

Determining the effectiveness of bilingual programs on third grade state exam scores

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ABSTRACT

This ex-post-facto quasi-experimental research design was conducted by selecting a convenient sample of approximately 2,000 3rd grade ELLs who took the regular reading and math English STAAR test during the 2014-15 school year in an urban southern Texas school district. This study was conducted using a quantitative research method of data collected from the school district. The data collected consisted of 3rd grade ELL students' reading and math English STAAR scores. The researcher analyzed and compared the reading and math STAAR scores of 3rd grade ELL students enrolled in a transitional bilingual program, in a dual language two-way bilingual program and a regular program with immersion into all English instruction, utilizing two one way analysis of variance (ANOVAs). Approximately 2,000 3rd grade ELL students enrolled in this urban southern Texas school district. The researcher examined for differences among the scores of ELLs enrolled in the bilingual programs.

Conclusions to the findings determined that there were significant differences among the three educational programs for ELL students in third grade on the STAAR test results in the regular English math STAAR test for ELL students in third grade, but did not find significant differences in the test scores in the regular English reading STAAR test results.

Keywords: Education, Bilingual programs, Dual language, Early exit, Quantitative study, State Exams

INTRODUCTION

ELLs, or students who are English Language Learners, speak a language other than English in their homes; ELLs have existed in U.S. public school systems for many decades (Ramsey, 2009). As a result, bilingual education programs have been created and implemented by the federal and many state governments throughout the decades to meet the academic and linguistic demands of ELLs (Bunch, 2011). Roseberry-Mc-Kibbin, Brice and O'Hanlon (2005) explained, in the school year of 2000-2001, California had the largest enrollment of Limited English Proficiency (LEP) students at 1,511,646, while Texas had 570,022, followed by Florida with 254,517, New York with 239,097, Illinois with 140,528 and finally Arizona with 135,248. According to the National Center for Educational Statistics (2015), in 2011-12 the following were the number of ELL students enrolled in each mentioned state: California with 1,415,623, Texas with 722,043, Florida with 234,347, New York with 204,898, Illinois with 170,626 and Arizona with 70,527. These studies show, in eleven years, students enrolled in ELL programs have actually decreased slightly in California, Florida, New York and in Arizona, while increasing in Texas and Illinois.

In recent years, the influx of Spanish speaking families from Central America fleeing violence has increased, causing higher numbers of ELLs to enroll in U.S. public schools; in turn, this influx began causing public schools to redirect resources towards bilingual education programs (ASHA, 2015). The ASHA Leader (February, 2015) article stated that Miami-Dade County schools added approximately 2,000 students from El Salvador, Honduras and Guatemala to the 77,000 ELL students they already had enrolled within their school district.

In Texas, more specifically, the recent influx of Spanish speaking immigrants has been at high volumes. In the past 40 years, Texas grew from 11 to 26 million people, with the fastest growth belonging to Hispanics who now make up 38 percent of the state's total population (Block, 2014). Hispanics are estimated to become the largest single group in Texas by the year 2020 (Block, 2014). Many communities in Texas, previously not required to offer bilingual education, are now faced with the challenge of providing bilingual education programs for ELL students.

Currently, a problem exists in Texas elementary schools with educators struggling to meet the academic demands for the influx of ELL students who have little to no formal schooling in their home countries. Specifically, these ELL students are expected to pass the new and more academically rigorous state exam, the STAAR test, in 3rd through 5th grades (TEA, 2010). While the federal and state governments have attempted to fill the gap in ELLs' educational needs with current bilingual programs, ELLs continue to score lower than non-ELLs (all English) students on STAAR exams (TEA, *Texas Academic Performance Report 2013-14*, 2015). TEA (2015) publishes this performance report yearly, showing the STAAR exam results for every school and school district for different demographic groups. TEA's (2015) TAPR for the 2013-14 school year reported that 57% of ELLs met STAAR passing scores in all subjects, while 77% of all other demographic groups met passing scores in all subjects. So, according to the 2013-14 TAPR report, 20% fewer ELLs in the state met passing scores as compared to all other demographic groups in the state (TEA, 2015).

