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Bilingual Education Program Type and the Reading Performance of Emergent Bilingual Children: A Multiyear, Texas Investigation

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Introduction

Over 50 years has elapsed the 63rd Texas Legislature enacted the Bilingual Education and Training Act, a historical landmark that advocated for the education of Bilingual students in Texas, mandating elementary schools enrolling more than 20 students with limited English proficiency to provide bilingual instruction. This enactment ended the English-only education policy imposed by the state in 1918 (Rodriguez, 2020). As the state ensures the academic and linguistic advancement of Emergent Bilingual students, four bilingual program types are currently offered by schools and school districts to meet their instructional needs. These bilingual education program types are (a) Transitional Bilingual/Early Exit, (b) Transitional Bilingual/Late Exit, (c) Dual Language Immersion/Two-Way, and (d) Dual Language Immersion/One-Way.

The Transitional Bilingual/Early Exit model provides 'instruction in literacy and academic content areas through the medium of the student's first language, along with instruction in English oral and academic language development. Non-academic subjects such as art, music, and physical education may also be taught in English" (Texas Education Agency. para 2). Students cannot exit the program before the end of Grade 1, or if students enter the program after Grade 1, they are eligible to exit the program within a minimum of two to five years. The Transitional Bilingual/Late Exit program provides "academic growth is accelerated through cognitively challenging academic work in the student's first language along with meaningful academic content taught through the student's second language, English. The goal is to promote high levels of academic achievement and full academic language proficiency in the student's first language and English" (Texas Education Agency, para 3). Eligibility to exit the program may only be allowed between six or later than seven years after enrollment to a school. Baker (1990), Rennie (1993), and Tong et al. (2008) explained that the goal of transitional bilingual education

is to shift from the student's native language to English language acquisition.

The Dual Language Immersion/Two-Way program serves students who are proficient in English and those individuals identified as Emergent Bilingual. In this program type, "instruction is provided to both native English speakers and native speakers of another language in an instructional setting where language learning is integrated with content instruction. Academic subjects are taught to all students through both English and the other language" (Texas Education Agency, 2024, para 4). On the other hand, Dual Language Immersion/One-Way only serves students identified as Emergent Bilinguals, and academic subjects are taught in English and the other language. Students cannot exit earlier than six years within the program for both Dual Language Programs (Texas Education Agency, 2024). Researchers (e.g., Baker, 1990; Lindholm, 1991; Lindholm-Leary, 2001; Morrison, 1990) contend that dual language programs promote balanced bilinguals because both the native language and the English language are equally used in the teaching and learning instructional practices.

Despite these four Emergent Bilingual programming options, recent researchers (Argueta et al., 2023; Martin & Slate, 2023; Resilla & Slate, 2022, 2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2023g; Schleeter & Slate, 2023; Villalobos & Slate, 2023) have documented the underperformance of Emergent Bilingual students in Texas state assessments. Thus, a propelling question needs to be addressed on the academic performance of Emergent Bilingual students as it relates to their programming services. Is there a difference between the performance of Emergent Bilingual students in their state assessment concerning the Emergent Bilingual program model offered in their school or school district?

In a study conducted by Martinez et al. (2014), they examined the reading and mathematics achievement of Emergent Bilingual students in Grades 3, 4, 5, and 6 as a function

of Early-Exit and Late-Exit Bilingual Programs in the 2008-2009, 2009-2010, and 2010-2011 school years, based on the Texas state assessment which was the Texas Assessment of Knowledge and Skills. The authors concluded that no one programming model was more effective than the other. Effect sizes were small and were inconsistent across the grade levels and subject areas investigated. Similarly, Trevino et al. (2014) conducted a study on the performance of Emergent Bilingual students in their reading and mathematics state assessments as a function of the dual-language and exit program models for the sch 2008-2009, 2009-2010, and 2010-2011 school years in Grades 3, 4, 5, and 6. Contrary to Martinez et al. (2014), Trevino et al. (2014) revealed that in all 24 analyses conducted, students enrolled in dual language programs outperformed Emergent Bilingual students enrolled in the exit programs. The authors further asserted that the results of their study were congruent with Baker's (1990) assertion that dual language programs are considered vital biliteracy and bilingual education programs.

A decade has passed since the publication of Martinez et al. (2014) and Trevino et al.'s (2014) empirical articles. A new Texas state assessment, the State of Texas Assessment of Academic Readiness, is administered yearly to measure the academic achievement of all students. In this research article, we intend to provide the most recent findings on the performance of Emergent Bilingual students regarding their bilingual education program.

