

FORMER STUDENTS OF HISPANIC DESCENT  
FIRST IN THE FAMILY TO GRADUATE HIGH SCHOOL:  
WHAT DID IT TAKE TO ACHIEVE A HIGH SCHOOL DIPLOMA AND HAVE  
THEY TRANSITIONED TO COLLEGE?

A Record of Study

by

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## ABSTRACT

This Record of Study was conducted in an effort to explore the academic experiences of Hispanic students first-in-the-family to graduate high school. The goal was to identify who these students were and analyze student performance through the lens of academic achievements such as diploma plans, state assessment performance, and advanced course participation. Student data were collected from existing academic records and interview responses from select participants during the study. Data analyses presented both expected and unexpected outcomes. Graduates who earned Distinguished Achievement Program (DAP) diplomas and those who participated in advanced course studies, overall, performed better on state assessment exams than students who earned a minimum graduation plan diploma. Results from analysis of participant interviews expanded the picture of the first-in-the-family to graduate student experience outside of the extant student achievement data, with one unexpected discovery: Regardless of state test performance or advanced course participation, graduates felt significantly unprepared for the expectations they experienced in higher education.

## DEDICATION

Personal growth transpires when God places individuals in one's path. This Record of Study is dedicated to the supportive and inspirational members of my tribe.

My greatest gratitude is to God and my family. This study was achieved in your honor: to my mother who sacrificed so much to send the first woman in the family off to college and stood by me throughout my journey, to my father who has served children for over 52 years and has been an inspiring role-model, and to my brother and his family, especially my nephews, who FaceTimed me nightly to re-energize my focus. To my grandmother, Herlinda Constante Cano, the matriarch who was so proud of completing third grade, while no longer with us on this Earth, her oral history of our family taught me the power of our story.

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Lastly, I dedicate this study to my former students who invited me into their paths toward success after high school and persistently challenged me to be a better educator. Lastly, to the graduates I interviewed—your *ganas* inspires me.

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The data analyzed for Chapter III was provided to the researcher (doctoral student) and Professor Robert M. Capraro through the district that was the focus of the study. The analyses described in Chapter IV were performed by the researcher (doctoral student) and Professor Robert. M. Capraro.

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# CHAPTER I

## INTRODUCTION

High school graduation is a rite of passage for virtually every American young adult. As each school year comes to a close, every high school campus buzzes with excitement. Faculty and students count down the final days of a long, exhausting school year as if the real marathon run is about to begin outside the walls of the campus.

Amidst the excitement, a few students on each high school campus have something else to be especially enthusiastic about. Not only are they about to walk across the stage and receive their diplomas, but they are the first within their immediate families to do so. For these few students, earning a diploma is an exceptional accomplishment and is often juxtaposed with tremendous odds within their learning and personal experiences.

Not much is known about students who are the first in their families to graduate high school. If they share any of their personal experiences with someone, the students may choose an educator with whom they have developed a unique relationship. The mystery behind how and why these students achieve a goal that their family members did not, or could not, is rarely documented. Much like that of the high school dropout who often exits the school without the faculty's knowledge of the factors that contributed to the event, first-in-the-family graduates leave our high schools without formally sharing the components to their success.

## **Problem**

Within the Corpus Christi Independent School District (CCISD), poor academic performance persists across subgroups, but it is most predominant among students of Hispanic descent. Within that subgroup, students are burdened with poor state assessment performance, low-socioeconomic status (SES), and limited English proficiency, which are considered indicators for students who are at risk of not completing high school. District performance data reveal that students of Hispanic descent continue to be challenged by instructional expectations, whether that is to graduate high school or to participate in academically rigorous curricula that could prepare them for postsecondary success. Many of these students come from families with no high school graduates. While most American families feel, the greatest challenge is to earn a college degree, some of these at-risk Hispanic students perceive a high school diploma as out of reach.

The Texas Academic Excellence Indicator System (AEIS) report provides an evaluation of student achievement in each Texas public school district within a given year (Texas Education Agency, 2012). The data from the report include state test performance, advanced course participation, and graduation rates across student subpopulations based on race, ethnicity, and services provided by each district. The district AEIS data provided a basic picture of the differences in student achievement between White and Hispanic populations. Information in the 2011-2012 AEIS reports indicated the CCISD high school dropout rate for Hispanic students was 9% compared to White students' dropout rate of less than 5%. The same AEIS report revealed that 27%

of Hispanic students participated in advanced course studies (Advanced Placement and dual credit) compared to 45% of White students. Although Hispanic students made up 74.3% of the graduate population in 2011, only 17% of the total graduate population was White. The AEIS dropout and advanced course data indicated that local efforts to narrow the achievement gap between Hispanic and White students has not been successful.

Data regarding former CCISD students' academic performance after high school are non-existent. The challenge of gaining such information is due in part to the Family Educational Rights and Privacy Act (FERPA) standards that protect the confidentiality of high school graduate records, as well as postsecondary accomplishments (i.e., college enrollment, performance, and completion). In addition to the limitations that FERPA places on access to student data, the district has never developed a method to collect information from former students regarding their enrollment in higher education, how they performed in such endeavors, and if their high school academic experience helped the high school graduates prepare for postsecondary studies.

### **Purpose of the Study**

Part of the solution to CCISD's problem with Hispanic students struggling or failing to complete high school involves an examination of the exceptions, which are those Hispanic students who attained a high school diploma and possibly moved on to matriculate into higher education. Thompson (2006) explained that it is a misconception to view outliers in data as a negative occurrence because most people do reside at some level outside of the norm on some variables, especially when researchers are looking at

various forms of data that involve human subjects. Given that outliers are distant from the mean score in a given data set, they can offer unexplored information about the variables that are being investigated. For this study, the story resides within the outliers in the data. CCISD educators have reported hearing informal stories about Hispanic students who were first in their families to graduate high school, but what was lacking was any formal effort to seek out information regarding these students' success, and if that success led them into higher education.

The goal of this study was for the researcher to investigate the academic experiences of individuals who self-identified as Hispanic and were first in their families to graduate high school and how the academic achievement of these individuals impacted their preparedness for high school graduation and postsecondary matriculation. For this study, Hispanic former students who were first in their families to graduate high school were defined as Hispanic high school graduates (a) who had no immediate family members (parents or siblings) who had earned a high school diploma in the United States and (b) who had no knowledge of paternal or maternal grandparents graduating from a high school in the United States.

### **Population**

CCISD is the local school district from which the population in this study graduated. The district is located on the southeast coast of Texas, where over 62% of the general population identifies as Hispanic, and about one-third of the population is non-Hispanic or White (United States Department of Commerce, 2014). Approximately 200 Hispanic former students, ages 19 to 22, who were first in their families to graduate high

school between 2012 and 2014 were identified and contacted as potential study participants. The objective was to have a sample size large enough to produce a sampling distribution that was as narrow as possible in order to minimize error.

### **Research Method**

This Record of Study involves a mixed method design to investigate the experiences and practices of Hispanic former students who were first in their families to graduate high school. The variables of interest were obtained from extant data (i.e., course participation, grades, existing test scores, graduation plans, economically disadvantaged status, English language learner [ELL] identification, and at-risk identification) to provide a robust quantitative analysis. Semi-structured interviews of selected participants provided the qualitative data needed to develop a picture into the student high school and postsecondary experience.

### **Research Questions**

The following questions framed the design and conduct of the study:

1. Among participants (Hispanic first-in-the-family to graduate high school), what is the difference between those who graduated with a Distinguished Achievement Program (DAP) diploma with participation in high school advanced course studies (mathematics and/or English) and those who completed Minimum High School Program (MHSP) or Recommended High School Program (RHSP) diplomas?
2. Among participants, what is the difference between those who took high school advanced course studies (mathematics and/or English AP and Dual

Credit) and identified as English language learner (ELL, formerly identified as limited-English-proficient) and those participants who took the advanced course studies but were not ELL?

3. Among participants, what is the difference between the number of graduates who participated in advanced course studies in mathematics and/or English and identified as low SES and those who were not low SES and participated in advanced mathematics and/or English course studies?
4. Among participants, is there a correlation between participation in high school advanced course study in English language arts and meeting the Texas Success Initiative (TSI) reading standard for college readiness?
5. Among participants, is there a correlation between high school advanced course study in mathematics and meeting the Texas Success Initiative (TSI) mathematics standard for college readiness?
6. What factors do participants identify as having contributed to their academic success (being the first in their families to graduate high school)?
7. What factors do participants identify as having contributed to their (a) lack of transition into college or (b) successful transition into college?

### **Record of Study Significance**

The research questions for this Record of Study were developed to increase the local district's understanding of the academic achievement of Hispanic former students who were first in their families to graduate high school. Although there was no official account of this population's learning experiences in high school and subsequent higher

education, the literature collected and reviewed in preparation for this Record of Study provided data regarding the student experience of the high school dropout and the first in the family to enroll in college. The findings obtained from this study may help to identify strategies that will assist future at-risk Hispanic students to succeed in the local high school academic setting and become more academically prepared for postsecondary learning.

## CHAPTER II

### LITERATURE REVIEW

#### **Introduction**

A review of pertinent literature revealed how Hispanic students' high school experiences and their transition to college influenced their success in college. An investigation of the academic experiences of high school dropouts was necessary because the focus population came from families whose members failed to complete high school. Information regarding high school advanced course study participation and performance determined the patterns of Hispanic participation uncovered outside the local district. Factors such as language proficiency and socioeconomic status also arose throughout the literature inquiry. Previous research further provided a look at Hispanic students' attitudes toward academics as the college experience began.

#### **High School Dropouts**

By definition, Hispanics first in their families to graduate come from families where members have failed to complete high school. In order to understand the context of the first-in-the-family Hispanic student academic experience, the phenomenon of the high school dropout had to be understood.

Federal Common Core Data from 1970 to 2010 indicated that while the overall national graduation rate increased during the 20<sup>th</sup> century, Hispanic student graduation rates stagnated and have fallen since 2000 (Murnane, 2013). In Texas specifically, Intercultural Development Research (IDRA) data revealed that the dropout rate for



Hispanic students steadily increased since 1986 and also suggested that the numbers were actually higher, but simply not reported, because campus practices might have masked accurate dropout rates (Martinez & Martinez, 2002).