Elementary school administrators are faced with the challenge of implementing a bilingual education program in their school that yields the best scores on the STAAR tests in 3rd through 5th grades. Since the decision to promote or retain students is based on the reading and math STAAR exam scores in 5th grade, and because they are an indicator for academic success in

Texas (TEA, 2010), STAAR test results may be used to evaluate bilingual education programs. There are many possible factors contributing to why fewer ELLs meet state passing scores than non-ELLs. Among these factors could be dual language two-way programs that are known to be more effective than transitional bilingual education programs (Lindholm-Leary, 2005); yet not all schools offer dual language two-way programs for their students.

PURPOSE OF THE STUDY

The purpose of this study was to determine if there is a difference among ELL students who were enrolled in one of three programs; (1) a transitional bilingual program, (2) a dual language two-way immersion program or (3) a regular program with immersion into all-English instruction on the reading and math STAAR tests in 3rd grade. The independent variable was the type of program. The dependent variables were the regular English STAAR reading and math scores of the 3rd grade ELLs who took these tests in this southern Texas school district during the 2014-15 academic school year and who were enrolled in an early exit bilingual program, a dual language two-way immersion program, or were not enrolled in any bilingual program.

Once a student is labeled as an ELL, parents can choose a dual language two-way immersion program if the school offers this program. A parent of an ELL may also choose an early exit bilingual program, which is the most prevalent; or, parents may choose to deny any bilingual program offered by the school and have their ELLs immersed in the regular English school curriculum. Regardless of which program an ELL student is placed, they must take the STAAR exam in reading and in math in the 3rd grade. Knowledge gained from this study through data collection and analysis provided elementary school administrators and educators with an understanding of which elementary bilingual education programs are more effective in helping ELL students perform successfully on the STAAR test. The gathered information assisted with determining which education program school administrators or educators should implement in their schools. Findings in this study extended the existing body of knowledge surrounding the effectiveness of bilingual education programs in elementary schools.

RESEARCH QUESTIONS

This study was directed by the following research questions:

RQ1: Are there any differences among ELL students placed in a transitional bilingual program, a dual language two-way immersion program or a regular program with immersion into all-English instruction on the 3rd grade reading STAAR test in a school district in southern Texas?

RQ2: Are there any differences among ELL students placed in a transitional bilingual program, a dual language two-way immersion program or a regular program with immersion into all-English instruction on the 3rd grade math STAAR test in a school district in southern Texas?

H₁: There are significant differences among ELL students in a transitional bilingual program, a dual language two-way immersion program or a regular program with immersion into all-English instruction on the 3rd grade reading STAAR test in a school district in southern Texas.

- H₂: There are significant differences among ELL students in a transitional bilingual program, a dual language two-way immersion program or a regular program with immersion into all-English instruction on the 3rd grade math STAAR test in a school district in Texas.

RESEARCH DESIGN AND APPROACH

This study was conducted using quantitative research among ELL students in 3rd grade in an urban school district in southern Texas. In this study, the researcher sought to examine differences in 3rd grade students' STAAR scores in reading and math among ELL students who were in a transitional bilingual education program, in a dual language two-way immersion bilingual program or in a regular program with immersion into English-only instruction. The ANOVA assessed whether the means of the dependent variables, 3rd grade STAAR scores, were significantly different among the independent groups or types of instruction (Green & Salkind, 2011). The researcher used a quasi-experimental research design. A quasi-experimental design was utilized in cases when a researcher had to use a convenience sample or naturally formed groups, i.e. 3rd grade ELL students and not randomly assigned groups (Creswell, 2014). Third grade is the first year students in Texas public schools are mandated to take the STAAR. The scores in 3rd grade indicate the success of early elementary literacy programs. In this study, the researcher examined if differences in scores existed among the three strategies: a transitional bilingual program, a dual language two-way immersion program and a regular program with immersion into English-only instruction.