Theoretical Framework

This multiyear statewide research investigation is grounded in Culturally Responsive Education. Ladson-Billings (2009) initially coined Culturally Relevant Pedagogy to encompass pedagogical, theoretical, and school-wide practices that empower students to address socio-political inequities in these learning spaces. Ladson-Billings described teachers in these classrooms working with African American students who allow these students to take on the

teacher role and the teachers being learners in these classrooms. D'Andrea Martinez et al. (2023) utilized Ladson-Billings framework and included works of several researchers (e.g., Aronson & Laughter, 2015; Cabrera et al., 2014; Cammarota, 2007; Dee & Penner, 2016; Howard, 2001; Jafe-Walter & Lee, 2018) in identifying Culturally Responsive Education and whereby they asserted the schools and classrooms which practice Culturally Responsive Education "have shown higher student interest and motivation, higher self-perception and confidence, a greater ability to engage in critical discourse, and greater alignment between youth goals and school goals" (p. 479). In recent studies, Culturally Responsive Education has added to its scope different cultural and linguistic groups such as "Latinx and other Indigenous youth" (p. 479).

Purpose of the Study

In this multiyear analysis, we attempted to determine the extent to which differences were present in Grade 3 Emergent Bilingual student reading performance by the type of bilingual education program type in which they were enrolled. We specifically compared their performance on the three STAAR Reading Reporting Categories (i.e., Category 1, Category 2, and Category 3) and on the three STAAR Reading grade level performance measures (i.e., Approaches Grade Level, Meets Grade Level, and Masters Grade Level) for three consecutive years (i.e., 2016-2017, 2017-2018, and 2018-2019) before the pandemic. All analyses were conducted to determine whether bilingual education program type was related to Emergent Bilingual student reading performance.

Significance of the Study

Results from the statistical analyses we conducted in this multiyear study will fill in the current literature gap regarding the performance of Emergent Bilingual students in the state-mandated assessments as a function of their bilingual education program type in Texas. We

could locate only two similar studies conducted by Martinez et al. (2014) and Trevino et al. (2014). A decade has passed since the publication of these two research studies, and a need exists to explore the academic performance of Emergent Bilingual students by their bilingual education program type. Our findings can serve as a baseline prior to the Covid pandemic and its resulting effects on student learning.

Research Questions

The following overarching research question was addressed in this article: What is the difference in the reading performance of Grade 3 Emergent Bilingual students as a function of the specific type of bilingual education program in which they were enrolled? Specific subquestions under this overarching research question were: (a) What is the difference in the understanding across genres performance (i.e., Reading Category 1) of Emergent Bilingual students by bilingual education program type?; (b) What is the difference in the understanding/analysis of literary texts performance (i.e., Reading Category 2) of Emergent Bilingual students by bilingual education program type?; (c) What is the difference in the understanding/analysis of informational texts performance (i.e., Reading Category 3) of Emergent Bilingual students by bilingual education program type?; (d) What is the difference in the STAAR Grade 3 Reading Approaches Grade Level performance of Emergent Bilingual students by bilingual education program type?; (e) What is the difference in the STAAR Grade 3 Reading Meets Grade Level performance of Emergent Bilingual students by bilingual education program type?; (f) What is the difference in the STAAR Grade 3 Reading Masters Grade Level performance of Emergent Bilingual students by bilingual education program type?; and (g) What trends are present in the reading performance of Emergent Bilingual students by their bilingual education program type? These research subquestions were addressed for the three school years

(i.e., 2016-2017, 2017-2018, and 2018-2019) prior to the Covid pandemic.

Method

Research Design

In this multiyear analysis, we used a causal-comparative research design (Johnson & Christensen, 2020). We obtained secondary or archival data from the State of Texas to conduct our comparisons of bilingual education program type. In a causal-comparative research design, pre-existing data are analyzed. As such, cause-and-effect determinations are not possible (Johnson & Christensen, 2020).

In this investigation, the independent variable was the specific type of bilingual education program type in which students were enrolled (i.e.,Transitional Bilingual/Early Exit, Transitional Bilingual/Late Exit, Dual Language Immersion/Two-Way, and Dual Language Immersion/One-Way). Dependent variables were Emergent Bilingual student performance on the three STAAR Reading Reporting Categories (i.e., understanding across genres performance [Reading Category 1]; understanding/analysis of literary texts performance [Reading Category 2)]; understanding/analysis of informational texts performance [Reading Category 3] and the STAAR Grade 3 Reading exam grade level standards (i.e., Approaches Grade Level, Meets Grade Level, and Masters Grade Level). Data were obtained and analyzed for the three school years prior to the Covid pandemic (i.e., 2016-2017, 2017-2018, and 2018-2019).

Participants and Instrumentation

Our sample of students in this investigation met the criteria for being Emergent Bilingual students in the State of Texas. According to the Texas Education Agency, the term “Emergent Bilingual student” previously known as Limited English Proficient student and English Learner, describes “a student who is in the process of acquiring English and has another language as the

student's primary language or home language" (2023a, p. 2). Specific numbers of Emergent Bilingual Students by school year and by bilingual education program are present in the descriptive statistics tables that follow. In each school year, data on over 30,000 Emergent Bilingual Grade 3 students were analyzed.

On the Grade 3 STAAR Reading test, multiple outcome measures are present, both in terms of reporting categories and in specific student grade level performance. The first three measures we analyzed were Reading Reporting Categories. Determined in Reading Reporting Category 1 is student understanding across genres (Texas Education Agency, 2017). Reading Reporting Category 2 assesses understanding/analysis of literary texts whereas Reading Reporting Category 3 measures understanding/analysis of informational texts (Texas Education Agency, 2017).