Hispanic students drop out of high school for both academic and non-academic reasons, such as placement in special education, English as a second language, grades, and a sense of not belonging to the school culture (Boone, 2011). Driscoll (1999) and the Center for Comprehensive School Reform (2008) connected test performance in Grade 8 to the increased chance of students struggling and dropping out in high school. Driscoll (1999) also determined that Hispanic male and female students did not differ in dropout rate, and when those students were identified as low income, the dropout rates increased significantly for both.

Students with disabilities were also more at risk of struggling to complete high school. Knesting (2008) found that students receiving special education services were most at-risk for dropping out. Gonzalez and Cramer (2013) specifically investigated students with disabilities and identified Hispanic struggling students with disabilities as more likely to drop out than African American students with disabilities.

Immigration status while in high school is another factor that placed students at risk for not completing high school. Murnane (2013) credited the increase in the immigrant population with the drop in Hispanic student high school completion. Immigrant students also reported being pushed into dropping out of high school and suggested that the pressure associated with school accountability ratings based on student academic performance is a contributing factor (Lukes, 2014). Bradley and

Renzulli (2011) supported Lukes' theory with their examination of Educational Longitudinal Study data of 2002, where they found that Hispanic students were more likely to be forced out of high school than students of other groups.

### **Advanced Course Studies**

Advanced Placement (AP) course participation was also identified as an indicator for whether or not a student was likely to drop out of high school (Soland, 2013). An examination of 16,081 student records in the *Education Longitudinal Study* of 2002 revealed that students not on an academically rigorous college track or course study in high school had a dropout rate of 76% compared to students on a college preparatory track, who had a dropout rate of 24% (Werblow, Urickc, & Duesbery, 2013).

Successful school programs that strategically include at-risk Hispanic students in advanced academic programs employed strategies for ensuring their success. The El Paso Independent School District (EPISD), a predominantly Hispanic and low-income district, evaluated its advanced academic program and developed an intervention plan that identified students who were low-performing in AP courses. The implementation of the intervention plan for such students supported their success with the given coursework (Cannon, 2011). The study's researcher noted an 8.6% increase in student participation in AP exams, with a 16.7% increase in Hispanic student AP participation, compared to a 6.8% increase in overall student population participation. This district's practice, however, was not considered the norm.

What was also evident in past research was the significantly lower participation rate of Hispanic students in advanced course studies. For example, Conger, Dylan,

Long, and Iatarola (2009) studied trends in Florida's advanced-course enrollment and concluded that low-income students were consistently less likely to participate in Advanced Placement or International Baccalaureate programs. An investigation of national advanced mathematics course participation showed that Hispanic students had the smallest participation rate compared to that of their White and African American counterparts (Riegle-Crumb & Grodsky, 2010). Similarly, a survey of 3,600 schools identified 41% of White students participated in advanced physics courses, while only 25% of Hispanic students attended the same classes (White & Tesfaye, 2011). If advanced course studies helped to foster high school success, Hispanic students were not taking advantage of this opportunity.

Advanced course participation also impacted students' perceptions of success in academics and in future careers. Shiu, Kettler, and Johnson (2009) investigated students' perceptions and the social effects of advanced course participation. The researchers attributed the increased self-confidence regarding academic achievement among Hispanic students to their completion of advanced coursework.

Although advanced course participation could impact students' perceptions, it was also the beliefs of campus staff that were critical to minority student recruitment into such studies. Werblow et al. (2013) acknowledged that tracking students into remedial versus college preparatory coursework impacted student high school dropout rates, and the decision to place students into remedial or college preparatory studies was controlled by campus personnel. School personnel's view of student potential were often affected by the services they received, such as with ELL students (Kanno &

Kangas, 2014). Walker (2007) credited faculty perception of minority students' potential to succeed in high school advanced math courses as an influencing factor to minority students' participation in such programs.

### **English Language Learners and Advanced Course Studies**

One method of distinguishing differences among Hispanic first-in-the-family graduates was identifying students as native English language speakers or as English language learners (ELLs). Lutz (2007) acknowledged lack of language proficiency as a significant barrier to student success, and this assertion was one reason why those students who were identified as ELLs in public education were also considered at-risk, as this specific population experienced a higher rate of challenges throughout high school. ELLs were present within this study's population of Hispanic first-in-the-family high school graduates, but CCISD has never conducted a formal investigation of the differences between ELLs' academic achievement, course participation, and/or transition into college to that of Hispanic students not identified as ELLs. Documentation of ELLs' academic achievement and course enrollment was needed to determine the contributing factors to the success of Hispanic future students.

ELLs and native English language speaking students experienced different instructional options in high school. Chavez-Reyes (2010) studied 31 multigenerational members of the same family and attributed later generation English monolingual students' lack of instructional and counseling guidance to the fact that because they had no language barriers, minimal attention was made toward their instructional needs. An investigation of ELLs' academic performance determined that they were less likely to

participate in advanced course work in high school compared to native English speakers, with ELLs 36% less likely to enroll in advanced mathematics course work (Callahan, Wilkinson, & Muller, 2010).

ELLs also received different guidance when determining their academic programs which resulted in ELL underrepresentation in advanced studies. Kanno and Kangas (2014) reported that school personnel admitted they often steered ELLs away from rigorous course work in an effort to protect them from academic stressors. Students corroborated that they were either not informed by personnel of such advanced course offerings, or they simply acquiesced to the recommendations to take less challenging course work in order to refrain from challenging authority. This observation also corresponded with Walker and Pearsall (2012) where ELLs were underrepresented in advanced course studies due to suggestions made by school personnel. The resulting underachievement and underrepresentation of Latino students in Advanced Placement course studies resulted in the students' sense of isolation, as they felt a lack of support in and out of school, as well as negative perceptions about their abilities to perform well in advanced coursework and their overall value as a minority.

### **Socioeconomic Status and Its Impact on Success**

In Corpus Christi, most of the low-socioeconomic students were of Hispanic descent. An investigation of the barriers to high school completion across Hispanic student populations, specifically that of Mexican Americans, revealed that family socioeconomic status was the primary influencing factor (Lutz, 2007). The University of South Florida (2000) determined Hispanic students who were eligible for free and

reduced lunches were more likely to drop out than their peers from higher income families. Similarly, Boden (2011) reported socioeconomic limitation was a substantial contributor to Hispanic high school graduates' inability to transition into college. Research on first generation college students established that while socioeconomic status alone did not significantly impact student persistence, when combined with other factors, low-socioeconomic status contributed to a likelihood of failure in college (Nunez & Carroll, 1998). As a result of such research, the current study investigated socioeconomic status as a compounding factor in academic achievement and preparedness for college.

### **Academic Preparedness**

Much of the existing literature addressed academic preparedness of first generation college students and was based primarily on college course academic performance data. Terenzini, Springer, Yaeger, Pascarella, and Nora (1996) determined that among college students, those who were first generation students regardless of race or ethnicity entered college with significantly lower reading, mathematics, and critical thinking skills. A study on Hispanic college student academic preparedness showed that the risk of students failing to persist in higher education was more prevalent than that of their non-Hispanic peers (Fimmen, Witthuhn, Riggins, & Carson, 1997). According to the researchers, Hispanic student populations in higher education during the mid-1990s had a significantly lower rate of degree completion within four years of college matriculation as compared to college graduates who were not of Hispanic origin. Throughout the 21<sup>st</sup> century, Hispanics have become the largest minority population

across the country, yet they have maintained the lowest college completion rate within the standard of four years and also have had the highest number of high school graduates not enrolling in college at all (Kim & Nunez, 2013).

National higher education data regarding participation in remedial courses of study was used in research to identify a relationship between remedial high school studies and college achievement. Stebleton and Soria (2012) studied 58,000 university students and documented weak academic skills in math and reading as reliable predictors of college academic struggles for first generation college students. The National Center for Statistics 1995-1996 data regarding remedial course participation in high school and college grade point averages indicated remedial course participation in high school negatively impacted grade point average and persistence in higher education (Warburton, Bugarin, & Nunez, 2001). Conversely, other research identified higher numbers of math and science advanced course work in high school as contributors to a stronger likelihood of earning a college degree (Warburton et al., 2001).

The literature also showed that Hispanic college student success differed between genders. Female Hispanic college students dropped out of higher education at a greater rate than their male counterparts, with 39% of non-completers being Hispanic females who did not persist in college (Pidcock, Fischer, & Munsch, 2001). A random sample of 201 students was determined and questionnaires were collected from 78 participants in order to determine the first year of college enrollment as the most critical time when Hispanic female college students were most at risk for dropping out due to multiple academic and social stressors.

The Record of Study also considered student perception regarding college preparedness. Reid and Moore (2008) discovered that first generation college students felt that because they had not taken academically challenging courses in high school, they were significantly unprepared for the rigor of college level courses. A study of Hispanic students' perceptions regarding preparedness for college revealed academic skills were not as highly valued by students as personal drive toward education goals, financial preparedness, and significant mentors who assisted in the path toward higher education (Boden, 2011).

Hispanic high school graduates also attributed their own lack of preparedness for college to a shortage of high school campus personnel dedicated to prepare them. Chávez-Reyes (2010) investigated Hispanic students who were not first generation American citizens, and these graduates reported they were often neglected academically by staff because it was assumed the students would perform better than first and second generation (in the country) Hispanics who possibly had more language and economic barriers. The study explained that the later generation students perceived their learning experiences as lacking in academic rigor and selected easier academic schedules in large part due to the limited support from school personnel.



## CHAPTER III

### METHODS

#### **Introduction**

This mixed method study involved an investigation of first-in-the-family Hispanic graduates' high school academic achievement and college readiness. Demographic and academic student data were utilized for the quantitative part of the investigation and student perception data were utilized for the qualitative component. Samplings, data collections, and data analyses were all performed in an effort to find the answers to the research questions composed for this study.