This was an ex-post-facto quasi-experimental research design with non-equivalent groups. A convenience sample of a naturally formed group was used in the study (Creswell, 2014). The researcher selected 3rd grade ELLs who took the regular reading and math English STAAR test during the 2014-15 school year.

POPULATION AND SAMPLE

The population for this study consisted of approximately 2,000 third-grade ELL students during the 2014-15 school year in an urban school district in southern Texas who were enrolled in a transitional bilingual program, a dual language two-way immersion program or in a regular program with immersion into English-only instruction. This sample was divided into the three instructional groups once the research study was conducted from the school district's 3rd grade ELL student population of approximately 2,000 students. All ELLs in 3rd grade who took the regular English reading and math STAAR test in the school district were part of the sample. According to TEA (2012), the school district in this study had approximately 40% ELLs, 75% economically disadvantaged (ED) students, 65% at risk (AR) students, and 98% were Hispanic (TEA, 2015).

TEA (2010) explained STAAR tests were designed by TEA and made to measure what students have learned in one school year after being taught the state mandated curriculum called the Texas Essential Knowledge and Skills (TEKS). Students in 3rd through 8th grades were tested in several subjects; however, this study concentrated on the 3rd grade state mandated STAAR exams of reading and math. Also, reading and math were assessed yearly in 3rd through 8th grades. According to public policy 89.1201-89.1269 (TEA, 2012) the following must be followed for student assessments:

Every student must be assessed by the STAAR based on grade level curriculum; ELLs participate in the STAAR assessment; however a Language Proficiency Assessment Committee (LPAC) decides if ELLs will be administered the test in English with or without accommodations, or in Spanish; a STAAR test with linguistic accommodations (STAAR L) is also available for ELLs in math, science and social studies in English, but the LPAC committee must decide if an ELL student will take this test; students who participate in special education must have an Admissions, Review and Dismissal (ARD) committee decide whether the special education student will take the STAAR test in any subject with a STAAR Accommodated (STAAR A) test with or without specific accommodations; students who participate in Section 504 of the Rehabilitation Act of 1973, which was established to protect students with disabilities against discrimination, must have a Section 504 committee decide if the student will take a regular STAAR test with or without accommodations, or a STAAR A test with or without accommodations.

According to the *STAAR Assessments Standard Setting Technical Report*, curriculum specialists in all subjects were hired by TEA in 2010 and 2011 to decide which TEKS curriculum in every grade level should be assessed yearly by the STAAR tests (TEA, 2015). Then, TEA set common readiness and performance standards for each grade level subject STAAR exam and then were vertically aligned by grade levels. Every student was assessed by these common readiness and performance standards. TEA (2010) explained how the first STAAR exams based on these methods were given to public education students.

This quantitative study used data provided by the school district in this study. The district's testing department provided the needed data for the research. The data needed to conduct the research was a list of 2014-15 third-grade ELL students identified by their local district identification number, the bilingual program they were enrolled in or not enrolled in if their parents have denied any bilingual program alongside their reading and math scores for the 2014-15 STAAR administration. Every school year, TEA provides the scores to every school district in Texas. Permission to conduct this research using this existing data was obtained from the Institutional Review Board (IRB) at Texas A&M University-Kingsville, as well as a research data agreement provided by the school district. Approval by the IRB committee ensured data collected by the researcher remained confidential. The research data agreement given by the school district also ensured data would be kept confidential and handled with veracity and integrity. The researcher also sought approval from the district's Superintendent. Once the researcher obtained the data from the school district, the data was inputted into a software program titled Statistical Package for the Social Sciences (SPSS), where the STAAR assessment scores were analyzed.

