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Mathematics College Readiness Differences by the Language Status of Texas High School Students: A Multiyear, Statewide Investigation

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ABSTRACT

The extent to which Emergent Bilingual students and non-Emergent Bilingual students differed in their performance on the Texas state-mandated Algebra I End-of-Couse exam for the 2018-2019, 2020-2021, and 2021-2022 school years was examined. Specifically addressed was whether gaps were present between Emergent Bilingual students and non-Emergent Bilingual students in the pre-pandemic year and the first and second-post-pandemic years. In all three years, Emergent Bilingual students had statistically significantly lower Algebra I End-of-Course exam performance than non-Emergent Bilingual students. Both groups of students exhibited substantial learning loss between the pre-pandemic year and the two post-pandemic years in all three Grade Level standards. An interesting finding is that neither group, Emergent Bilingual students nor non-Emergent Bilingual students, has recovered from the learning lost during the pandemic.

Keywords: Algebra I End-of-Course exam; Approaches Grade Level standard; Emergent Bilingual students; non-Emergent Bilingual students; Masters Grade Level standard; Meets Grade Level standard

INTRODUCTION

According to the National Center for Education Statistics (2023), the percentage of Emergent Bilingual students, students who speak a primary language other than English and are learning English, enrolled in public

schools across the United States in the fall of 2010 was 9.2%, or about 4.5 million Emergent Bilingual students. Compared to the percentage of the fall of 2020, an increase of 1.1 percentage points occurred with 10.3% or about 5.0 million Emergent Bilingual students enrolled in public schools (National Center for Education Statistics, 2023). In 2025, Emergent Bilingual students are expected to make-up 25% of the nation's student enrollment in public schools, and by 2030, Emergent Bilingual students will make-up 40% of the nation's student enrollment in public schools (Santiago & Brown, 2004). Concerning the state of interest for this article, Texas, the Texas Education Agency reported an Emergent Bilingual student enrollment from prekindergarten to Grade 12 of 21.8%, or 1,185,511 students in the 2021-2022 school year (Texas Education Agency, 2022).

LITERATURE REVIEW

With respect to academic achievement, the National Assessment of Education Progress mathematics assessment is administered every two years to students in Grade 4 and Grade 8, and approximately every four years to students in Grade 12. The purpose of these assessments is to measure student knowledge and their ability to apply their knowledge in problem solving skills. Reported in the 2022 Nation's Report Card were alarming scores, a five-point decrease on the Grade 4 mathematics average scores and an eight-point decrease on the Grade 8 mathematics average scores compared to the 2019 Nation's Report Card.

Mathematics performance gaps have profound implications for students. Students with mathematics performance gaps do not perform on grade level. Consequently, their low performance can hinder them from enrolling in more advanced courses in high school that will prepare them for mathematics courses in postsecondary settings (Arizmendi et al., 2021; Paek, 2018; Townsend et al., 2012). Achievement in mathematics is related to being successful in high school as well as being successful in postsecondary settings (Paek, 2018). Established in the National Educational Longitudinal Study was that students who enrolled in advanced mathematics courses in high school were much more likely to go to college (U.S. Department of Education, 1997) than their peers who had not been enrolled in such courses. In addition, student enrollment in advanced mathematics courses in high school affects their completion of a 4-year degree (Adelman, 2006; Ma, 2001).

Performance gaps have been established to exist between Emergent Bilingual students and non-Emergent Bilingual students (Abedi et al., 2020; Abedi & Lord, 2001; Townsend et al., 2012). As documented by numerous researchers (e.g., Abedi & Ewers, 2013; Francis et al., 2006;

Pennock-Roman & Rivera, 2011), the assessment performance of Emergent Bilingual students remains substantially below the assessment performance of non-Emergent Bilingual students. In 2022, the National Assessment of Education Progress established that Emergent Bilingual students were far behind in mathematics compared to non-Emergent Bilingual students. Grade 4 Emergent Bilingual students performed 23 points lower than non-Emergent Bilingual students, and Grade 8 Emergent Bilingual students performed 36 points lower than non-Emergent Bilingual students. Emergent Bilingual students performed 41 points lower than non-Emergent Bilingual students on the Grade 12 Mathematics assessment (The Nation's Report Card, 2022a, 2022b).