The rationale for selecting mixed methods for this study was to weave the strengths of both quantitative and qualitative methodologies in order to have a more comprehensive picture of the type of graduate in question. According to Thompson (2006), researchers should consider all possible variables when seeking to determine the design of a study and take into account the various types of information that may be discovered. The numerical data immediately available to the researcher provided the source for statistical exploration of student achievement. The extant data within the district offered only a limited scope; therefore, first person reflections of former students were collected in order to gain a more comprehensive understanding of first-in-the-family Hispanic graduates. The expressive data directly from student experiences provided unique personal insight.

## **Sampling**

The quantitative component of the Record of Study involved determining the sample population as the subject of inquiry. Participants were defined as first-in-the-family Hispanic graduates. This particular population was identified by high school campuses each year as part of an effort to pool potential recipients for local scholarships and a celebratory banquet specifically organized for first-in-the-family graduates. Because sample size was important in order to achieve sound statistical power, multiple cohorts of first-in-the-family graduates were used to establish a sound sample size (205 participants) for the quantitative component (Bickel, 2007). The list of first-in-the-family graduates was published by news media outlets and saved on campuses each year. The district provided lists were collected by the researcher and submitted as part of a data request to the district.

The next step of the quantitative design was to determine what type of variables would be investigated. With the research questions as the foundation for selecting what variables to explore, several demographic and academic measures were chosen to address high school academic achievement. Student demographic records such as last known permanent address, ethnicity, English language learner status and socioeconomic status were included in the data request to the district. Student academic achievement records including advanced course participation, TAKS performance, and type of diploma plan were also accessed through the data request to the district.

The study's quantitative sample size of 205 allowed for sound quantitative analysis of student academic achievement and determined whether or not there were

significant relationships between the variables mentioned in the research questions. Exit TAKS performance and advanced academic course participation by subgroup were organized in order to perform statistical analysis. In some instances where there were low advanced course participation rates among subgroups (independent variables), smaller sample sizes were used for the comparisons. English language proficiency and socioeconomic status were the two categories by which participants were organized when smaller sample sizes were used.

The extant data provided a picture of how the former students performed academically prior to high school graduation, but academic preparedness for college was also a factor investigated. In order to do that, Exit TAKS performance was organized by Texas Success Initiative (TSI) exemption standards. A TSI exemption based on Exit ELA and mathematics scale scores (2200) has been used by higher education as an indicator for college-level matriculation. The current Record of Study involved an investigation of first-in-the-family graduates and a comparison of those who did or did not meet the TSI standard in order to determine if they were academically prepared for college.

Once the researcher had access to the demographic and academic data, the variables were organized in a spreadsheet as preparation for the statistical analysis. Statistical analysis methods were then selected for the quantitative component of the study. Confidence intervals and *t*-tests were chosen, with Cohen's *d* for effect size as the additional method of evaluating data when applicable.

The goal of the qualitative component was to seek out first-in-the-family graduate first person perspectives that were unknown. Another sampling from the original extant data needed to be conducted for the interview component. Convenience sampling was employed due to the limitations in reaching potential participants successfully (Patton, 2015). The sample for the qualitative component required recruitment of potential interview participants. The researcher mailed out formal invitation letters based on the last known student addresses provided in the quantitative data request to the district. Invitations included information about the study and a form to complete and mail back to the researcher based on interest in participation or an indication of not wanting to participate. The 205 students identified for the quantitative data collection were mailed invitations. The goal was to receive responses from approximately 30 potential interviewees. Five graduates responded to the interview invitation indicating willingness to participate. The researcher analyzed the qualitative data developed from the five participants' semi-structured interview responses.

### **Data Collection**

Creswell (2007) described data mining as a data collection circle involving the gathering of data, recording and storing such information, and purposeful sampling. Because information mining for the current Record of Study included both extant and non-extant data, multiple types of data collections were necessary to help ensure more substantial details were uncovered. The extant data included former students' records from high school and involved former student high school demographic and academic performance records that could be gathered from student transcripts contained in the

district online student information system eSchoolplus. Both demographic and academic information were extracted from this online data warehouse. The non-extant data were the graduate perceptions regarding their high school experience and college experience, if applicable. Graduates' perceptions were collected through the process of semi-structured one-on-one interviews held in-person.

Demographic information included in the quantitative data collection involved the following identifiers: (a) Hispanic Ethnicity code (yes/no), (b) Limited English Proficient (LEP), and (c) Free and Reduced Lunch (low SES). These demographic identifiers were extracted from eSchoolplus and placed into an Excel spreadsheet and sent to the researcher from the district research request office via email. The researcher organized the spreadsheet by plausible comparison subgroups. The participants in the spreadsheet were organized by English proficiency and socioeconomic status (Free and Reduced Lunch code).

Academic performance records (transcripts) were also extracted from eSchoolplus, placed into the spreadsheet, and disseminated to the researcher by the district data request personnel. The academic records retrieved included students' diploma plans. Diploma plan types included Distinguished Achievement Program (DAP), Minimum High School Program (MHSP), and Recommended High School Program (RHSP). The main difference between DAP diploma plan graduates and MHSP/RHSP diploma plan graduates is the DAP requirement of earning four advanced measures in order to earn the most prestigious diploma. Advanced measures could include the earning of Advanced Placement course credit and at least a score of 3 on the

Advanced Placement exam and/or the earning of credit in dual credit course work. Exit TAKS scores data were also collected to determine if there was a difference in performance by diploma plan type. Students' participation in ELA and mathematics advanced course studies was another type of data collected. Advanced Placement and dual credit participations were examined by language proficiency and socioeconomic status to determine if there were differences in participation. TSI exemptions in mathematics and reading (English) were another form of data collected. Exit TAKS scale scores in mathematics and English that were extracted from district provided data spreadsheet and organized by TAKS scale score to determine who met the 2200 standard score for TSI exemption. Advanced course participation data was filtered by TSI exemption to determine the difference between TSI exempted advanced course participants and non-exempted participants. Advanced course participation by TSI exemption was examined because TSI exemption is considered an indicator of being prepared for the level of rigor in college courses.

The data stored in the local district's digital warehouses were related to demographics and academic performance while in high school, which were measures that could be quantitatively analyzed. The qualitative component of the study involved seeking out and collecting data that was not existing when the Record of Study commenced. Semi-structured interviews were the method of qualitative data collection. The concepts examined for the qualitative component emerged based on the responses to the interview questions. The interview questions were composed prior to the interview events and were based on the areas of investigation mentioned in the Record of Study's

research questions. The goal was to obtain an illustrated picture of the personal student experience that the quantitative information did not have.

The researcher used specific protocols for the interview sessions. The researcher made arrangements to meet in person and conduct the approximately 20-minute per person interviews. Each participant was asked the same questions. The order of the questions and the wording of the questions were kept to the organization of the script (Appendix B). The interviews were one-on-one format to ensure each participant felt comfortable enough to share the personal experiences with the researcher. With participant consent, the interview sessions were each recorded digitally in order to replay and transcribe content successfully. Student perceptions that were shared focused on variables that impacted their success and if they had transitioned successfully to college course studies.

After the interviews were completed, each participant's set of responses were transcribed and analyzed to identify patterns of responses. The identification of patterns and organization of similar responses allowed for the themes to emerge. Such process of organizing and taking meaning from interview responses is a form of open-coding process (Marshall & Rossman, 2011). The themes that arose based on the patterns of participant responses were shared as the outcomes of the qualitative component.

### **Data Analysis**

The current Record of Study involved using two forms of data. Extant data were used for the quantitative statistical analysis. Data collected from semi-structured interviews were used for the qualitative analysis.

## **Quantitative Data Analysis**

The quantitative analysis involved several steps. The use of the highly-recommended *t*-tests established the correlation between two variables when applicable (Coolidge, 2006). Independent *t*-tests calculated through the use of SPSS involved the two independent variables and the values for the participants within those variables and presenting the means of the two based on the dependent variable so the researcher could determine if there was a difference in the means. Once *t*-tests were performed, confidence intervals (CIs) were constructed with SPSS to best estimate how large the difference in the means was between variables. CIs served as the chief method of statistical analysis for this study because they were an effective method of inference when seeking to determine how sure (or how precise) one was about data produced within a given study (Capraro, 2005). Cohen's *d* was then calculated for effect size to determine the strength of the effect of the treatment or phenomenon that was being examined in each comparison scenario of two independent variables.

Experts in the practice of quantitative research have recommended the use of CIs as robust and reliable, if not the best method of statistical analysis when conducting research (Capraro, 2005; Capraro, 2004; Thompson, 2007). Researchers, therefore, have been urged to employ confidence intervals with quantitative research for a more precise determination of a study's results (Capraro, 2004). Current research has lacked substantive studies where confidence intervals were used. The researcher for the Record of Study, therefore, elected to utilize confidence intervals in an effort to effectively analyze the quantitative data collected. Confidence level of 95% was used for the CI



calculations. If a 95% confidence level was used across a population parameter, only 5 out of 100 chances would a particular value fall outside the confidence interval, hence the variation in confidence intervals indicated the precision of a particular study. Thompson (2007) acknowledged using the 95% confidence interval might result in occasional misinterpretation of results but maintained they provide a stronger certainty about the precision of the estimates within the results. In the case of this Record of Study, CIs were the most effective method of determining the variance between the means.

While CIs involve the probability of statistical significance, effect size gives the true measure of effect of a treatment or occurrence between two groups. Effect size is a quantitative measure used to determine strength of a given occurrence, event, or phenomenon. Effect sizes were used in this study because in education research, it has become a common practice to use such a standardized method of measurement. Use of effect sizes has enabled the education community to draw from data across multiple studies because it is a standardized form of measurement. Cohen's  $d$  is the most commonly used method of measuring effect size when the goal is to express a standardized mean difference. Cohen's  $d$  was therefore chosen as the method of measuring effect of a given set of variables. .