Two analysis of variance (ANOVAs) were conducted among three ELL student groups enrolled in two bilingual education programs, or in a regular program with immersion into English-only instruction in an urban south Texas school district. An ANOVA was used because more than two groups were being assessed and were compared on their average performance (Salkind, 2011). The researcher attempted to find if there was a significant difference among the three groups. Creswell (2014) defined a variable to be a characteristic of a group or a person that can be measured or observed. Creswell (2014) also explained these characteristics vary among each variable being tested in a study. Creswell (2014) defined dependent variables as outcomes that depend on the independent variables. The dependent variables were students' STAAR exam scores in reading and math. Creswell (2014) defined independent variables as variables that cause or affect an outcome. In this study, the independent variable was the type of instructional

program used. The researcher attempted to find the differences among three different instructional groups for 3rd grade ELL students in an urban south Texas school district on scores in math and reading STAAR.

All data was obtained from within the same school district. The school district's testing department had the 2014-15 STAAR scores provided by the state. In addition, the school district used an internal data program called IRIS, which coded each student's demographic information and the educational programs, i.e. bilingual programs, they were participating in every school year. This program defined the student as an ELL student and coded the bilingual program they were participating in, or not participating in because parents denied a program.

An ANOVA was conducted to examine data using students' interval scores in the 3rd grade reading and math STAAR. The ANOVA compared the variances of the test scores between the ELLs in each instructional group, and the scores were compared with one another (Salkind, 2011). According to Salkind (2011), "the variance due to difference in performance is separated into (a) variance that's due to differences between individuals within groups and (b) variance due to differences between groups. Then, the two types of variance are compared with one another" (pp. 234-236). Effect size (η^2) was used to measure the amount of variance in the scores that was due to the type of instructional program, or the measure of the size of the treatment (Salkind, 2011).

RESULTS

An analysis of variance (ANOVA) and descriptive statistics were analyzed using the Statistical Package for the Social Sciences (SPSS) software 22.0 for Windows and Mac for research questions 1 and 2. The researcher considered the results for the three different educational programs the transitional bilingual program, the dual language two-way immersion program, and the regular program with immersion into all-English instruction. An explanation of the reading STAAR scores of the third grade ELL students who took the regular English STAAR test in the school district will first be discussed. The descriptive statistics of the third grade ELL student participants in the 2014-15 regular English reading STAAR test can be found in Table 1. In addition, the descriptive statistics of the third grade ELL student participants in the 2014-15 regular English math STAAR test can be found in Table 2.

Data collected for this study were already in existence in urban, south Texas elementary schools. Data provided: 2,279 third grade ELL students located in a southern Texas school district took the regular English reading STAAR tests during the 2014-15 school year, as shown in Figure 1. From the 2,279 ELL students who took the regular STAAR reading test, 356 were enrolled in the dual language bilingual program, 1,606 were enrolled in the bilingual transitional program and only 27 were enrolled in the all-English immersion program. The total population was not normally distributed. There were more ELL students enrolled in the bilingual transitional program for both reading and math STAAR tests, followed by less students in the dual language bilingual program, and then even less ELL students were enrolled in the all-English immersion program. A random sample of ELL students was selected from each of the three programs in order to normalize the data collection. A total of 72 ELL students were studied in both reading and in math (i.e. 24 ELL students from each of three educational programs in both reading and in math).

The total number of third grade ELL students who took the regular English reading STAAR test in this study was 72 students. There were 41 (57%) female and 31 (43%) male

students who took the regular English reading STAAR test. Out of these 72 students, a total of 5 (7%) of the students were in the Section 504 program, 5 (7%) were in the special education program, and 2 (3%) of these students participated in the gifted and talented program. Of the total 72 ELL students who took the regular English reading STAAR test, 61 (85%) of the students were classified as low socioeconomic status. Out of the 72 total ELL students who took the regular English reading STAAR test in this study, 71 (99%) were classified as Hispanic; 72 (100%) were considered White. In addition, when an ELL student has attended this school district for more than three years, these students are considered ELL Plus students. In this study of third grade ELL students who took the regular English reading STAAR test in 2014-15, 63 (87.5%) of the ELL students were ELL Plus students.