Adding to the literature of high school Emergent Bilingual students, Villalobos (2021) conducted an investigation into the academic achievement of Emergent Bilingual boys and girls on three performance measures (i.e., Approaches Grade Level, Meets Grade Level, and Masters Grade Level) on the Texas high school mandated Algebra I End-of-Course exam. This investigation is relevant to this article because Villalobos (2021) documented that on the 2016-2017, 2017-2018, and 2018-2019 End-of-Course exams, a much higher percentage of Emergent Bilingual students did not pass the Algebra I End-of-Course exams compared to non-Emergent Bilingual students. Villalobos (2021) determined that on the Algebra I End-of-Course exam, higher percentages of Emergent Bilingual girls met all three grade level standards than did Emergent Bilingual boys.

Resilla (2017), in another Texas study, analyzed the reading and mathematics college-readiness of high school Emergent Bilingual students in Texas. Eight years of Texas statewide public school data were analyzed. She established that higher percentages of Emergent Bilingual boys were college ready in mathematics than were Emergent Bilingual girls. Moreover, higher percentages of Emergent Bilingual students who were not economically disadvantaged were college ready in mathematics than were Emergent Bilingual students who were economically disadvantaged. Higher percentages of Asian Emergent Bilingual students were college ready in mathematics than were White, Hispanic, and Black Emergent Bilingual students (Resilla, 2017). Two important findings by Resilla (2017) were that no White Emergent Bilingual student in Texas in her investigation was college ready in mathematics, and low percentages of Emergent Bilingual students were college ready in mathematics.

At the elementary school level, in a recent investigation, Argueta (2022) analyzed three school years of data and documented that 88.20% of Emergent Bilingual students in Grade 3 in Texas who were not economically disadvantaged met the Approaches Grade Level standard on the STAAR Mathematics test compared to 72.60 % of Emergent Bilingual students who were financially disadvantaged. Regarding ethnicity/race,

90.50% of Asian Emergent Bilingual students, followed by 77.60% Hispanic Emergent Bilingual students, 70.40% White Emergent Bilingual students, and 50.50% Black Emergent Bilingual students met the Approaches Grade Level standard on the STAAR Mathematics exam (Argueta, 2022). Lastly, similar percentages, around 75% of Emergent Bilingual boys and Emergent Bilingual girls met the Approaches Grade Level standard (Argueta, 2022). An important finding was that the lowest percentages of students who met the grade level standards were Hispanic Emergent Bilingual students and Black Emergent Bilingual students (Argueta, 2022).

The mathematics performance gaps of Emergent Bilingual students are evident on the Algebra I End-of-Course exams as their scores are 30%-40% lower than the scores of non-Emergent Bilingual students. Closing these achievement gaps is essential, not only because they are mandated by the Every Student Succeeds Act (2015), but because all students, including Emergent Bilingual students, must demonstrate they are college and career-ready, and passing the Algebra I End-of-Course exam is one way Emergent Bilingual students can demonstrate their readiness to enter the workforce or enroll in a postsecondary institution.

Given the substantial increase of the Emergent Bilingual student population in the United States (Abedi et al., 2004; IDRA, 2015), and specifically in Texas where one out of every five students is an Emergent Bilingual student (Texas Education Agency, 2023b), neither the United States nor the State of Texas can afford to ignore the poor academic performance of Emergent Bilingual students. Achievement gaps can result in an increase in high school dropouts (Fry, 2003; Menken, 2008) which have a negative societal influence because students who drop out of school are likely to live in poverty, be unemployed, or be incarcerated (Randel et al., 2008).

The literature reviewed in this article included studies conducted solely on pre-pandemic school years. No published studies could be located on post-pandemic years or on the effects the pandemic had on the education of Emergent Bilingual students in Texas. Two related articles were located. Torres and Slate (2025) examined the mathematics college-readiness of Emergent Bilingual students by their special education status pre- and post-pandemic and Laminack et al. (2025) addressed the reading college readiness of Emergent Bilingual students by their ethnicity/race in a pre- and post-pandemic analysis. In neither study, however, was the mathematics college-readiness of students compared by their language status.

