporting Ideas, Instructions, Vocabulary, and Inferencing.

The researchers in this study are unaware of any research detailing the trends surrounding male versus female enrollment in dual language programs. The school in this study aims for fifty percent participation of male and female students at each grade level. This study supports this practice as no significant difference was found in the reading achievement or language acquisition of male and female students enrolled in the program.

As educational institutions determine how to best service their growing population of English language learners as well as their native-English speakers, this study suggests that dual language programs are appropriate for all learners. Students must have spaces within their classrooms to redefine their identities, to claim their linguistic repertoires, and to learn about other cultures (DeNicolo & González, 2015). Previous research on the reading achievement and English language acquisition of language minority students shows bilingual methods of instruction as necessary to meet the academic needs of emergent bilinguals (i.e., Genesee & Riches, 2006; Lindholm-Leary, 2006, 2013; Thomas & Collier, 1997, 2001a, 2001b, 2002). These findings are confirmed by this study as results show all students in this dual language program to be scoring at rates equal to or above ELs. and native-English speaking peers in monolingual learning environments. Past research has shown greater discrepancies in the literacy and language achievement among dual language and English-only students as participation in the dual language program increases. However, even though the results were more often not statistically significant, the dual language program should be considered the superior option since these results were achieved while students gained the added benefit of becoming competent in another language.

Limitations and Delimitations

There are various factors that may have impacted the results or interpretation of these results. First, the generalizability of these results may be limited. The study was limited to only those students enrolled at one participating K-5 institution. The student population is primarily Hispanic and the adopted dual language program focused only on the Spanish and English languages, although students with other language backgrounds are participants of the program and included in the study. This results in a particular mix of students with certain language backgrounds. Therefore, results may not be generalizable to schools serving students with a different mix of backgrounds.

Two data limitations constrained this study. First, the participating institution qualifies for the Community Eligibility Provision (CEP) of the Healthy-Hungry Kids Act of 2010. This enables institutions with high poverty rates to provide all students with free meals despite eligibility on an individual level. Household applications outlining socio-economic data are no longer required which prevented the researchers from determining the direct impact of this variable. Second, the ex post facto data made available for this study was collected within one academic year. Academic proficiency develops with time, and without longitudinal data, the impact of growth may not be fully perceived.

Third, participation in the dual language program was not assigned randomly. A lottery system for acceptance is utilized when the program is at its capacity at the kindergarten level. However, siblings of students currently enrolled in the program bypass the lottery. Students entering the dual language program after the kindergarten level must pass a Spanish proficiency assessment prior to acceptance. Also, families opting for dual language may have specific characteristics that relate to increased literacy and language outcomes. These parameters may contribute to increased literacy and language outcomes for students in dual language.

Conclusions

Based on this study, we conclude that dual language participation can assist in closing this nation's existing linguistic achievement gap as dual language students either scored equivalent to or above their mainstream peers on all measures of reading and language proficiency. This includes English language learners in dual language achieving scores more comparable to their native English-speaking peers in mainstream classes. Bilingual instruction through a 50:50 Dual Language Model contributes to positive academic results in the areas of reading achievement and language acquisition for students at the elementary level.

Moreover, dual language participation appears to foster the continued development of word and text-level skills into the intermediate elementary years and indicates signs of positive transfer as dual language ELs. in grades 4-5 outperformed their mainstream peers in the each of the assessed specific areas of reading. Dual language instruction is appropriate for both male and female students as differences in gender do not play a

significant role in the reading achievement or English language acquisition of elementary age students participating in the program.

Consistent exposure to more than one language through a dual language model appears to enhance the reading achievement of diverse elementary students. Surprisingly, this includes students whose home language is not represented in the instructional model. Students who have a home language separate from those languages emphasized during instruction are not disadvantaged through participation in the program, but rather may be more able to capitalize on the benefits associated with multilingualism.

Recommendations for Future Research

We offer four recommendations for future study. First, future research should consider how to increase the generalizability of these results. This study was limited to the student population at one Midwestern school and included data from only one academic year. It should be replicated with a larger sample size and over a longer period. Also, this study included all students with spring FAST aReading and ELDA assessment scores. It did not identify students with late enrollment to the school or dual language program nor additional supplemental factors that could potentially impact the findings.

Second, this study could be replicated to analyze the results if the participants were English-only or Spanish-only speakers. This study could also be replicated with different age ranges.

Next, this study solely focused on reading achievement and English language acquisition in literacy. The focus of future studies should expand to include additional components of literacy and language, other discipline areas, and nonacademic factors such as socioeconomic status. Results from the FAST a Reading and ELDA assessments were used to determine the outcomes of this study. Future studies should use additional similar reading and language acquisition assessments used within the district to determine consistency in the study findings.

Finally, dual language instruction can be structured in ways that differ from the 50:50 model. Future research should analyze the various models of dual language instruction to determine whether results are consistent with the findings in this study. Additionally, studies should be conducted on other pedagogical approaches to supporting English language learners such as structured immersion, and transactional and developmental bilingual models. Continued research on models of language instruction is sure to benefit our increasingly diverse schools.

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