Table 3 shows the overall descriptive statistics for reading. The total student sample consisted of 72 students across the three educational programs. The ELL students in the transitional bilingual education program had the lowest reading STAAR scores (21.67 ± 5.98), while the ELL students enrolled in the dual language bilingual education program held the second highest scores (24.17 ± 7.97), and finally the ELL students enrolled in the all-English immersion educational program showed the best results with (25.04 ± 5.94).

In the mathematics STAAR test for the 2014-15 school year in this southern Texas school district, a total of 2,284 took the regular English STAAR math test, as shown in Figure 2. From the 2,284 ELL students who took the regular math STAAR test, 359 were enrolled in the bilingual dual language program, 1,608 were enrolled in the transitional bilingual program, and 27 ELL students were in the all-English immersion program. A random sample of ELL students was selected from each of the three programs in order to normalize the data collection. A total of 72 ELL students were studied in both reading and in math (i.e. 24 ELL students from each of three educational programs in both reading and in math).

The total number of third grade ELL students who took the regular English math STAAR test in this study were 72 students. There were 32 (44%) female and 40 (56%) male students who took the regular English math STAAR test. Out of these 72 students, a total of 8 (11%) of the students were in the Section 504 program, a total of 3 (4%) were in the special education program, and 5 (7%) of these students participated in the gifted and talented program. Of the total 72 ELL students who took the regular English math STAAR test, 59 (82%) of the students were classified as low socioeconomic status. Out of the 72 total ELL students who took the regular English math STAAR test in this study, 71 (99%) were classified as both Hispanic and White. In this study of third grade ELL students who took the regular English math STAAR test in 2014-15, 63 (87.5%) of the ELL students were ELL Plus students. The descriptive statistics of the third grade ELL student participants in the 2014-15 regular Math STAAR test can be found in Table 4.

Inferential Statistics

Research Question 1

Question 1 examined the 3rd grade reading STAAR scores for ELL students asking if there were any differences among ELL students placed in a transitional bilingual program, a dual language two-way immersion program or a regular program with immersion into all-English instruction on the 3rd grade reading

STAAR test in a school district in southern Texas. There were no outliers, as assessed by boxplot; data was normally distributed for each group, as assessed by Shapiro-Wilk test ($p > .05$); there was homogeneity of variances, as assessed by Levene's test of homogeneity of variances ($p = .350$). Data was presented as mean \pm standard deviation. The differences between these three educational programs for ELL students were not statistically significant, $F(2, 69) = 1.641$, $p = .201$. There was a moderate effect size of $.05$ ($\eta^2 = .045$). The instructional program accounts for 5% of the variance in the reading STAAR test. The group means were not significantly different ($p > .05$); therefore, we fail to reject the null hypothesis. The summary of findings of the SPSS analysis is shown in Table 5.

Research Question 2

Research Question 2 examined if there were any differences among ELL students placed in a transitional bilingual program, a dual language two-way immersion program or a regular program with immersion into all-English instruction on the 3rd grade math STAAR test in a school district in southern Texas.

An ANOVA was conducted to determine if there was a significant difference in the STAAR math test scores among 72 third grade ELL students enrolled in three educational programs in a southern Texas school district. There were no outliers, as assessed by a boxplot; data was normally distributed for each group, as assessed by Shapiro-Wilk test ($p > .05$); there was homogeneity of variances, as assessed by Levene's test of homogeneity of variances ($p = .201$). The differences between these three educational programs for ELL students were statistically significant, $F(2, 69) = 4.40$, $p = .016$, $\eta^2 = .11$. The effect size was moderate and the educational programs accounted for 11% of the variance of the math STAAR test. The group means were significantly different ($p < .05$); therefore, the null hypothesis was rejected. The summary of findings of the SPSS analysis is shown in Table 6.