Statement of the Problem

In this investigation, the performance of Emergent Bilingual students on the Texas state-mandated Algebra I End-of-Course exam was compared to the performance of non-Emergent Bilingual students. The Emergent Bilingual student population enrolled in public schools is experiencing rapid growth (Abedi et al., 2020; Arizmendi et al., 2021; Doabler et al. 2016), especially in the State of Texas. Of importance is that their academic performance is substantially lower than the performance of non-Emergent Bilingual students (Abedi et al., 2020). A mathematics achievement gap can hinder the advancement of Emergent Bilingual students to more advanced courses (Arizmendi et al., 2021), increases their probability of not completing high school (Chiado, 2012; Fong et al., 2014), and not enrolling and earning a bachelor's degree (Adelman, 2006). With the Emergent Bilingual student population in Texas increasing, not enrolling in a postsecondary setting and obtaining a degree may be harmful to the future economic growth of Texas.

Theoretical Framework

We based the framework of this multiyear investigation on the Situated Expectation-Value theory. Highlighted in the major premise of this study is the in-the-moment motivation that drives an individual's behavior (Nolen et al., 2015; Nolen, 2020). The Situated Expectation-Value theory is an extension of the classic expectancy-value models whereby adolescents' behavior directly correlates to their perceived ability toward tasks and how they value them (Eccles & Wigfield, 1995). Furthermore, the authors asserted that "people value those activities in which they excel" (p. 223). In addressing the academic performance of Emergent Bilingual students on the Algebra I End-of-Course exam, we surmised that the academic performance of Emergent Bilingual students, in comparison to the academic performance of their non-Emergent Bilingual peers, in this study will be similar to the results established in previous literature (Abedi & Ewers, 2013; Francis et al., 2006; Pennock-Roman & Rivera, 2011; Villalobos, 2021).

Purpose of the Study

The purpose of this study was to determine the extent to which Emergent Bilingual status was related to performance on the Texas state-mandated Algebra I End-of-Course exam. Specifically examined was the extent to which Emergent Bilingual students differed from non-Emergent Bilingual students in their performance on three Grade Level performance measures: Approaches Grade Level standard, Meets Grade Level standard, and Masters Grade Level standard. These three mathematics measures were addressed for three school years: 2018-2019, 2020-2021, and 2021-

2022. Through analyzing three school years of statewide data, the degree to which trends were present was determined.

Significance of the Study

This study was conducted to add to the existing research literature available on the extent to which differences existed present in the Algebra I End-of-Course exam Grade Level performance between Emergent Bilingual students and Non-Emergent Bilingual students. As of the time of this research study being conducted, no published articles could be located in which researchers had compared the performance of Emergent Bilingual students to the performance of non-Emergent Bilingual students on the Texas state-mandated Algebra I End-of-Course exam before and after the 2020 pandemic.

Research Questions

The following research questions were addressed in this investigation: (a) What is the difference between Emergent Bilingual students and non- Emergent Bilingual students in their performance at the Approaches Grade Level standard on the Algebra I End-of-Course exam?; (b) What is the difference between Emergent Bilingual students and non-Emergent Bilingual students in their performance at the Meets Grade Level Standard on the Algebra I End-of-Course exam?; (c) What is the difference between Emergent Bilingual students and non- Emergent Bilingual students in their performance at the Masters Grade Level Standard on the Algebra I End-of-Course exam?; and (d) What trend is present in the performance of Emergent Bilingual students and non-Emergent Bilingual students on the three Grade Level standards across the three school years of data analyzed?

RESEARCH METHOD

Research Design

A causal-comparative research design (Johnson & Christensen, 2020) was present in this multi-year analysis. In this study, the independent variable was Emergent Bilingual status (i.e., either identified as being an Emergent Bilingual student or not identified as an Emergent Bilingual student) in the State of Texas. Dependent variables were Emergent Bilingual student performance on the Algebra I End-of-Course exam (a) Approaches Grade Level standard, (b) Meets Grade Level standard, and (c) Masters Grade Level standard for the 2018-2019, 2020-2021, and 2021-2022 school years. The 2018-2019 school year was prior to the pandemic, and the 2020-2021 and 2021-2022 were the two school years following the pandemic. In the spring of 2020, students in Texas

were not required to take the state accountability assessments; therefore, the 2019-2020 school year was not included in this study due to the absence of data. In a causal-comparative research design, pre-existing data are analyzed. As such, cause-and-effect determinations are not possible (Johnson & Christensen, 2020).