Also addressed in this article were the three grade level standards (i.e., Approaches Grade Level, Meets Grade Level, and Masters Grade Level) because they are the most relevant ones for students and for educational leaders. As defined by the Texas Education Agency (2017), the Approaches Grade Level standard is interpreted to mean that students are likely to be successful in the next grade level, however, students at the Approaches Grade Level standard should receive targeted academic interventions. The Texas Education Agency (2017) defined the Meets Grade Level standard as reflective that students have a high probability of being successful in the next grade. Students at this Meets Grade Level standard should receive short-term, targeted interventions. At the Masters Grade Level standard, the Texas Education Agency (2017) indicated that students are expected to be successful in the next grade. As such, students at the Masters Grade Level standard should receive little to no academic interventions (Texas Education Agency, 2017).

Results

Data Analysis

Two different types of inferential statistical procedures were calculated to address the research questions presented earlier. For the three STAAR Reading Reporting Categories, a MANOVA, followed by univariate ANOVAs, were calculated because the reporting categories were interval/ratio level data. Regarding the three STAAR grade level standards, Pearson chi-square procedures were performed because the grade level standards were nominal in nature. Either students were determined to have met the grade level standard or they were determined that they had not met the standard. For both sets of statistical procedures, the level of statistical significance of .05 was adjusted because of the multiple statistical procedures that were calculated at each school year. Six analyses were performed at each school year for that specific sample of Emergent Bilingual students. As such, the typical level of statistical significance of .05 was adjusted (i.e., divided by 6) to avoid increasing experimentwise error. Even with this adjusted level of .008 (i.e., referred to as the Bonferroni method of adjustment), all statistical analyses met this adjusted level of statistical significance.

Reading Reporting Category 1 (i.e., Student Understanding Across Genres) Results Across All Three School Years

Following the overall results of the MANOVA, univariate follow-up Analysis of Variance (ANOVA) procedures were conducted for each of the three STAAR Reading Reporting Categories. For the 2016-2017 school year, a statistically significant difference was present in the Reading Reporting Category 1 by bilingual education program enrollment status, $F(3, 46890) = 57.99$, $p < .001$, partial $\eta^2 = .004$, a below small effect size (Cohen, 1988). Scheffe' post hoc procedures revealed that Emergent Bilingual students enrolled in the Dual Language Two-Way

program answered statistically significantly more items, on average, than were answered by Emergent Bilingual students who were enrolled in the Transitional Early Exit, Transitional Late Exit, or Dual Language One-Way programs. The fewest number of test items answered correctly occurred for Emergent Bilingual students in the early exit program. Emergent Bilingual students in the Late Exit and One Way programs answered a similar number of test items correctly. Delineated in Table 1 are the descriptive statistics for this analysis.

With respect to the 2017-2018 school year, a statistically significant difference was present in the Reading Reporting Category 1 by bilingual education program enrollment status, $F(3, 38753) = 20.28$, $p < .001$, partial $\eta^2 = .002$, a below small effect size (Cohen, 1988). Scheffe' post hoc procedures revealed that Emergent Bilingual students enrolled in the Dual Language Two-Way program answered statistically significantly more items, on average, than were answered by Emergent Bilingual students who were enrolled in the Transitional Early Exit, Transitional Late Exit, or Dual Language One-Way programs. The fewest number of test items answered correctly occurred for Emergent Bilingual students in the early exit program. Emergent Bilingual students in the Late Exit and One Way programs answered a similar number of test items correctly. Delineated in Table 1 are the descriptive statistics for this analysis.

Concerning the 2018-2019 school year, a statistically significant difference was present in the Reading Reporting Category 1 by bilingual education program enrollment status, $F(3, 101634) = 71.65$, $p < .001$, partial $\eta^2 = .006$, a below small effect size (Cohen, 1988). Scheffe' post hoc procedures revealed that Emergent Bilingual students enrolled in the Dual Language Two Way program answered statistically significantly more items, on average, than were answered by Emergent Bilingual students who were enrolled in the Transitional Early Exit, Transitional Late Exit, or Dual Language One-Way programs. Emergent Bilingual students in

the early exit, late exit, and one-way programs answered a similar number of items on the STAAR Reading Reporting Category 1. Delineated in Table 1 are the descriptive statistics for this analysis.