**Interpreting confidence intervals.** For the purpose of this study, a CI of 95% was used. If the process of sampling were to be repeated multiple times, a single estimate would have 95% certainty of containing the true mean value within a population. If a sampling was performed 100 times, 95 of those times the mean would

be within the parameter of means in the original sample. Confidence intervals are about risk and confidence. Given a particular sample size, one would want to determine with a level of confidence (probability) that the variation in sample size of another population would be within the same variance as the original sample population. When comparing CIs between two given populations in the study, the goal was to determine if there was a significant statistical difference between the intervals of each population ( $p < 0.01$ ). Bar graphs were used to display the CIs in order to determine if there was a statistical difference between the two intervals of a given sample population. The concept of inference by eye was the guideline for interpretation of the CI bar graphs (Cumming & Finch, 2005). The steps for interpreting the CIs was to first identify the means and error bars, develop a meaningful interpretation of the means, develop an interpretation of each interval, and to compare the two independent variables' means.

**Interpreting effect size.** When Cohen's  $d$  is calculated for effect size, the researcher must determine if the value of each effect size for each phenomenon examined makes a difference between two populations. If the difference in means for two populations can range between 0 and infinity, the understanding is that in general, the higher the score when measuring Cohen's  $d$ , the greater the effect (strength) between the difference in means of those two variables. In this study, possible correlations between the two variables were investigated (e.g., Exit English TAKS scores and English language proficiency), effect size best presented the measure of strength in correlation between the two. It could be possible that Cohen's  $d$ , for example, could reveal that those with English language proficiency scored higher on the Exit English

TAKS test than those students in the sample population that were not English language proficient with the phenomena of language proficiency having a strong effect on the TAKS performance. A large effect size would seem to indicate a strong effect of treatment, but this was not necessarily the case. The large effect size might not have equated with a strong effect on a given phenomenon or outcome. A low effect could have made a sound difference depending on the context of what was being examined. In this study, for example, a large effect size for scale scores might not have made a great difference in a population's performance if the value of points within the scale score was small and the means score for the population was representative of very low performance.

Cohen's  $d$  was calculated by taking the difference between the means and dividing by the pooled standard deviation. Once the value of the effect size was calculated, it was analyzed within the context of the type of value that was being examined. The values examined in the study were Exit TAKS scale scores and credits earned in advanced courses among various populations. The strength of the effect was determined based on the value of a given scale score or number of credits earned that would equate with a substantial difference between the two independent variables.

### **Qualitative Data Analysis**

The qualitative aspect of the current Record of Study sought to illuminate the picture of the personal student experience. Content analysis of the information collected from the interviews involved a series of steps. The steps included transcription, reading and re-reading of the transcribed text, coding of the text, identifying patterns of across

the participant responses, naming themes to the patterns across the responses, and developing a narrative to summarize the responses by theme as they corresponded to the research questions.

Analysis of the interview data began with the process of transcription. King and Horrocks (2010) recommended as much of a verbatim transcription as possible to ensure that the transcriber/researcher was not subjectively excluding information (a threat to quality and robustness of the transcription) and to develop an in-depth understanding of the participant's experience. The transcription process involved typing the responses verbatim into a spreadsheet which contained each research question as a heading and each individual participant response to each question transcribed below each heading.

A precursor to the determining of patterns across the data was the open coding, which involved the researcher examining interview responses carefully and repeatedly until recurring ideas or beliefs on the part of the participants emerged (Marshall & Rossman, 2011). The transcribed text was read and re-read multiple times in order for the researcher to become familiarized with the content of the responses. As multiple close readings of the transcriptions were performed, the highlighting and circling of potential significant text in relation to the research questions was conducted simultaneously.

As the highlights and notations were reviewed, a list of words or phrases was handwritten along the transcriptions. The words/phrases were an effort to identify common responses to which codes could be assigned. The notetaking was an effort to organize the responses by possible patterns that emerged across the five participants.

Saldaña (2009) described a code as a word or short phrase that is attributed to a specific piece of data, often verbal or visual observation. For the purpose of the current Record of Study, codes were limited to descriptions of the words or phrases verbalized by the participants.

After the transcription was reviewed multiple times and coded with words and phrases describing the responses, the researcher determined what counted as a pattern/theme (King & Horrocks, 2010). When there was a degree of repetition in the responses, emergent categories of possible themes were developed. The selection of a few variables in order to make distinctions across those variables was made (Glaser & Laudel, 2013). Rather than identify every underlying topic which was mentioned in the responses, the frequency of similar types of responses was the overarching goal when determining possible themes. The topics of the interview questions were limited in scope in order for the identification of similar responses and themes could be made.

Once themes were identified and named, the excerpts from each interview participant that corresponded to each theme were organized in narrative form. The objective was to provide a portrait of the student perceptions as a group under each overarching theme. The written report of the findings was organized by the themes that emerged across all participant responses.

## CHAPTER IV

### ANALYSIS AND RESULTS

#### **Introduction**

This chapter reports on the data analyses performed in order to ascertain answers to the research questions. In this Record of Study, the researcher sought information regarding CCISD's first-in-the-family Hispanic graduates' academic experiences and how their academic achievement impacted academic preparedness for high school graduation and postsecondary learning. The following questions guided this study:

1. Among participants (Hispanic first-in-the-family to graduate high school), what is the difference between those who graduated with a Distinguished Achievement Program (DAP) diploma with participation in high school advanced course studies (mathematics and/or English) and those who completed Minimum High School Program (MHSP) or Recommended High School Plan (RHSP) diplomas?
2. Among participants, what is the difference between those who took high school advanced course studies (mathematics and/or English AP and Dual Credit) and were identified as English language learner (ELL, formerly identified as limited-English-proficient) and those participants who were not ELL?
3. Among participants, what is the difference between the number of graduates who participated in advanced course studies in mathematics and/or English and identified as low socioeconomic status (SES) and those who were not low SES and participated in advanced mathematics and/or English course studies?

4. Among the participants, is there a correlation between participation in high school advanced course study in English language arts and meeting the Texas Success Initiative (TSI) reading standard for college readiness?
5. Among the participants, is there a correlation between high school advanced course study in mathematics and meeting the Texas Success Initiative (TSI) mathematics standard for college readiness?
6. What factors do participants identify as having contributed to their academic success (being the first in their families to graduate high school)?
7. What factors do participants identify as having contributed to their (a) lack of transition into college or (b) successful transition into college?

The data analyses involved both quantitative and descriptive statistical examinations of students' historical academic records and qualitative analysis of data collected from participants' interviews. The analysis of the research questions involving quantitative data used 95% confidence intervals to assess the variance and precision of the point estimates for the two proportions. Cohen's *d* was used to determine the effect sizes in order to provide an estimate of practical importance of the differences in the subgroups of Hispanic first-in-the-family graduates addressed in each research question. Independent *t*-tests determined if there was a significant difference between populations addressed in this Record of Study. The qualitative open-coding method used to analyze the semi-structured interviews identified patterns in the responses regarding students' perceptions about their high school academic experiences and preparedness for higher education.

## **Data Sources**

Two distinct sources of data were used in this Record of Study. The CCISD online student management system (eSchoolPlus) provided the quantitative data for the graduation cohorts between the years 2011 and 2014, and the one-on-one, semi-structured interviews conducted during the summer of 2016 provided qualitative data to illustrate the phenomenon of first-in-the-family to graduate high school. Demographic and academic performance of all 205 Hispanic first-in-the-family high school graduates and the qualitative perception data from five interview participants are presented in this chapter. Each quantitative and qualitative variable examined is detailed in this chapter, as well as the statistical methods utilized to determine relationships, correlations, and patterns across variables.

### **Demographics Across All Identified First-in-the-Family to Graduate High School**

By definition of the population studied, all students in the quantitative data file identified themselves as Hispanic and graduates of one of the seven high schools in CCISD. The number of females in the population was 127 and 78 were male. Demographic variables were socioeconomic status (Free and Reduced Lunch vs. non-qualified for Free and Reduced Lunch), English language proficiency (ELL vs. non-ELL), graduation plan [Minimum High School Program (MHSP)/Recommended High School Program (RHSP) vs. Distinguished Achievement Program (DAP)], Texas Success Initiative (TSI) Exit TAKS Exemption in mathematics/English, and advanced course credit participation in mathematics/English.



### **Quantitative Data: Academic Achievement by Diploma Plans**

The difference between those graduates who pursued Distinguished Achievement Plan (DAP) diploma plans and those who did not (MHSP/RHSP students) was addressed in the first research question. The factors of academic performance included Exit TAKS performance, Advanced Placement (AP) course participation, and dual credit course participation in English and mathematics. The data analysis involved quantitative descriptive statistics with the use of 95% confidence intervals to assess the variance and precision of the point estimates for the two proportions. The  $p$ -critical was set to .05 where a  $p$  value of less than .05 represented a statistically significant difference in performance. Confidence intervals were utilized to help provide a visual representation of the numerical data so that possible patterns across variables could be more readily interpreted. Effect sizes were calculated to provide a further estimation of the practical importance in the differences of the subgroup point estimates.

#### **Exit TAKS Performance by Diploma Plans**

The first research question was designed to determine if there was differential performance on Exit TAKS by diploma plan. A comparison of Exit TAKS performance between diploma plans was conducted using English language arts (ELA) and mathematics scores.

Confidence intervals were calculated in order to compare Exit TAKS ELA performance by diploma plan. The means of each group's TAKS performance was calculated, as well as the standard deviations from the means. The Cohen's  $d$  effect size was calculated by taking the difference between two means values and dividing it by the

pooled standard deviation of the total population. The Exit TAKS ELA scale score mean for Distinguished diploma plan graduates was 2346.58 and the Exit TAKS ELA scale score mean for Minimum/Recommended diploma plan graduates was 2235.83. The standard for passing Exit TAKS ELA was 2100 and the scale score standard for earning a commended performance was 2400. Neither diploma groups had a mean score that reached close to the commended rating. The standard deviation for Exit TAKS ELA for Distinguished diploma plan graduates was 106.52 and the standard deviation for Minimum/Recommended diploma plan graduates was 96.75. Effect size for Exit TAKS ELA by diploma plan was  $d=1.115$ . Figure 1 displays the confidence intervals.