Participants and Instrumentation

Participants in this study were Emergent Bilingual students and non-Emergent Bilingual students in Texas who took the Algebra I End-of-Course exam in the 2018-2019, 2020-2021, and 2021-2022 school years. In the 2018-2019 school year, data were available on a total of 283,908 students, of which 15.28% were Emergent Bilingual students. In the 2020-2021 school year, data were available for a total of 436,571 students, of which 17.45% were Emergent Bilingual students. In the last school year, 2021-2022, data were available for a total of 474,648 students, of which 20.99% were Emergent Bilingual students. As evidenced in Table 1, both the numbers and the percentages of Emergent Bilingual students increased over the three school years.

Table 1

Sample Sizes for Emergent Bilingual and Non-Emergent Bilingual Students by School Year

School Year	Emergent Bilingual *n* and %age of Total	Non-Emergent Bilingual *n* and %age of Total
2018-2019	(*n* = 43,372) 15.28%	(*n* = 240,536) 84.72%
2020-2021	(*n* = 76,165) 17.45%	(*n* = 360,406) 82.55%
2021-2022	(*n* = 99,625) 20.99%	(*n* = 375,023) 79.01%

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" (Texas Education Agency, 2023a, p. 2). The Algebra I End-of-Course exam is one of five Texas state-mandated exams that students must pass to graduate from high school.

Assessed by the Algebra I End-of-Course exam are three categories for performance. In the Approaches Grade Level Category, students are likely to succeed in the next grade or course; students at this Grade Level Category should receive targeted academic interventions

(Texas Education Agency, 2017). In the Meets Grade Level Category, students have a high probability to succeed in the next grade or course; students at this Grade Level Category should receive short-term, targeted interventions (Texas Education Agency, 2017). In the Masters Grade Level Category, students are expected to be successful in the next grade or course; students at this Grade Level Category should receive little to no academic interventions (Texas Education Agency, 2017).

The data that were analyzed herein were obtained from the Texas Education Agency Public Education Information Management System database for the Algebra I End-of-Course exam that was administered in the 2018-2019, 2020-2021, and 2021-2022 school years. A Public Information Request was submitted to the Texas Education Agency. Datasets were obtained for: (a) Grade Level (b) Algebra I End-of-Course Performance Level standard, and (c) Emergent Bilingual indicator. Upon receipt, the data were then imported into the Statistical Package for Social Sciences software program (SPSS) for analysis.

RESULTS

Data Analysis

To ascertain whether differences were present in the Algebra I End-of-Course exam performance (i.e., Did Not Meet, Met) at Approaches Grade Level standard, Meets Grade Level standard, and Masters Grade Level standard between Emergent Bilingual students and Non-Emergent Bilingual students, Pearson chi-square analyses were conducted. Pearson chi-square procedures are the most appropriate statistical procedure to use when the independent variable and dependent variables are dichotomous. Accordingly, chi-squares are the statistical procedure of choice when both variables are categorical (Slate, 2023). Prior to calculating Pearson chi-square procedures, its underlying assumptions were checked, and they were met.

Approaches Grade Level Analyses Across All Three School Years

For the first research question on whether differences were present on the Algebra I End-of-Course Approaches Grade Level standard for the 2018-2019 school year, the result was statistically significant, $\chi^2(1) = 2987.64$, $p < .001$. The effect size for this finding, Cramer's V, was small, .10 (Cohen, 1988). As revealed in Table 2, a statistically significantly higher percentage of non-Emergent Bilingual students, more than 12 percentage points, met the Algebra I End-of-Course exam Approaches Grade Level standard than did Emergent Bilingual students.

Table 2

Frequencies and Percentages of Algebra I End-of-Course Approaches Grade Level Performance Standard by Language Status for All Three School Years

School Year and Language Status	Did Not Meet *n* and %age of Total	Met *n* and %age of Total
2018-2019		
Emergent	(*n* = 14,894) 34.3%	(*n* = 28,478) 65.7%
Bilingual		
Non-Emergent	(*n* = 53,300) 22.2%	(*n* = 187,236) 77.8%
Bilingual		
2020-2021		
Emergent Bilingual	(*n* = 40,672) 53.4%	(*n* = 35,493) 46.6%
Non-Emergent	(*n* = 112,261)	(*n* = 248,145) 68.9%
Bilingual	31.1%	
2021-2022		
Emergent Bilingual	(*n* = 40,374) 40.5%	(*n* = 59,251) 59.5%
Non-Emergent	(*n* = 93,012)	(*n* = 282,011) 75.2%
Bilingual	24.8%	

With respect to 2020-2021 school year, the Pearson chi-square revealed the presence of a statistically significant difference, $\chi^2(1) = 13678.87$, $p < .001$, Cramer's V was small, .18 (Cohen, 1988). A delineated in Table 2, a statistically significantly higher percentage of non-Emergent Bilingual students, more than 22 percentage points higher, met the Algebra I End-of-Course exam Approaches Grade Level standard than did Emergent Bilingual students.