Table 1

Frequencies and Percentages of the STAAR Reading Reporting Category I (i.e., Student Understanding Across Genres) by Bilingual Education Program Status for All Three School Years

School Year and Bilingual Program Status	*n*	*M*	*SD*
2016-2017			
Transitional Early Exit	18,602	3.45	1.38
Transitional Late Exit	5,657	3.58	1.34
Dual Language Two-Way	3,843	3.69	1.36
Dual Language One-Way	18,792	3.60	1.33
2017-2018			
Transitional Early Exit	16,819	3.59	1.25
Transitional Late Exit	4,936	3.67	1.19
Dual Language Two-Way	3,634	3.76	1.24
Dual Language One-Way	13,368	3.64	1.22
2018-2019			
Transitional Early Exit	16,242	3.28	1.32
Transitional Late Exit	3,169	3.24	1.34
Dual Language Two-Way	4,356	3.58	1.35
Dual Language One-Way	11,479	3.26	1.34

Reading Reporting Category 2 (i.e., Understanding/Analysis of Literary Texts) Results Across All Three School Years

Regarding the 2016-2017 school year, a statistically significant difference was revealed on the STAAR Reading Reporting Category 2 by bilingual education program enrollment status, $F(3, 46890) = 46.01$, $p < .001$, partial $\eta^2 = .003$, a below small effect size. Scheffe' post hoc procedures revealed that Emergent Bilingual students enrolled in the Dual Language Two-Way program answered statistically significantly more items, on average, than were answered by Emergent Bilingual students who were enrolled in the Transitional Early Exit, Transitional Late Exit, or Dual Language One-Way programs. The fewest number of test items were answered correctly by Emergent Bilingual students in the early exit program. Emergent Bilingual students in the Late Exit and One Way programs answered a similar number of test items correctly. Table 2 contains the descriptive statistics for this analysis.

Concerning the 2017-2018 school year, a statistically significant difference was revealed on the STAAR Reading Reporting Category 2 by bilingual education program enrollment status, $F(3, 38753) = 96.85$, $p < .001$, partial $\eta^2 = .007$, a below small effect size. Scheffe' post hoc procedures revealed that Emergent Bilingual students enrolled in the Dual Language Two-Way program answered statistically significantly more items, on average, than were answered by Emergent Bilingual students who were enrolled in the Transitional Early Exit, Transitional Late Exit, or Dual Language One-Way programs. The fewest number of test items were answered correctly by Emergent Bilingual students in the early exit program. Emergent Bilingual students in the Late Exit and One Way programs answered a similar number of test items correctly. Table 2 contains the descriptive statistics for this analysis.

With respect to the 2018-2019 school year, a statistically significant difference was revealed on the STAAR Reading Reporting Category 2 by bilingual education program enrollment status, $F(3, 101634) = 71.51$, $p < .001$, partial $\eta^2 = .006$, a below small effect size. Scheffe' post hoc procedures revealed that Emergent Bilingual students enrolled in the Dual Language Two Way program answered statistically significantly more items, on average, than were answered by Emergent Bilingual students who were enrolled in the Transitional Early Exit, Transitional Late Exit, and Dual Language One-Way programs. Emergent Bilingual students in the early exit program answered statistically significantly fewer questions, on average, than their peers who were enrolled in the other three bilingual education program types. Table 2 contains the descriptive statistics for this analysis.

Table 2

Frequencies and Percentages of the STAAR Reading Reporting Category 2 (i.e., Understanding/Analysis of Literary Texts) by Bilingual Education Program Enrollment Status for All Three School Years

School Year and Bilingual Program Status	*n*	*M*	*SD*
2016-2017			
Transitional Early Exit	18,602	8.45	3.57
Transitional Late Exit	5,657	8.67	3.57
Dual Language Two-Way	3,843	9.18	3.73
Dual Language One-Way	18,792	8.63	3.57
2017-2018			
Transitional Early Exit	16,819	8.94	3.17
Transitional Late Exit	4,936	9.37	3.18

Dual Language Two-Way	3,634	9.67	3.35
Dual Language One-Way	13,368	9.48	3.25
2018-2019			
Transitional Early Exit	16,242	9.96	3.26
Transitional Late Exit	3,169	10.15	3.31
Dual Language Two-Way	4,356	10.79	3.46
Dual Language One-Way	11,479	10.17	3.36

Reading Reporting Category 3 (i.e., Understanding/Analysis of Informational Texts)

Results Across All Three School Years

Concerning the 2016-2017 school year, a statistically significant difference was revealed on the STAAR Reading Reporting Category 3 by bilingual education program enrollment status, $F(3, 46890) = 28.63$, $p < .001$, partial $\eta^2 = .002$, a below small effect size. Scheffe' post hoc procedures revealed that Emergent Bilingual students enrolled in the Dual Language Two-Way program answered statistically significantly more items, on average, than were answered by Emergent Bilingual students who were enrolled in the Transitional Early Exit, Transitional Late Exit, or Dual Language One-Way programs. The fewest number of test items answered correctly occurred for Emergent Bilingual students in the early exit program. Emergent Bilingual students in the Late Exit and One Way programs answered a similar number of test items correctly. Table 3 contains the descriptive statistics for this analysis.