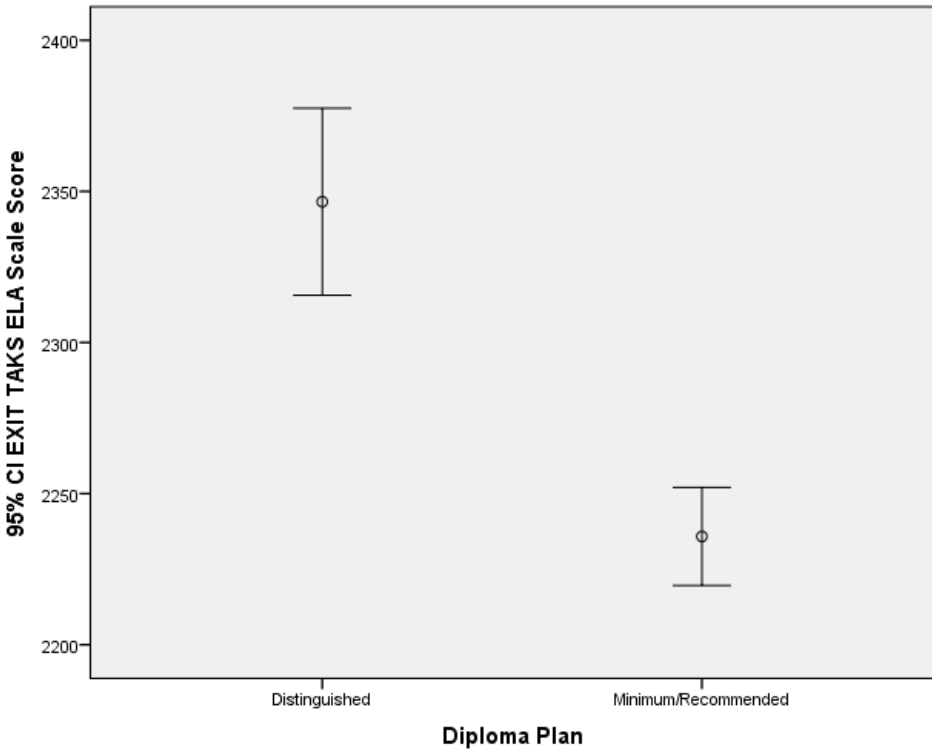


Figure 1. Exit TAKS ELA student performance by diploma plan.

CI in Figure 1 depicted the variance of mean scale scores for Distinguished and Minimum/Recommended diploma plans. The first step in the CI analysis was to identify what each mean and error bar represented. Scale score performance on Exit TAKS ELA was the dependent variable. The two independent variables were the types of diploma plans: Distinguished and Minimum/Recommended, represented by the two error bars. The mean of each diploma plan represented the average scale score on the Exit TAKS ELA. The midpoint (mean) for Distinguished diploma plans was 2346.58 scale score. The midpoint (mean) for the Minimum/Recommended diploma plans was 2235.93. The values along each error bar represent possible scale score means with the midpoint indicating the mean from the study's sample population for each diploma plan. The bar for Distinguished diplomas was longer than the bar presenting the potential means scale scores for Minimum/Recommended diplomas, which indicated more variance of potential means scale scores for the Distinguished diploma plan group because there were fewer Distinguished diploma graduates within this group. The mean scale score for Minimum/Recommended diploma plans was more precise (smaller error bar) because there were more scale scores under this particular diploma plan to determine the means score.

The next step in the CI analysis of Exit TAKS ELA performance by diploma plan was to determine what the means signified. In this case, the mean was the average score for each diploma type. The mean for Distinguished diploma plans was 2346.58, which was less than three exam questions short of reaching a high commended rating on the Exit TAKS. The Minimum/Recommended diploma plan mean was 2235.93, which

was approximately eight questions short of reaching the scale score for the commended level of performance. Based on both means, the researcher interpreted performance on the Exit TAKS ELA as high achieving for Distinguished diploma plan graduates and moderately achieving for Minimum/Recommended diploma plan graduates.

The subsequent step in the analysis of Exit TAKS ELA by diploma plan was to interpret the values that resided on each interval (error bar). In the case of Figure 1, the error bars represented the variance in potential Exit TAKS ELA scale scores per diploma plan. The fixed endpoints of each 95% CI indicate that if the study were replicated, the confidence interval would capture the mean 95% of the time. With 95% confidence one can expect scale score mean for Exit TAKS ELA performance by Distinguished diploma plan to reside between 2307 and 2375 and the scale score mean by Minimum/Recommended diploma plan to reside between 2213 and 2250 95% of the time if replicated. Any scale scores outside the error bar endpoints represented the scale scores likely to occur less than 5% of the time.

Based on the visual representation of the CIs, a comparison of the two independent variables (diploma plans) was made to compare difference in Exit TAKS ELA performance. The distance between the two intervals indicated how much difference there was between the two diploma plan groups' Exit TAKS ELA performance. If the error bars completely overlapped, it would indicate there was no difference in TAKS performance. With the 95% chance that the CIs in Figure 1 include the true mean of each diploma plan, .05 would not be included in each of the CIs. With  $p$  value being less than or equal to .05, an overlap of error bars by .50 with .25 of one

group's error bar and .25 of the other group's error bar having an overlap would be the threshold for determining if there is a statistically significant difference in performance between the groups. In the case of Exit TAKS ELA performance by diploma plan, there was a statistically significant difference. In Figure 1, the distribution of Exit TAKS ELA means scale score values for both Distinguished and Minimum/Recommended diploma plans not only do not overlap, but they are far apart from each other. This would indicate diploma plans did matter when it came to Exit TAKS ELA performance. If a student earned a Distinguished diploma plan, the greater the chance of having a higher score in Exit TAKS ELA.

Appearances can be deceiving, however. The use of CIs is not enough to make a solid conclusion about a population. This is why effect size (Cohen's  $d$ ) was calculated based on the means and standard deviations of both diploma plan groups' Exit TAKS ELA scores. Yes, the effect size was  $d=1.115$ , but given the passing score for Exit TAKS ELA is 2100 and the scale score needed to earn commended rating is 2400, even a large effect size would not impact either population enough to push them across the threshold of Exit TAKS ELA commended score rating. There is a significant difference between diploma plan groups' Exit TAKS ELA performance, but given that the highest diploma plan (Distinguished) had an average scale score of still less than the 2400 commended rating, it is important to note that the honor level diploma graduate, on average, still did not perform substantially well on the Exit TAKS ELA.

A comparison of Exit TAKS mathematics performance (scale scores) for both diploma plans were also investigated. The Exit TAKS mathematics scale score mean for

Distinguished diploma plan graduates was 2297.35, while the mean for Minimum/Recommended diploma plan graduates was 2195.87. The standard deviation for Distinguished diploma plan graduates was 129.83, while the standard deviation for Minimum/Recommended diploma plan graduates was 103.49. The effect size for Distinguished and Minimum/Recommended diploma plan graduates was  $d=.92$ . Figure 2 displays the confidence intervals.

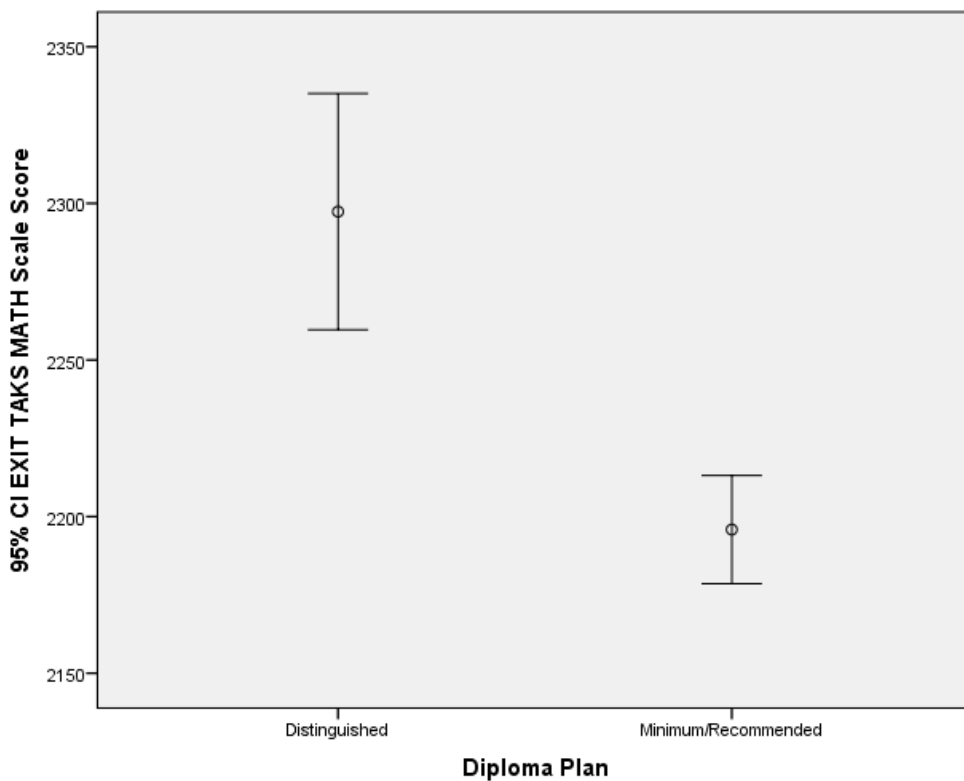


Figure 2. Exit TAKS mathematics student performance by diploma plan.

The CIs displayed in Figure 2 depicted the variance of mean scale scores on Exit TAKS math by diploma plan. Exit TAKS math scale score was the dependent variable. The means represented the scale score performance on Exit TAKS math by the

independent variables: Distinguished and Minimum/Recommended diploma plans represented by each error bar. The mean of each diploma plan represented the average scale score for Exit TAKS math. The midpoint (mean) for Distinguished diploma plans was 2297.35 scale score. The midpoint for Minimum/Recommended diploma plans was 2195.87. The bar for Distinguished diploma plan mean was longer than the bar presenting Minimum/Recommended diploma plan mean, which indicated less precise means (more variance) for Distinguished diploma plans. With the smaller error bar, Minimum/Recommended diploma plan mean involved more students in the group with a more precise outcome.