Concerning the 2021-2022 school year, a statistically significant difference was yielded, $\chi^2(1) = 9632.57$, $p < .001$, small effect size, Cramer's V = .14 (Cohen, 1988). A statistically significantly higher percentage of non-Emergent Bilingual students, more than 15 percentage points higher, met the Algebra I End-of-Course exam Approaches Grade Level standard than did Emergent Bilingual students. Descriptive statistics for this analysis are contained in Table 2. Depicted in Figure 1 are the results for the three school years for the Approaches Grade Level standard.

Meets Grade Level Analyses Across All Three School Years

Regarding the 2018-2019 school year for the Algebra I End-of-Course Meets Grade level standard, a statistically significant result was yielded, $\chi^2(1) = 6100.59$, $p < .001$, a small effect size, Cramer's V = .15 (Cohen, 1988). A statistically significantly higher percentage of non-Emergent Bilingual students, more than 20 percentage points higher, met the Algebra I End-of-Course Meets Grade Level standard than did

Emergent Bilingual students. Table 3 contains the descriptive statistics for this analysis.

Figure 1

Average Percentages of Emergent Bilingual and Non-Emergent Bilingual Students Who Met the Algebra I End-of-Course Approaches Grade Level Standard for All Three School Years

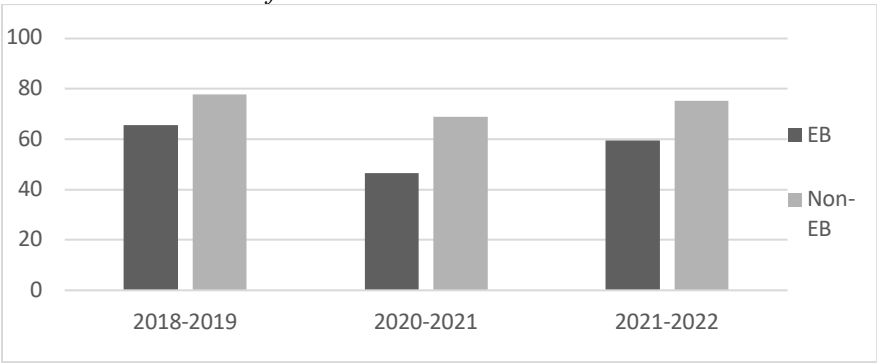


Table 3

Frequencies and Percentages of Algebra I End-of-Course Meets Grade Level Performance Standard by Language Status for All Three School Years

School Year and Language Status	Did Not Meet *n* and %age of Total	Met *n* and %age of Total
2018-2019		
Emergent Bilingual	(*n* = 27,101) 62.5%	(*n* = 16,271) 37.5%
Non-Emergent Bilingual	(*n* = 101,512) 42.2%	(*n* = 139,024) 57.8%
2020-2021		
Emergent Bilingual	(*n* = 62,582) 82.2%	(*n* = 13,583) 17.8%
Non-Emergent Bilingual	(*n* = 213,612) 59.3%	(*n* = 146,794) 40.7%
2021-2022		
Emergent Bilingual	(*n* = 70,344) 70.6%	(*n* = 29,281) 29.4%
Non-Emergent Bilingual	(*n* = 190,401) 50.8%	(*n* = 184,622) 49.2%