With respect to the 2017-2018 school year, a statistically significant difference was revealed on the STAAR Reading Reporting Category 3 by bilingual education program enrollment status, $F(3, 38753) = 58.68$, $p < .001$, partial $\eta^2 = .005$, a below small effect size. Scheffe' post hoc procedures revealed that Emergent Bilingual students enrolled in the Dual

Language Two-Way program answered statistically significantly more items, on average, than were answered by Emergent Bilingual students who were enrolled in the Transitional Early Exit, Transitional Late Exit, or Dual Language One-Way programs. The fewest number of test items answered correctly occurred for Emergent Bilingual students in the early exit program. Emergent Bilingual students in the Late Exit and One Way programs answered a similar number of test items correctly. Table 3 contains the descriptive statistics for this analysis.

Regarding the 2018-2019 school year, a statistically significant difference was revealed on the STAAR Reading Reporting Category 3 by bilingual education program enrollment status, $F(3, 101634) = 49.86$, $p < .001$, partial $\eta^2 = .004$, a below small effect size. Scheffe' post hoc procedures revealed that Emergent Bilingual students enrolled in the Dual Language Two Way program answered statistically significantly more items, on average, than were answered by their peers who were enrolled in the Transitional Early Exit, Transitional Late Exit, or Dual Language One-Way programs. Emergent Bilingual students in the early exit, late exit, and one-way programs answered a similar number of items on the Reading Reporting Category 3.

Table 3

Frequencies and Percentages of the STAAR Reading Reporting Category 3 (i.e., Understanding/Analysis of Informational Texts) by Bilingual Program Status for All Three School Years

School Year and Bilingual Program Status	*n*	*M*	*SD*
2017-2018			
Transitional Early Exit	18,602	8.20	3.33
Transitional Late Exit	5,657	8.36	3.41
Dual Language Two-Way	3,843	8.76	3.56

Dual Language One-Way	18,792	8.28	3.46
2017-2018			
Transitional Early Exit	16,819	7.99	2.98
Transitional Late Exit	4,936	8.19	3.04
Dual Language Two-Way	3,634	8.69	3.26
Dual Language One-Way	13,368	8.26	3.12
2018-2019			
Transitional Early Exit	16,242	7.87	3.15
Transitional Late Exit	3,169	7.84	3.21
Dual Language Two-Way	4,356	8.47	3.34
Dual Language One-Way	11,479	7.80	3.26

Approaches Grade Level Standard Results for All Three School Years

With respect to the Approaches Grade Level standard for the 2016-2017 school year, the result was statistically significant, $\chi^2(3) = 71.33$, $p < .001$. The effect size for this finding, Cramer's V, was below small, .04 (Cohen, 1988). As revealed in Table 4, a higher percentage of Emergent Bilingual students who were enrolled in the Dual Language Two-Way program met the Approaches Grade Level standard than their peers who were enrolled in the other three program types. The Transitional Early Exit had the lowest percentage of Emergent Bilingual students, slightly more than 60%, who met the Approaches Grade Level standard.

Regarding the Approaches Grade Level standard for the 2017-2018 school year, the result was statistically significant, $\chi^2(3) = 168.40$, $p < .001$. The effect size for this finding, Cramer's V, was below small, .07 (Cohen, 1988). As revealed in Table 4, a higher percentage of

Emergent Bilingual students who were enrolled in the Dual Language Two-Way program met the Approaches Grade Level standard than their peers who were enrolled in the other three program types. The Transitional Early Exit had the lowest percentage of Emergent Bilingual students, less than 70%, who met the Approaches Grade Level standard.

With respect to the Approaches Grade Level standard for the 2018-2019 school year, the result was statistically significant, $\chi^2(3) = 96.55$, $p < .001$. The effect size for this finding, Cramer's V, was below small, .05 (Cohen, 1988). As presented in Table 4, a higher percentage of Emergent Bilingual students who were enrolled in the Dual Language Two-Way program met the Approaches Grade Level standard than their peers who were enrolled in the other three program types. The Transitional Early Exit had the lowest percentage of Emergent Bilingual students, less than 70%, who met the Approaches Grade Level standard.

Table 4

Frequencies and Percentages of the STAAR Reading Approaches Grade Level Standard by Bilingual Education Program Status for All Three School Years

School Year and Bilingual Education Program Status	Did Not Meet *n* and %age of Total	Met *n* and %age of Total
2016-2017		
Transitional Early Exit	7,096 (38.1%)	11,506 (61.9%)
Transitional Late Exit	2,004 (35.4%)	3,653 (64.6%)
Dual Language Two-Way	1,200 (31.2%)	2,643 (68.8%)
Dual Language One-Way	6,807 (36.2%)	11,985 (63.8%)
2017-2018		
Transitional Early Exit	5,256 (31.3%)	11,563 (68.7%)

Transitional Late Exit	1,304 (26.4%)	3,632 (73.6%)
Dual Language Two-Way	863 (23.7%)	2,771 (76.3%)
Dual Language One-Way	3,409 (25.5%)	9,959 (74.5%)
2018-2019		
Transitional Early Exit	4,927 (30.3%)	11,315 (69.7%)
Transitional Late Exit	856 (27.0%)	2,313 (73.0%)
Dual Language Two-Way	999 (22.9%)	3,357 (77.1%)
Dual Language One-Way	3,262 (28.4%)	8,217 (71.6%)

Meets Grade Level Standard Results for All Three School Years

Concerning the Meets Grade Level standard for the 2016-2017 school year, the result was statistically significant, $\chi^2(3) = 256.95$, $p < .001$. The effect size for this finding, Cramer's V, was below small, .07 (Cohen, 1988). As presented in Table 5, a higher percentage of Emergent Bilingual students who were enrolled in the Dual Language Two-Way program, more than two fifths, met the Meets Grade Level standard than their peers who were enrolled in the other three program types. The Transitional Early Exit had the lowest percentage of Emergent Bilingual students, just over a fourth, who met the Meets Grade Level standard.