Since there was a significant difference, a post hoc analysis was done analyzing the multiple comparisons with the Tukey method. The dual language group (mean = 33.7, SD = 5.31) scored significantly higher than the all-English immersion group (mean = 28.4, SD = 6.79), $p = .03$. The dual language group (mean = 33.7, SD = 5.31) scored significantly higher than the transitional instructional group (mean = 28.7, SD = 8.34), $p = .04$.

Summary of Analysis

An ANOVA was conducted to determine if there was a significant difference in the STAAR reading test scores of third grade ELL students who took the regular English STAAR reading test and were enrolled in a transitional bilingual program, a dual language two-way immersion program or a regular program with immersion into all-English instruction in a school district in southern Texas. No significant differences were found among the three educational programs where the ELL students were enrolled. Although there were no significant differences, descriptive statistics found that the ELL students enrolled in the all-English immersion program had the highest mean followed by the dual language bilingual program. The transitional bilingual program had the lowest mean.

AnANOVA was also conducted to determine if there was a significant difference in the STAAR math test scores of ELL students who took the regular English STAAR math test and were enrolled in a transitional bilingual program, a dual language two-way bilingual program or an all-English immersion program. There was a significant difference among the three programs in the math STAAR test results. The ELL students enrolled in the dual language bilingual program scored significantly higher than both the transitional bilingual program and the all-English immersion program. Although the all-English immersion program had a slightly lower mean score than the transitional bilingual program, the ELL students in the all-English immersion program had a lower standard deviation than the transitional bilingual program.

CONCLUSIONS AND RECOMMENDATIONS

The amount of literature that currently exists surrounding educational programs for ELL students in the elementary level and their impact in the new STAAR test standards scores may be limited; however, with the growing numbers of ELL students in our schools in Texas as well as in other states, an analysis of which bilingual educational program, if any at all, has the best test results or scores in elementary school is important to study (Block, 2014). Elementary school is the foundation of knowledge; for ELL students, it is where the English language is first learned (Becker, Becker & Kim, 2014). Singh (2013) explained success in early reading for students equates success for them in higher grade levels. In addition, academic success in elementary is essential for the success of future life careers (Becker, Becker & Kim, 2014), because it is a value for ELL elementary students to learn the English language during the elementary years. The STAAR tests in Texas public schools are implemented as indicators of how much students have learned during that particular school year in different testing subjects. Therefore, elementary educators should work towards achieving the goal of having all of their students, and in this particular study ELL students pass the state mandated STAAR exams.

The results of this study provided information that may be utilized by various education professionals, such as teachers, campus administrators, district directors and superintendents. In addition, the results of this study may also be utilized by parents and students alike. In an effort to assist school and district leaders to implement the educational program that yields the best test result for the growing numbers of ELL students in elementary school, the study took into account the first STAAR testing grade. Third grade is the first year all students in public schools take state mandated tests. Third grade tests the foundational subjects of math and reading. After third grade, math and reading are tested in every grade level until the eighth grade. After eighth grade, students in high school will need to pass five core subject exams in order to graduate from high school. In these five core subject exams, there is one reading-based and one math-based exam to master. In addition, reading is embedded in every subject matter; mastering reading is instrumental to the academic success of all subjects in public schools, especially mastering reading comprehension (Becker, Becker & Kim, 2014). This study took into account both reading and math English STAAR test scores because these are the two subjects tested every school year, in elementary and beyond. This study contributes to the assistance of parents in making educated decisions for their ELL children in elementary school. Teachers, school administrators, district administrators and district superintendents are faced with the daunting task of educating all of their students, especially ELL students who speak a native language other than English and deciding on the program they will use. ELL students' expectations for learning

are the same as those for non-ELL students, so school educators must make decisions on how to best educate them to meet these same high demands.