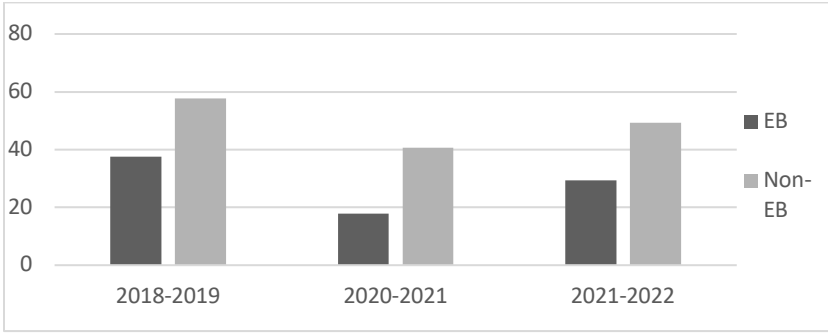
With respect to the 2020-2021 school year, the result was statistically significant, $\chi^2(1) = 14183.56$, $p < .001$, small effect size, Cramer's V = .18 (Cohen, 1988). A statistically significantly higher percentage of non-Emergent Bilingual students, more than 22 percentage

points higher, met the Algebra I End-of-Course Meets Grade Level standard than did Emergent Bilingual students. Delineated in Table 3 are the descriptive statistics for this analysis.

Concerning the 2021-2022 school year, a statistically significant difference was yielded, $\chi^2(1) = 12513.36$, $p < .001$, small effect size, Cramer's V = .16 (Cohen, 1988). A statistically significantly higher percentage of non-Emergent Bilingual students, more than 20 percentage points higher, met the Algebra I End-of-Course exam Meets Grade Level standard than did Emergent Bilingual students. Descriptive statistics for this analysis are revealed in Table 3. Shown in Figure 2 are the results for the three school years for the Meets Grade Level standard.

Figure 2

Average Percentages of Emergent Bilingual and Non-Emergent Bilingual Students Who Met the Algebra I End-of-Course Meets Grade Level Standard for All Three School Years



Masters Grade Level Analyses Across All Three School Years

For the third research question on Algebra I End-of-Course exam Masters Grade Level standard, the result was statistically significant, $\chi^2(1) = 6610.12$, $p < .001$. The effect size for this finding, Cramer's V, was small, .15 (Cohen, 1988). As presented in Table 4, a statistically significantly higher percentage of non-Emergent Bilingual students, more than 20 percentage points higher, met the Algebra I End-of-Course exam Meets Grade Level standard than did Emergent Bilingual students during the 2018-2019 school year.

Concerning the 2020-2021 school year, a statistically significant difference was yielded, $\chi^2(1) = 10020.96$, $p < .001$, small effect size, Cramer's V of .15 (Cohen, 1988). As revealed in Table 4, a statistically significantly higher percentage of non-Emergent Bilingual students, more than 16 percentage points higher, met the Algebra I End-of-Course exam Masters Grade Level standard than did Emergent Bilingual students.

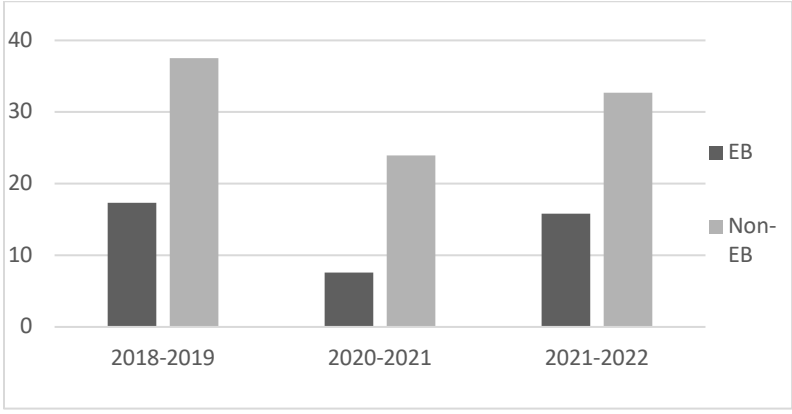
Table 4

Frequencies and Percentages of Algebra I End-of-Course Masters Grade Level Performance Standard by Language Status for All Three School Years

School Year and Language Status	Did Not Meet *n* and %age of Total	Met *n* and %age of Total
2018-2019		
Emergent	(*n* = 35,850) 82.7%	(*n* = 7,522) 17.3%
Bilingual		
Non-Emergent	(*n* = 150,352) 62.5%	(*n* = 90,184) 37.5%
Bilingual		
2020-2021		
Emergent Bilingual	(*n* = 70,386) 92.4%	(*n* = 5,779) 7.6%
Non-Emergent	(*n* = 274,442)	(*n* = 85,967) 23.9%
Bilingual	76.1%	
2021-2022		
Emergent Bilingual	(*n* = 83,931) 84.2%	(*n* = 15,694) 15.8%
Non-Emergent	(*n* = 252,507)	(*n* = 122,516) 32.7%
Bilingual	67.3%	