Regarding the Meets Grade Level standard for the 2017-2018 school year, the result was statistically significant, $\chi^2(3) = 669.01$, $p < .001$. The effect size for this finding, Cramer's V, was small, .13 (Cohen, 1988). As delineated in Table 5, a higher percentage of Emergent Bilingual students who were enrolled in the Dual Language Two-Way program, more than two fifths, met the Meets Grade Level standard than their peers who were enrolled in the other three program types. The Transitional Early Exit had the lowest percentage of Emergent Bilingual students, just

over a fourth, who met the Meets Grade Level standard.

Regarding the Meets Grade Level standard for the 2018-2019 school year, the result was statistically significant, $\chi^2(3) = 403.28$, $p < .001$. The effect size for this finding, Cramer's V, was small, .11 (Cohen, 1988). A higher percentage of Emergent Bilingual students who were enrolled in the Dual Language Two-Way program, almost 50%, met the Meets Grade Level standard than their peers who were enrolled in the other three program types. The Transitional Early Exit had the lowest percentage of Emergent Bilingual students, less than a third, who met the Meets Grade Level standard. Table 5 contains the descriptive statistics for this analysis.

Table 5

Frequencies and Percentages of the STAAR Reading Meets Grade Level Standard by Bilingual Education Program Status for All Three School Years

School Year and Bilingual Education Program Status	Did Not Meet *n* and %age of Total	Met *n* and %age of Total
2016-2017		
Transitional Early Exit	13,158 (70.7%)	5,444 (29.3%)
Transitional Late Exit	3,761 (66.5%)	1,896 (33.5%)
Dual Language Two-Way	2,253 (58.6%)	1,590 (41.4%)
Dual Language One-Way	12,325 (65.6%)	6,467 (34.4%)
2017-2018		
Transitional Early Exit	12,328 (73.3%)	4,491 (26.7%)
Transitional Late Exit	3,162 (64.1%)	1,774 (35.9%)
Dual Language Two-Way	2,129 (58.6%)	1,505 (41.4%)
Dual Language One-Way	8,106 (60.6%)	5,262 (39.4%)

2018-2019		
Transitional Early Exit	11,008 (67.8%)	5,234 (32.2%)
Transitional Late Exit	1,954 (38.3%)	1,215 (38.3%)
Dual Language Two-Way	2,276 (52.2%)	2,080 (47.8%)
Dual Language One-Way	6,968 (60.7%)	4,511 (39.3%)

Masters Grade Level Standard Results for All Three School Years

Regarding the Masters Grade Level standard for the 2016-2017 school year, the result was statistically significant, $\chi^2(3) = 334.46$, $p < .001$. The effect size for this finding, Cramer's V, was below small, .08 (Cohen, 1988). A higher percentage of Emergent Bilingual students who were enrolled in the Dual Language Two-Way program met the Masters Grade Level standard, more than a fourth, than their peers who were enrolled in the other three program types. The Transitional Early Exit had the lowest percentage of Emergent Bilingual students, less than a fifth, who met the Masters Grade Level standard. Table 6 contains the descriptive statistics for this analysis.

With respect to the Masters Grade Level standard for the 2017-2018 school year, the result was statistically significant, $\chi^2(3) = 502.51$, $p < .001$. The effect size for this finding, Cramer's V, was small, .11 (Cohen, 1988). As delineated in Table 6, a higher percentage of Emergent Bilingual students who were enrolled in the Dual Language Two-Way program met the Masters Grade Level standard, almost a fourth, than their peers who were enrolled in the other three program types. The Transitional Early Exit had the lowest percentage of Emergent Bilingual students, slightly more than a tenth, who met the Masters Grade Level standard.

Concerning the Masters Grade Level standard for the 2018-2019 school year, the result

was statistically significant, $\chi^2(3) = 351.45$, $p < .001$. The effect size for this finding, Cramer's V, was small, .10 (Cohen, 1988). As presented in Table 6, a higher percentage of Emergent Bilingual students who were enrolled in the Dual Language Two-Way program met the Masters Grade Level standard, almost a third, than their peers who were enrolled in the other three program types. The Transitional Early Exit had the lowest percentage of Emergent Bilingual students, 16.8%, who met the Masters Grade Level standard.