Research findings from this study reported on the impact of bilingual educational programs on ELL students in third grade by measuring the English reading and math STAAR exam results. In addition, an all-English immersion program was also researched for this study. The results suggested no significant differences among the educational programs of the dual language bilingual program, the transitional bilingual program and the all-English immersion program for ELL students on their English STAAR reading results. However, the results for the English math STAAR test results of ELL students did find that the dual language bilingual program scored significantly higher than both the transitional bilingual and the all-English immersion program.

The following recommendations were made as a result of this study:

1. Since this study was conducted in an urban elementary school, a similar study in a rural elementary school may yield different results. Comparisons respective to the two geographical areas could then be analyzed for differences.
2. The samples of participants were limited to one school district in southern Texas. A study on how ELL students in other school districts perform in the third grade math and reading STAAR exams enrolled in one of the three different educational programs could be used to compare for significant differences in the same study.
3. Similarly, other educational programs in other school districts, such as the late exit transitional bilingual programs, can also be studied for their effects on the English reading and math STAAR results on ELL students in third grade to expand on this study.
4. A study should be considered that focuses on tracking the regular English STAAR scores of the reading and the math tests of the same ELL students in this study in grades 4 and 5 enrolled in the three educational programs. This may provide district leaders with additional research on how ELL students' STAAR scores in reading and math progress throughout their elementary years, before they enter middle school in 6th grade. A repeated measures one way ANOVA may be used to measure the scores in third, fourth and fifth grade of the same ELL students enrolled in the same educational programs.
5. A study should be considered that takes into account the different demographics of the students enrolled in each of the three educational programs: the dual language bilingual program, the transitional bilingual program and the all-English immersion program. This type of study is conducted in an effort to determine which demographic group best benefits from a particular educational program, using the STAAR test results as the measure of success. For example, an individual factorial ANOVA could be performed for any individual demographic group that the researcher wants to test by considering what effects these individual factors have on the regular English STAAR test results in reading and in math of ELL students in third grade enrolled in any of the three educational groups: the dual language bilingual program, the transitional bilingual program and the all-English immersion program. The different demographic criteria that can be measured are gender, Section 504, special education, gifted and talented, low or high socioeconomic status, the race/ethnicity, LEP Plus and retention. Breaking down the research to specific demographic would help the researcher find even more specific data to assist educators to plan for even more specific educational programs.

6. Additional information can be provided by teachers in relation to how much small group interventions or after school tutorials is provided to ELL students in their third grade classes in the three different educational programs in the form of a survey. This survey could add to the body of knowledge pertaining to ELL students and third grade regular English math and reading STAAR test scores.