The means signified the average Exit TAKS math scale score by diploma plan. The mean for Distinguished diploma plan was 2297.35, which was five questions short of earning a commended performance level on the exam. The Minimum/Recommended diploma plan group mean was 2195.87, which was approximately nine questions better than the minimum standard for passing the exam and midway between minimum performance and the mean for Distinguished diploma plan. Based on both means, the researcher concluded Distinguished diploma plan graduates performing substantially better than Minimum/Recommended diploma plan graduates, with both diploma plans performing lower on Exit TAKS math than on Exit TAKS ELA.

The values that resided on each interval (error bar) in Figure 2 represented the variance in potential Exit TAKS math scale scores per diploma plan. The fixed endpoints of each 95% CI indicate that if the study were replicated, the confidence interval would capture the mean 95% of the time. With 95% confidence one can expect

scale score mean for Exit TAKS math performance by Distinguished plan to reside between 2264 and 2326 and the scale score mean by Minimum/Recommended diploma plan to reside between 2175 and 2211 95% of the time if replicated. Any scale scores outside the error bar endpoints represented the scale scores likely to occur less than 5% of the time.

A comparison of the two independent variables (diploma plans) was made to help determine if there was a difference in Exit TAKS math performance. The distance between the two intervals indicated there was a difference in performance. If the error bars completely overlapped, it would indicate there was no difference in TAKS performance. With the 95% chance that the CIs in Figure 2 included the true means of each diploma plan, .05 would not be included in each of the CIs. With  $p$  value being less than or equal to .05, an overlap of error bars by .50 or less determined if there was a statistically significant difference in performance. Figure 2 displays that there was a statistically significant difference. The variance of Exit TAKS mathematics mean scale scores did not overlap or reside near each other when both diploma plan groups' performances were presented in the bar graph. Distinguished diploma plan graduates, by far, performed better than their Minimum/Recommended diploma plan counterparts.

The effect size was again calculated to determine the weight or magnitude of the effect. The effect size of  $d=.92$  for Exit TAKS mathematics, while lower than the effect size for Exit TAKS ELA, was still large. The mean scale score for Distinguished diploma plan was 2297.35 while the mean scale score for Minimum/Recommended diploma plan was 2195.87. The mean scale score for Exit TAKS mathematics was



lower than the Exit TAKS ELA mean scale score for both Distinguished and Minimum/Recommended diploma plan graduates. Given that the scale score of 2400 represents a high commended rating, while there was a difference in performance between diploma plan groups in math, the math performance for both groups was still low, with the lower diploma plan graduates scoring an average scale score close to the minimum passing score of 2100. The effect was not strong.

### **Quantitative Data: Academic Achievement by English Language Proficiency**

The second research question was designed to examine the differential between those who took high school advanced course studies in English and mathematics and those who did not by English language proficiency (ELL and non-ELL students). The factors of academic achievement that were examined included Exit TAKS performance in English language arts and mathematics, AP course participation in English language arts and mathematics, and dual credit course participation in English language arts and mathematics. The difference in Exit TAKS performance between ELL and non-ELL was first determined. Advanced course participation between ELL and non-ELL students was then examined to determine if there was a statistically significant difference between both populations (ELL and non-ELL). The data analysis involved the use of confidence intervals (CIs). The effect sizes were also calculated to provide a further estimation of the practical importance in the differences of the subgroup point estimates. Because there was low participation in advanced coursework for the first-in-the-family population as a whole, sample populations investigated were substantially smaller in the

case of advanced course studies compared to the substantial sample size of 205 for Exit TAKS score analysis.

### **TAKS Performance and ELL and Non-ELL Students**

The objective of the second research question was to determine if there was differential in participation of advanced coursework between first-in-the-family Hispanic English language learners (ELL) and those first-in-the-family Hispanic students who were not ELL. Before the advanced course participation was examined, Exit TAKS performance in English language arts and mathematics for ELL and non-ELL were compared to determine if there was a difference in performance across the study's entire sample population.

Exit TAKS English language arts performance for ELLs and non-ELLs revealed a statistically significant difference with confidence intervals utilized to compare the variance of scores for each population. The Exit TAKS English language arts scale score mean for ELL students was 2196.00, while the Exit TAKS English language arts scale score mean for non-ELL students was 2275.78. The standard deviation for Exit TAKS English language arts for ELL students was 101.772, while the standard deviation for non-ELL students was 107.754. The means and standard deviations were used to determine the effect size, which was  $d=.063$ . Figure 3 presents the confidence intervals.

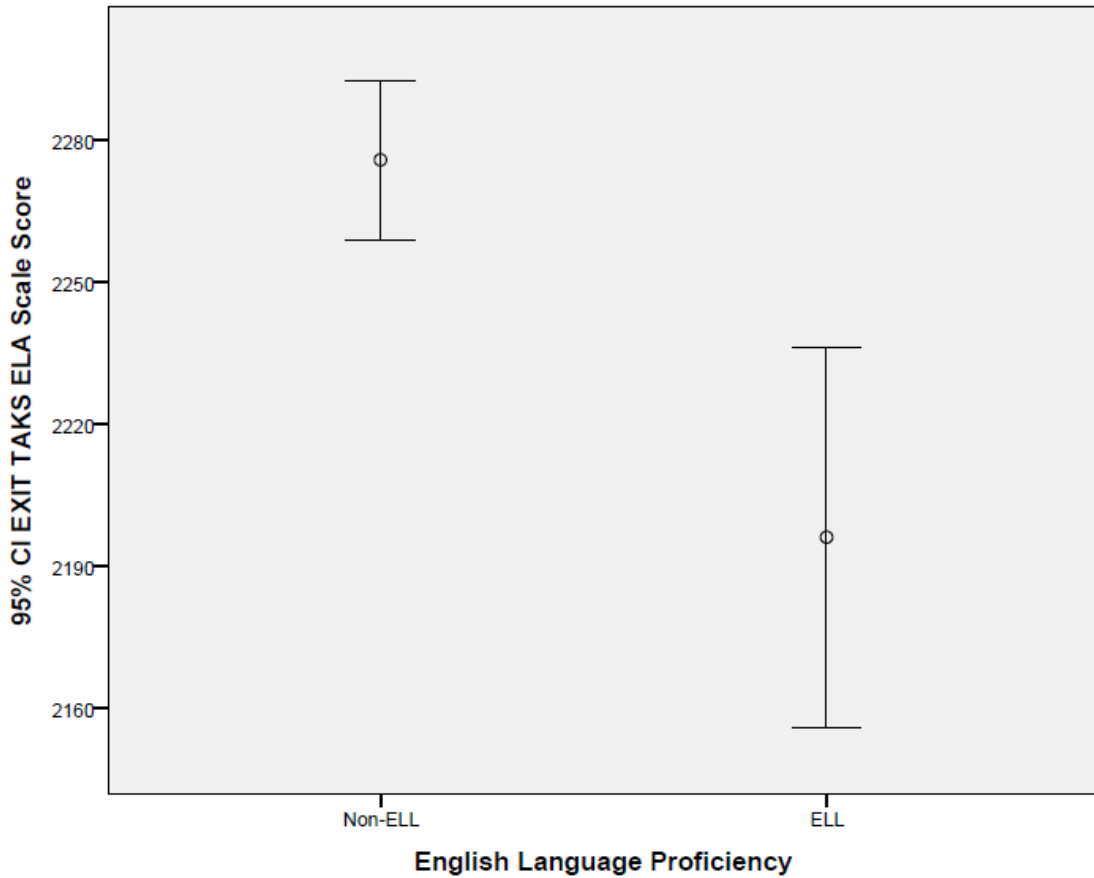


Figure 3. Exit TAKS ELA student performance by English language proficiency.

The CIs presented in Figure 3 show the variance of Exit TAKS English language arts (ELA) mean scale scores for ELL and non-ELL graduates. Scale score performance on Exit TAKS ELA was the dependent variable. The two independent variables were the student groups categorized by English language proficiency (ELL and non-ELL). Each error bar represented the variance of Exit TAKS ELA mean scale scores for each student population. The midpoint (mean) for ELL graduates was 2196.00 scale score. The midpoint (mean) for non-ELL graduates was 2275.78. The values along each error bar represented possible scale score mean with the midpoint indicating the mean from

the study's sample population for each group (ELL and non-ELL). The bar for ELL graduates was longer than the bar for non-ELL, indicating that the sample size for ELL was smaller than that of the non-ELL sample population. The mean scale score for ELL, therefore, was less precise than the mean scale score for non-ELL.

The mean for ELL and non-ELL populations represented the average scale score for each group on Exit TAKS ELA. The mean for ELL was 2196.00 and the mean for non-ELL was 2275.78. When the graduates were grouped by English language proficiency, Exit TAKS ELA mean performance for ELL leaned closer to the minimum scale score required to pass the exam (2100) than to the commended rating performance of 2400. Non-ELL scale score mean was closer to the commended level of performance but still approximately five questions short of reaching commended level. Based on both means, performance on Exit TAKS ELA was higher achieving for non-ELL graduates.

Figure 3 presented CIs with mean scale scores on Exit TAKS ELA by English language proficiency. Each error bar represented the variance in potential Exit TAKS ELA mean scale scores per group (ELL and non-ELL). The fixed endpoints of each 95% CI indicate that if the study were replicated, the confidence interval would capture the mean 95% of the time. With 95% confidence one can expect scale score mean for ELLs to reside approximately between 2155 and 2235 and scale score mean for non-ELLs to reside approximately between 2265 and 2295 95% of the time if replicated. Any scale scores outside the error bar endpoints represented the scale scores likely to occur less than 5% of the time. The fixed endpoints of each CI indicated the lowest and

highest possible mean scores. Scale scores outside the error bar endpoints represented the scale score means likely to occur less than 5% of the time.