Table 6

Frequencies and Percentages of the STAAR Reading Masters Grade Level Standard by Bilingual Education Program Status for All Three School Years

School Year and Bilingual Education Program Status	Did Not Meet *n* and %age of Total	Met *n* and %age of Total
2016-2017		
Transitional Early Exit	15,673 (84.3%)	2,929 (15.7%)
Transitional Late Exit	4,498 (79.5%)	1,159 (20.5%)
Dual Language Two-Way	2,813 (73.2%)	1,030 (26.8%)
Dual Language One-Way	14,819 (78.9%)	3,973 (21.1%)
2017-2018		
Transitional Early Exit	14,850 (88.3%)	1,969 (11.7%)
Transitional Late Exit	4,114 (83.3%)	822 (16.7%)
Dual Language Two-Way	2,792 (76.8%)	842 (23.2%)
Dual Language One-Way	10,734 (80.3%)	2,634 (19.7%)
2018-2019		
Transitional Early Exit	13,519 (83.2%)	2,723 (16.8%)

Transitional Late Exit	2,539 (80.1%)	630 (19.9%)
Dual Language Two-Way	3,081 (70.7%)	1,275 (29.3%)
Dual Language One-Way	9,033 (78.7%)	2,446 (21.3%)

Discussion

In this multiyear statewide study, we examined the degree to which differences were present in the three reading reporting categories (i.e., Category 1, Category 2, and Category 3) and three grade level performance measures (i.e., Approaches Grade Level, Meets Grade Level, and Masters Grade Level) as a function of bilingual education program type. Analyzed herein are data from the Texas Education Agency Public Education Information Management System for three consecutive years (i.e., 2016-2017, 2017-2018, and 2018-2019). Results from the eighteen analyses will be summarized at this time.

Concerning the Grade 3 STAAR Reading Reporting Category 1 (i.e., student understanding across genres), Emergent Bilingual students in the Dual Language Two-Way program answered more test items correctly than Emergent Bilingual students enrolled in the other bilingual program model types (i.e., Dual Language One-Way programs, Transitional Early Exit, Transitional Late Exit) in all three school years. For the 2016-2017 and 2017-2018 school years, Emergent Bilingual students in the Transitional Early Exit program answered the fewest number of test items correctly.

Regarding the Grade 3 STAAR Reading Reporting Category 2 (i.e., understanding/analysis of literary texts), a similar result trend was present for the Reading Reporting Category 1 wherein Emergent Bilingual students in Dual Language Two-Way outperformed Emergent Bilingual students enrolled in other bilingual education program types) for all three school years. Emergent Bilingual students in the Transitional Early Exit program

continued to perform the lowest.

Consequently, with respect to Grade 3 STAAR Reading Reporting Category 3 (i.e., understanding/analysis of informational texts), Emergent Bilingual students enrolled in the Dual Language Two-Way program answered statistically significantly more items than Emergent Bilingual students who were enrolled in the Transitional Early Exit, Transitional Late Exit, or Dual Language One-Way programs in all three school years. Similar findings from Grade 3 STAAR Reading Reporting Category 1 and Category 2 emerged from this analysis, whereby Emergent Bilingual students enrolled in the Transitional Early Exit program answered the fewest number of test items correctly than students enrolled in the other bilingual education programs.

Concerning the Approaches Grade Level standard, in all three school years, Emergent Bilingual students enrolled in Two-Way Dual Language programs outperformed Emergent Bilingual students enrolled in other bilingual education programs. Notably to readers is the gradual increase in the percentage number of Emergent Bilingual students meeting the Approaches Grade Level standard each school year.

With respect to Meets Grade Level standard, a similar trend was present where Emergent Bilingual students in Two-Way Dual Language programs had the highest percentage of meeting the standard compared to the three other bilingual education programs. An average of 41% of Emergent Bilingual students in the Dual Language Two-Way program met the Meets Grade Level standard in the s 2016-2017 and 2018-2019 school years and 48% in the 2018-2019 school year. On the contrary, an average of 30% of Emergent Bilingual students in the Transitional Early Exit program met the standard within the three school years examined, and this group of students continues to underperform compared to their peers.

Regarding the Masters Grade Level standard, the same trend was present whereby

Emergent Bilingual students enrolled in the Dual Language Two-Way program continued to perform the highest, and students enrolled in the Transitional Early Exit program performed the lowest among the comparative groups. Less than 30% of Emergent Bilingual students in the Dual Language Two-Way program and less than 20% in the Transitional Early Exit program met the Masters Grade Level standard.

Connections with the Existing Literature

Results in this study aligned with existing literature (Argueta et al., 2023; Martin & Slate, 2023; Resilla & Slate, 2022, 2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2023g; Schleeter & Slate, 2023; Villalobos & Slate, 2023), regarding the underperformance of Emergent Bilingual students in Texas state assessments, specifically the very low percentages of students meeting the Meets and Masters Grade Level standards. The results in this study were congruent with Trevino et al.'s (2014) findings and Baker's (1990) claim that Emergent Bilingual students in Dual Language Two-Way programs outperformed students in Transitional Early Exit, Transitional Late Exit, or Dual Language One-Way programs in all 18 analyses.