Figure 3

Average Percentages of Emergent Bilingual and Non-Emergent Bilingual Students Who Met the Algebra I End-of-Course Masters Grade Level Standard for All Three School Years



With respect to the 2021-2022 school year, a statistically significant difference was revealed, $\chi^2(1) = 10912.93$, $p < .001$, small effect size, Cramer's V= .15 (Cohen, 1988). A statistically significantly higher percentage of non-Emergent Bilingual students, more than 16

percentage points higher, met the Algebra I End-of-Course exam Masters Grade Level standard than did Emergent Bilingual students. Delineated in Table 4 are the descriptive statistics for this analysis. Illustrated in Figure 3 are the results for the three school years for the Masters Grade Level standard.

DISCUSSION AND CONCLUSIONS

In this Texas, statewide investigation, Algebra I End-of-Course Grade Level performance was investigated by student language status. Three Grade Level standards were addressed: Approaches Grade Level, Meets Grade Level, and Masters Grade Level. Statistically significant differences were revealed between non-Emergent Bilingual students and Emergent Bilingual students for all three Grade Level standards for all three school years. In the 2018-2019 school year, a pre-pandemic year, 34.3% of Emergent Bilingual students did not meet a Grade Level standard. In the 2020-2021 school year, one year after the pandemic, 53.4% of Emergent Bilingual students did not meet a Grade Level standard, and in the 2021-2022 school year, two years after the pandemic, 40.5% of Emergent Bilingual students did not meet a Grade Level standard. Non-Emergent Bilingual students outperformed Emergent Bilingual students in all instances.

The performance gaps between non-Emergent Bilingual students and Emergent Bilingual students increased from the pre-pandemic 2018-2019 school year to the first post-pandemic 2020-2021 school year in the Approaches Grade Level standard and the Meets Grade Level Standard. From the 2020-2021 school year to the 2021-2022 school year, both post-pandemic years, the gap decreased in the Approaches Grade Level standard and the Meets Grade Level Standard. In the Masters Grade Level standard, from the pre-pandemic 2018-2019 school year to the post-pandemic 2020-2021 school year the gap decreased, and from the first post-pandemic 2020-2021 school year to the second post-pandemic 2021-2022 school year, the gap remained the same.

Connections to Existing Literature

Considerable research studies (e.g., Abedi & Ewers, 2013; Argueta, 2022; Francis et al., 2006; Martin, 2022; Pennock-Roman & Rivera, 2011; Resilla, 2017) have been conducted about the educational gaps that exist between Emergent Bilingual students and non-Emergent Bilingual students. In this multiyear, statewide investigation, results were congruent with the results of previous researchers (e.g., Abedi & Ewers, 2013; Argueta, 2022; Francis et al., 2006; Martin, 2022; Pennock-Roman & Rivera, 2011; Resilla, 2017; Schleeter, 2017; Villalobos, 2021). As

evident in this statewide investigation, Emergent Bilingual students performed statistically significantly lower than non-Emergent Bilingual students in the three school years of data that were analyzed. The National Assessment of Education Progress also affirmed the academic losses of Emergent Bilingual students in the 2022 Nation's Report Card and in the Texas Report Card. Information provided herein adds to the existing literature on the mathematics college-readiness of Emergent Bilingual students.

Connections to Theoretical Framework

With respect to our theoretical framework, the results of this study further substantiate the premise of the Situated Expectation-Value theory (Nolen et al., 2015; Nolen, 2020). The low academic performance of our Emergent Bilingual students on the Algebra I End-of-Course exam compared to the academic performance of their non-Emergent Bilingual peers may be attributed to their perceived ability toward these state assessments based on their historical and sociocultural experiences. Our findings, both of pre- and post-pandemic data, were congruent with previously published results (Abedi & Ewers, 2013; Francis et al., 2006; Pennock-Roman & Rivera, 2011; Villalobos, 2021).