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APPENDIX

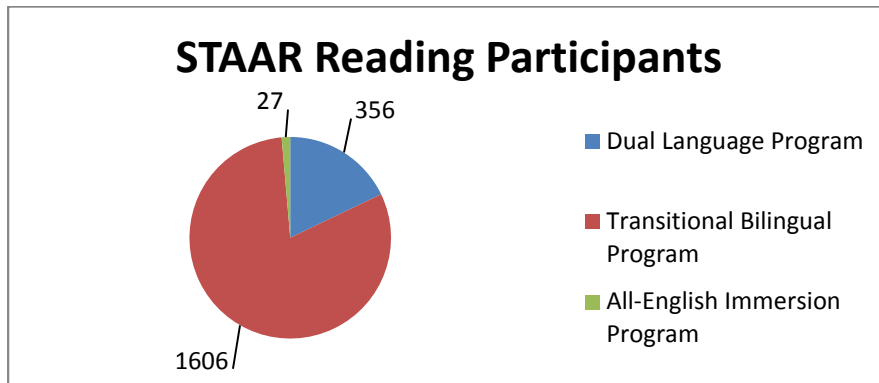


Figure 1 STAAR Reading Participants

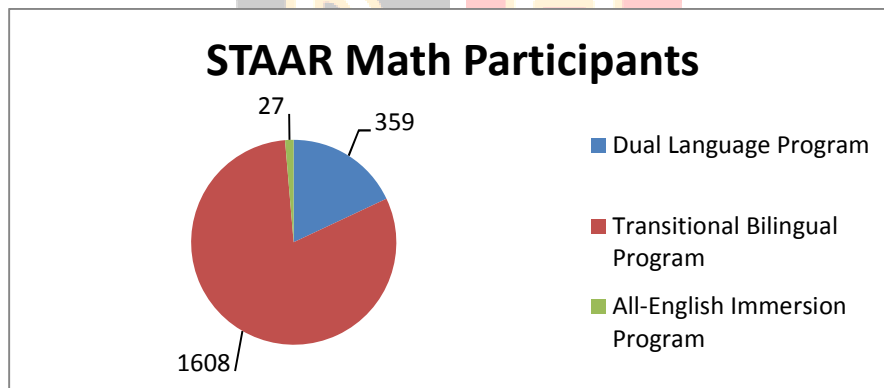


Figure 2 STAAR Math Participants

Table 1

ELL Student Demographic Data for Third Grade Reading STAAR Test (N=72)

Characteristic	Frequency	%
Gender		
Female	41	57%
Male	31	43%
Section 504		
Yes	5	7%
No	66	93%
Special Ed		

	Yes	5	7%
	No	67	93%
Gifted and Talented			
	Yes	2	3%
	No	70	97%
Low Socioeconomic Status			
	Yes	61	85%
	No	11	15%
Race			
	Hispanic	71	99%
	Non-Hispanic	1	1%
Ethnicity (Subgroup)			
	American Indian	0	0%
	Asian	0	0%
	African American	0	0%
	Pacific Islander	0	0%
	White	72	100%
ELL Plus (3+ years in US Schools starting in Kindergarten)			
	Yes	63	87.5%
	No	9	12.5%
Students that have been retained			
	Yes	9	12.5%
	No	63	87.5%

Table 2

ELL Student Demographic Data for Third Grade Math STAAR Test (N=72)

Characteristic	Frequency	%
Gender		
	Female	32 44%
	Male	40 56%
Section 504		
	Yes	8 11%
	No	64 89%
Special Education		
	Yes	3 4%
	No	69 96%
Gifted and Talented		
	Yes	5 7%
	No	67 93%

Low Socioeconomic Status			
	Yes	59	82%
	No	13	18%
Race			
	Hispanic	71	99%
	Non-Hispanic	1	1%
Ethnicity (Subgroup)			
	American Indian	1	1%
	Asian	0	0%
	African American	0	0%
	Pacific Islander	0	0%
	White	71	99%
ELL Plus (3+ years in US Schools starting in Kindergarten)			
	Yes	63	87.5%
	No	9	12.5%
Students that have been retained			
	Yes	5	7%
	No	67	93%

Table 3
Reading Descriptive Statistics

Group	Mean	SD
Dual Language Bilingual Program	24.17	7.971
Transitional Bilingual Program	21.67	5.983
All-English Immersion Program	25.04	5.938

Table 4
Math Descriptive Statistics

Group	Mean	SD
Dual Language Bilingual Program	33.67	5.31
Transitional Bilingual Program	28.71	8.34
All-English Immersion Program	28.38	6.79

Table 5
Summary of ANOVA Table for Reading STAAR Test

	Sum of Squares	df	Mean Square	F	P	Partial η^2
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Between Groups	147.25	7.97	73.63	1.64	0.201	0.045
Within Groups	3095.6	69	44.86			
Total	3242.9					

Table 6
Summary of ANOVA Table for Math STAAR Test

	Sum of Squares	df	Mean Square	F	P	Partial eta squared
Between Groups	421.58	2	210.8	4.4	0.016	0.113
Within Groups	3305.9	69	47.91			
Total	3727.5					