Connections to Theoretical Framework

The higher performance of students in Dual Language Two-Way Programs compared to the other bilingual education program models in this study supports the Culturally Responsive Education theory. The assertion of this theory whereby pedagogical and teaching practices in classrooms that foster students' active participation not only as learners but also as teachers, as well as providing them with opportunities to challenge existing socio-political inequities, increase these students' interest, motivation, confidence, and critical discourse. In a Two-Way Dual Language program, both Emergent Bilingual and non-Emergent Bilingual students are considered equal because both are regarded as second-language learners.

Implications for School Leadership

A clear need is present to examine what schools and districts adopt as their bilingual education program model and to disaggregate data further to determine if programming changes need to happen. Our study was limited to Grade 3 STAAR Reading assessment results. As such, readers should be aware that we are only seeing a glimpse and possibly only short-term effects of programming on student achievement. The long-term effects of bilingual education programming enrollment must be examined at the secondary level. Let's suppose schools and school districts continue to adopt their current bilingual education program model without considering its possible effects on Emergent Bilingual students' academic and linguistic growth and achievement. In that case, they may be setting up systemic issues that may be more difficult to address the longer they continue to ignore this reality. A call to action is needed for school district and educational leaders to evaluate their current adopted bilingual program.

District leaders need to advocate and explore options for adopting bilingual programs that will leverage the academic growth and achievement of Emergent Bilingual students. Although factors exist that affect these programming decisions, such as teacher certification, Emergent Bilingual student enrollment, and parent and community support, educational leaders should continue to conduct and to evaluation research investigations such as this one, to begin the work of either transitioning or expanding their current bilingual programs to the best option for their district. Consequently, school principals must also advocate for bilingual programs that are documented to be effective for the student demographics at their campus. Campus leaders can no longer be passive and wait for the district to make programming decisions for the campus. School leaders know their school programming needs better than anyone else in the community; thus, being proactive in seeking resources, staffing, and funding to make necessary bilingual

program changes and adoption should be a priority for these educational leaders.

Implications for Policy and Practice

The continued underperformance of Emergent Bilingual students in state-mandated assessments impels legislatures, educational leaders, education reformers, and educational researchers to address this issue. While Texas currently recognizes four bilingual education program types (i.e., Transitional Early Exit, Transitional Late Exit, Dual Language Two-Way, and Dual Language One-Way), more research studies are warranted regarding how each program affects student academic and linguistic performance. Although the results of this study were that Dual Language Two-Way programs resulted in students meeting the three Grade Level standards and achieving more understanding in all three Grade 3 Reading categories, the effect sizes of each of the eighteen analyses are below small. We may contend that exploring the possible effects of the different bilingual education programs may be a nil or futile effort. Still, the 10% average performance gap between the highest-performing group, Dual Language Two-Way, and the lowest-performing group, Transitional Early Exit, is a concern.

A clear need is present to examine what schools and districts adopt as their bilingual education program model and to disaggregate data further to determine if programming changes need to happen. This study is limited to Grade 3 Reading STAAR assessment results; as such, we are only seeing a glimpse and possibly only short-term effects of programming on students' achievement. The long-term effects of bilingual education programming enrollment must be examined at the secondary level. Suppose schools and school districts continue to adopt their current bilingual education program model without considering its possible effects on Emergent Bilingual students' academic and linguistic growth and achievement. In that case, they may be setting up systemic issues that may be more difficult to address the longer they continue to

ignore this reality.

Recommendations for Future Research

In this 3-year Texas statewide investigation, we examined the performance of Emergent Bilingual in Grade 3 Reading STAAR by their bilingual education program type. Several recommendations can be developed from this study. The first recommendation is to replicate this study using school years after the pandemic, given that the data analyzed were from the three school years before the Covid 19 pandemic. Extending this study to middle and high school grade levels is a second recommendation. Grade 3 is a grade level in Texas where students first take the state assessments. Thus, results from this study only reflect the short-term effects of enrollment by each bilingual education program type. Extending the study to middle and high school might provide insights into possible relationships between bilingual education programs and the long-term academic effects on Emergent Bilingual students. A third recommendation is to extend this study to other states. The generalizability of this study cannot be determined because we only focused on Texas data about Emergent Bilingual students. A final recommendation is to conduct the same analyses on mathematics college readiness, not reading college readiness.

Conclusion

In this study, we addressed the relationship between bilingual education program type and the reading performance of Grade 3 Emergent Bilingual students in Texas in the three school years before the COVID-19 pandemic (i.e., 2016-2017, 2017-2018, 2018-2019). In all 18 analyses, which included Grade 3 Reading Categories (i.e., Category 1, Category 2, Category 3) and Grade Level standards (i.e., Approaches Grade Level, Meets Grade Level, Masters Grade Level), Emergent Bilingual students in Dual Language Two-Way program outperformed all

other Emergent Bilingual students in the other Bilingual Education program types.

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