IMPLICATIONS

Several implications for policy and for practice can be made based upon the results of this multiyear, Texas statewide investigation. In regard to policy, as the number of Emergent Bilingual students in Texas continues to increase, policymakers are encouraged to continue funding and advocating for the academic achievement of Emergent Bilingual students in Texas. The Texas Education Agency should require all teachers who teach Emergent Bilingual students to hold an English as a Second Language certification, and not only English Language Arts teachers.

In terms of practice, school districts are encouraged to continue training their teachers on the incorporation of the English Language Proficiency Standards in every lesson and in every classroom to ensure every teacher is developing language by designing lessons that include reading, writing, listening, and speaking English in all classes. Educational leaders and school districts are encouraged to work with teacher preparation programs and universities to increase the number of secondary English as a Second Language certified teachers in the state. Lastly, a concerted effort should be made toward closing the achievement gap between Emergent Bilingual students and non-Emergent Bilingual students by providing language and Algebra I content interventions in the form of in-class small-group interventions and tutorials.

Implications for School Counselors

School counselors are vital to the success of students. School counselors are ethically responsible for supporting the underserved and at-risk populations. With the Emergent Bilingual population increasing yearly in the United States and especially in the State of Texas, it is imperative that school counselors attain the skills and knowledge necessary to meet the needs of this population. According to the findings in this article, Emergent Bilingual students perform statistically significantly lower than non-Emergent Bilingual students on the Algebra 1 End-of-Course exam. Emergent Bilingual students clearly need the assistance of school professionals such as school counselors in overcoming barriers that interfere with them being academically successful.

Strategies that school counselors can implement for the academic success of Emergent Bilingual students are proper placement, proper screening, and connection to outside resources. In K-12 schools, school counselors are responsible for scheduling students into their appropriate courses. For Emergent Bilingual students, courses with ESL certified teachers are imperative to their success. ESL certified teachers have specialized training to meet the individual needs of Emergent Bilingual students; professional preparation that can translate to improved academic performance for Emergent Bilingual students. Though school counselor do not typically perform screening for programs such as special education, school counselors often have a first-hand knowledge of student academic performance and can initiate further testing when academic concerns are present. Lastly, school counselors are the unique school personnel who often have connections for resources that can assist students and their families.

School counselors have the ability to be transformative. Transformational school counselors work to go beyond the traditional school counseling program and focus attention on underserved students such as students in poverty and Emergent Bilingual students. School counselors can emphasize issues, strategies, and interventions that will help close achievement gaps (Education Trust National Center for Transforming School Counseling, 2009).

Recommendations for Future Research

Based on the results of this investigation, several recommendations for future research can be made. First, data that were analyzed in this study were only from Texas students. As such, researchers are encouraged to extend this study to students in other states. Second, because only the Algebra I End-of-Course exam performance was

examined, researchers are recommended to replicate this study on the mathematics performance of Emergent Bilingual students in other grade levels. Third, because only Algebra I End-of-Course exam data were analyzed herein, researchers are encouraged to analyze data on the other four end-of-course exams required to fulfill high school graduation requirements in Texas: English I, Biology, English II, and United States History End-of-Course exams. The fourth recommendation is to replicate this study to three different school years so that a pandemic year is not in between the analyzed school year data. A fifth recommendation is to conduct a qualitative research study on the perceptions of administrators, counselors, teachers and Emergent Bilingual students regarding mathematics college-readiness. A final recommendation for future research is to replicate this study of Emergent Bilingual students by their ethnicity/race.

Conclusion

In this article, the extent to which differences were present between Emergent Bilingual students and non-Emergent Bilingual students in their performance on the Texas state-mandated Algebra I End-of-Course exam three Grade Level performance measures: Approaches Grade Level standard, Meets Grade Level standard, and Masters Grade Level standard during the 2018-2019, 2020-2021, and 2021-2022. Statistically significant differences were documented in the Algebra I End-of-Course exam performance of Emergent Bilingual students and non-Emergent Bilingual students. Non-Emergent Bilingual students outperformed Emergent Bilingual students in all Grade Level standards for all three school years that were analyzed. An interesting finding is that neither group, Emergent Bilingual students nor non-Emergent Bilingual students, has recovered from the learning lost during the pandemic. Both groups earned higher average percentage scores the year before the pandemic than the first and second post-pandemic years in all three Grade Level standards, with the first post-pandemic year having the lowest average percentage scores out of the three school years analyzed.

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