A comparison of the two independent variables (ELL and non-ELL) was made to help determine if there was a difference in Exit TAKS ELA performance. The distance between the two intervals indicated how much difference there was between ELL and non-ELLs Exit TAKS ELA performance. A substantial overlap would have represented no statistically significant difference. In the case of ELLs and non-ELLs, there was no overlap and the bars were wide apart. With the 95% chance that the CIs in Figure 3 included the true mean of each student population, .05 would not be included in each of the CIs. With the  $p$  value being less than or equal to .05, an overlap of .50 (.25 from ELL error bar and .25 from non-ELL error bar) would represent the threshold for helping to determine if there was statistical significance. Because the CIs for ELL and non-ELL Exit TAKS ELA performance did not come near overlapping, the conclusion is that there was a substantial difference between the two groups. Non-ELL graduates performed substantially better than ELLs.

When Cohen's  $d$  was calculated for ELL and non-ELL by Exit TAKS English language arts performance,  $d=-.063$ . The effect size was small, which meant there was not much strength in the effect of English proficiency on Exit TAKS English language arts performance. While non-ELLs performed better on the exam, they did not perform much better within the context of the standard for exceling on the exam. Both groups performed well under the commended performance standard of 2400 and closer to the minimum standard for passing than the commended scale score. With the effect size of -

.063, it would take great improvement for either group to perform close to the commended level of performance on the exam. While there was a statistically significant difference in performance, comparison results within the context of minimum and commended standards indicated the effect of language proficiency was not substantial.

When Exit TAKS mathematics performance was compared by English language proficiency, there was no statistically significant difference between the means of ELL and non-ELL students. The scale score mean for ELL students was 2193.11, while scale score mean for non-ELL students was 2226.59. The standard deviation for ELL students was 103.234, while the standard deviation for non-ELL students was 121.087. The effect size for ELL and non-ELL graduates' Exit TAKS mathematics scores was  $d=.453$ . Figure 4 presents the confidence intervals.

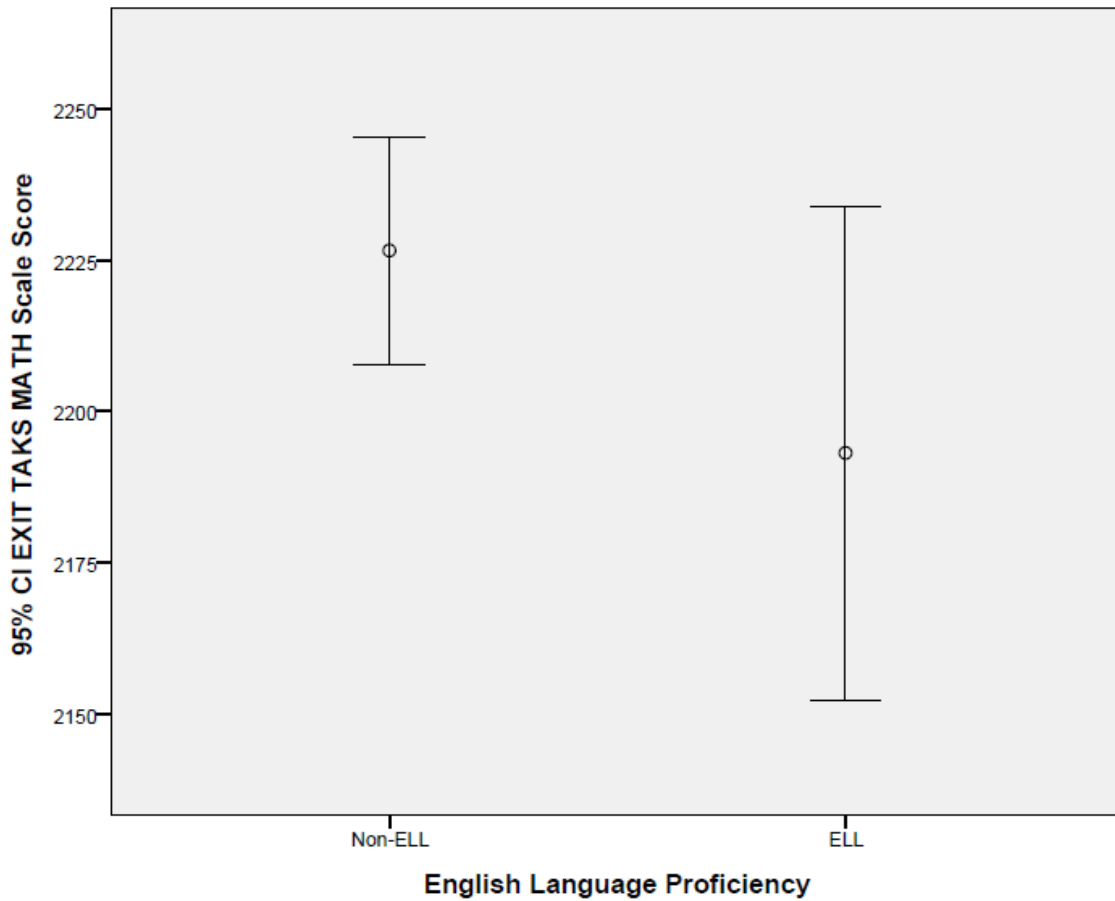


Figure 4. Exit TAKS mathematics student performance by English language proficiency.

Confidence intervals were used to help compare the difference in Exit TAKS mathematics performance by English language proficiency. The CIs presented in Figure 4 show the variance of Exit TAKS mathematics mean scale score by English language proficiency. Scale score performance on Exit TAKS mathematics was the dependent variable. The two independent variables were the two student groups categorized as ELL and non-ELL. Each error bar represented the variance of Exit TAKS ELA mean scale scores for each student population. The midpoint (mean) for ELLs was 2193.11,

while the midpoint (mean) for non-ELLs was 2226.59. Similar to the comparison of Exit TAKS ELA by English language proficiency, the bar for ELLs was longer than the bar for non-ELLs, indicating that the sample size for ELLs was smaller than non-ELL sample size. Because the sample size of the non-ELLs was larger, the scale score mean was more precise for that population.

The mean for ELLs and non-ELLs represented the average scale scores on Exit TAKS mathematics for each group. The mean for ELLs was 2193.11 and the mean for non-ELLs was 2226.59. Exit TAKS mathematics mean performance for ELLs was closer to minimum passing score (2100) than the non-ELL mean. The non-ELL mean score was slightly less than halfway between minimum and commended rating score. Based on both means, performance on Exit TAKS mathematics for both groups were low, with better performance for non-ELLs.

Figure 4 presented CIs with mean scale scores on Exit TAKS mathematics by English language proficiency. Each error bar represented the variance in potential mean scale scores per group (ELL and non-ELL). The fixed endpoints of each 95% CI indicate that if the study were replicated, the confidence interval would capture the mean 95% of the time. With 95% confidence one can expect scale score mean for Exit TAKS mathematics performance by ELL to reside between 2153 and 2230 and the scale score mean by non-ELL to reside between 2210 and 2245 95% of the time if replicated. Any scale scores outside the error bar endpoints represented the scale scores likely to occur less than 5% of the time.



Based on the visual representations of the CIs in Figure 4, a comparison of the Exit TAKS mathematics performance of the two independent variables (ELL and non-ELL) was made. The distance between the two intervals indicated the difference in performance. There was a distinct overlap between ELL and non-ELL error bars. With 95% chance, CIs in Figure 4 included the true means with .05 not included within the parameters of the intervals. Because the CIs overlapped, the  $p$  value being less than or equal to .05, the amount of overlap had to be determined before statistical significance was determined. There was an overlap of .50 with at least .25 from ELL error bar and .25 from the non-ELL error bar overlapping., therefore there was not a substantial difference in performance. Non-ELLs performed only slightly better on Exit TAKS mathematics than ELLs. The performance gap between the two populations narrowed compared the the Exit TAKS ELA performance. It is possible because the Exit TAKS mathematics exam consisted mostly of computational questions, ELL students were more likely to perform closer to the level of understanding that non-ELL student exhibited in their performance scores.

Cohen's  $d$  was used to determine effect size, which was  $d = .453$  for ELLs and non-ELLs. The strength of the effect size was low because the performance of the ELLs was not much lower than that of the non-ELLs. The difference between the means was not substantial. There was no statistically significant difference. Both mean scores for each group of graduates were much lower than the TAKS standard for commended performance (2400). Non-ELL students also scored on average lower in Exit TAKS mathematics than Exit TAKS English language arts.

## **Advanced Placement Course Participation and ELL and Non-ELL Students**

Advanced Placement course participation is open to all student populations regardless of English language proficiency. Part of the objective behind the second research question was to determine if there was differential participation of AP course studies between ELL and non-ELL students. Both AP English language arts (ELA) and AP mathematics course participation among ELL and non-ELL first-in-the-family graduates were examined. AP participation for first-in-the-family graduates, in general, was low. The sample sizes for Advanced Placement participation by ELL and non-ELL ranged from 1 to 22 out of the original 205 students in the study's population per subject area. For those sample populations investigated where there was one student, no statistical analysis could be performed.

When AP English language arts course participation was compared between ELLs and non-ELLs, there were 22 non-ELL students who participated in AP ELA and one ELL student who also participated in the course. While the mean for non-ELL was 1.23 credits, a comparison to determine statistical significance could not be made because the one ELL case of participation could not be utilized as a comparable variable. First-in-the-family Hispanic graduates as a whole did not earn many AP ELA credits. The single ELL student who earned AP ELA credit did indicate a gap in advanced course participation for this demographic.

When AP mathematics participation was examined, calculations indicated a similar phenomenon that occurred with AP ELA. There were 14 non-ELLs who

participated in AP mathematics with a mean of 1.07. There was one ELL student who earned one AP mathematics credit. While ELLs participated less frequently in AP mathematics course studies than non-ELLs, the difference between course participation could not be compared statistically. There was, however, a distinct drop in AP course participation for all first-in-the-family students between AP ELA and AP mathematics. The mathematics content area had less AP course participation across the entire population regardless of English language proficiency.

The mean for AP ELA non-ELL was 1.23 and the mean for AP mathematics non-ELL was 1.07. There was a single AP ELA ELL participant and a single AP mathematics ELL participant. Neither ELL AP course credit earner was a participant in the qualitative interviews of the Record of Study, but the interview participants did share perceptions that can add context to the reasoning behind low AP course participation.

### **Dual Credit Course Participation and ELL and non-ELL Students**

Dual credit course participation is another form of advanced course studies in high school, and while students must meet college requirements for such course studies, the option to enroll in this course work is open to all student populations regardless of English language proficiency, as long as the college requirement for enrollment is met. Another objective in the second research question was to decide if there was differential dual credit course participation between ELL and non-ELL students in both the English language arts and mathematics content areas.

When dual credit course participation was compared between ELLs and non-ELLs, sample populations were again small. Non-ELL sample size was 24 and the ELL

sample size was 2. The mean for dual credit English language arts course participants who were non-ELL was 1.417 and the standard deviation = .637. Both ELL students who earned dual credit in ELA earned two credits, but the sample size was too small to analyze statistical significance. ELL students lacked advanced course participation in dual credit English language arts.

Upon examination of dual credit mathematics, the sample sizes between ELL and non-ELL course participation were again small. Non-ELL sample size was 24 and ELL sample size was 2. The mean for non-ELL was 1.708 and the standard deviation = .916. The ELL sample size was two and both students each earned two credits in dual credit mathematics. Analysis of statistical significance again could not be performed.

#### **Quantitative Data: Academic Achievement by Socioeconomic Status**

The third research question considered whether or not there was differential advanced course participation among graduates by socioeconomic status. The socioeconomic status was identified based on the student management system demographic identifier for those receiving free and reduced lunch. Those who received free and reduced lunch during high school were identified as low SES (socioeconomic status). Those who did not receive free and reduced lunch based on family income were identified as non-low SES. The difference in Exit TAKS performance between low SES and non-low SES was first determined. Advanced course participation between the two student populations was also examined to determine if there was a statistically significant difference between the groups of graduates who were categorized by socioeconomic status. The data analysis for the third research question was the same

process as it was for the previous data regarding English language proficiency.

Confidence intervals (CIs) were utilized to assess the variance and precision of the point estimates for the two proportions. Effect sizes were also calculated to determine the strength of the effect (Cohen's  $d$ ).

### **Exit TAKS Performance and Socioeconomic Status**

The objective of the third research question was to determine if there was differential in participation of advanced coursework between graduates who were identified as low socioeconomic status and those not low SES. Before the advanced course participation among both populations was examined, Exit TAKS performance in English language arts (ELA) and mathematics for the two populations were compared to determine if there was a difference in performance on the state exam.

Comparison of Exit TAKS ELA performance by socioeconomic status was made using confidence intervals. The CIs revealed there was no statistically significant difference between Exit TAKS ELA performance of low SES and non-low SES students. The mean for Exit TAKS ELA performance for low SES students was 2265.06, and the standard deviation = 108.890. The mean for non-low SES student Exit TAKS ELA performance was 2259.90 with the standard deviation = 119.563. Effect size for the two populations regarding Exit TAKS ELA was  $d=.003$ . Figure 5 presents the visual representation of the CIs.

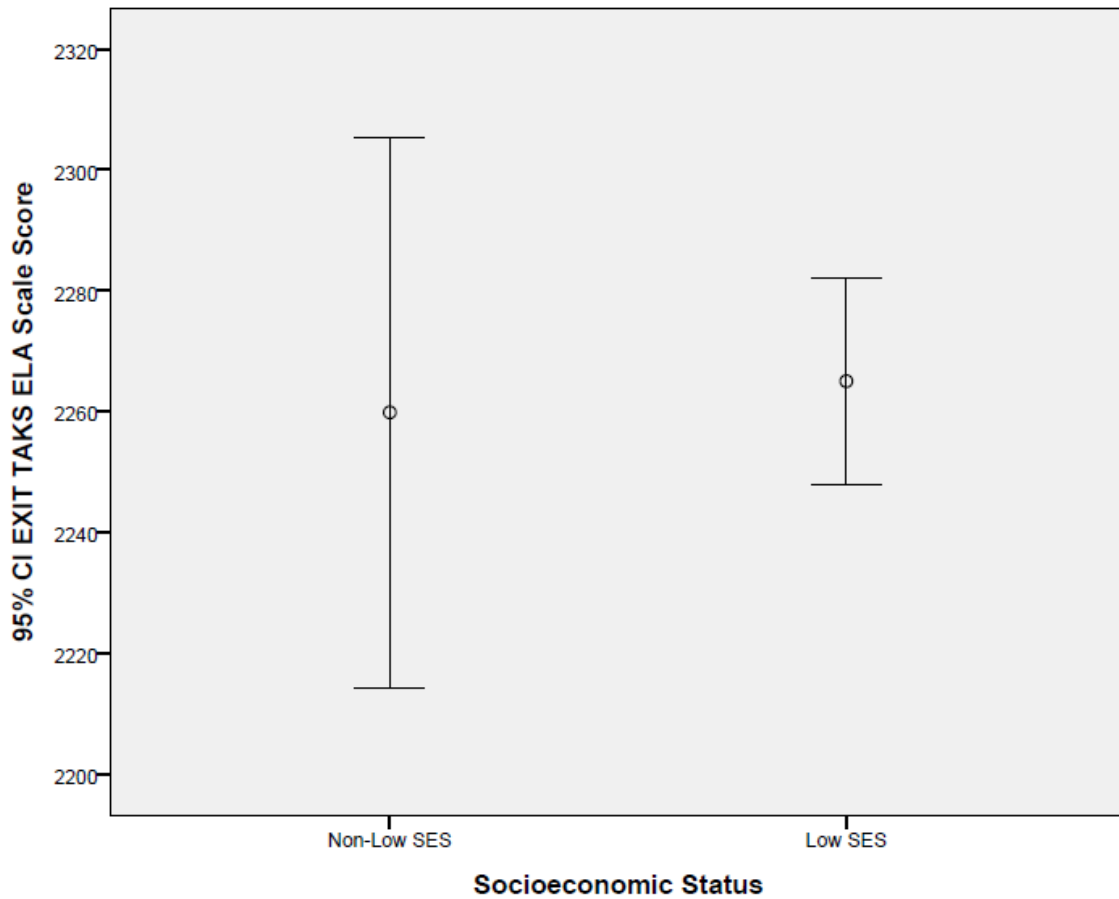


Figure 5. Exit TAKS ELA student performance by socioeconomic status.

The CIs presented in Figure 5 show the variance of Exit TAKS English language arts by socioeconomic status. Scale score performance on Exit TAKS ELA was the dependent variable. The two independent variables were the student groups categorized by socioeconomic status (low SES and non-low SES). Each error bar represented the variance of Exit TAKS ELA mean scale scores for each student population. The midpoint (mean) for low SES was 2265.06. The midpoint (mean) for non-low SES was 2259.90. The values along each error bar represented possible scale

score mean with the midpoint indicating the mean from the study's sample population for each group (low SES and non-low SES). The bar for non-low SES was longer than the bar for low SES, which indicated the sample size for low SES was larger than that of non-low SES sample population. The mean scale score for low SES, therefore, was more precise than that of the non-low SES population.

The mean for low SES and non-low SES represented the average scale scores on Exit TAKS ELA. The mean for low SES was 2265.06 and the mean for non-low SES was 2259.90. When the graduates were grouped by socioeconomic status, Exit TAKS ELA mean performance for low SES was closer to the minimum passing score of 2100. Non-low SES mean was closer to the commended rating of 2400 but only by one or two more test items than its counterpart. Based on both means that are close together, performance on Exit TAKS ELA was similar in both groups.

Figure 5 presented CIs with mean scale scores on Exit TAKS ELA by socioeconomic status. Each error bar represented the variance in potential Exit TAKS ELA mean scale scores per group (low SES and non-low SES). The fixed endpoints of each 95% CI indicate that if the study were replicated, the confidence interval would capture the mean 95% of the time. With 95% confidence one can expect scale score mean for Exit TAKS ELA performance by low SES to reside approximately between 2250 and 2280 and the scale score mean by non-low SES to reside between 2215 and 2305 95% of the time if replicated. Any scale scores outside the error bar endpoints represented the scale scores likely to occur less than 5% of the time.

A comparison of the two independent variables (low SES and non-low SES) was made to help determine if there was a difference in Exit TAKS ELA performance. The distance between the two intervals indicated how much difference there was between low SES and non-low SES Exit TAKS ELA performance. An overlap would have represented no statistically significant difference. In the case of low SES and non-low SES, there was a clear overlap of the CIs. With the 95% chance that the CIs in Figure 5 included the true means of each population, .05 would not be included in each of the CIs. With the  $p$  value being less than or equal to .05, an overlap of .50 would represent the threshold for determining if there was statistical significance. Because the CIs overlapped more than .50, the conclusion is that there was a statistically significant difference between the two groups. The non-low SES population performed only minimally better on the Exit TAKS ELA than the low-SES population.

The effect size for low SES and non-low SES by Exit TAKS ELA performance was  $d=.003$ . The value appears small. When examined within the context of scale scores for Exit TAKS where 2100 is a minimum score and 2400 is a commended score, the value of the effect size indicated there is not much difference in the means for each population and the means rest between both minimum and commended score values. The effect of socioeconomic status has not strong.

When Exit TAKS mathematics performance for low SES and non-low SES graduates were compared, a similar pattern as Exit TAKS English language arts performance was noted. Confidence intervals were used to compare Exit TAKS mathematics performance by socioeconomic status. The mean for Exit TAKS



mathematics performance for low SES students was 2223.36, and the standard deviation = 120.122. The mean for non-low SES student Exit TAKS mathematics performance was 2213.10 with the standard deviation = 114.417. The effect size for Exit TAKS mathematics performance based on socioeconomic status was  $d=.007$ . Confidence intervals were presented in Figure 6.

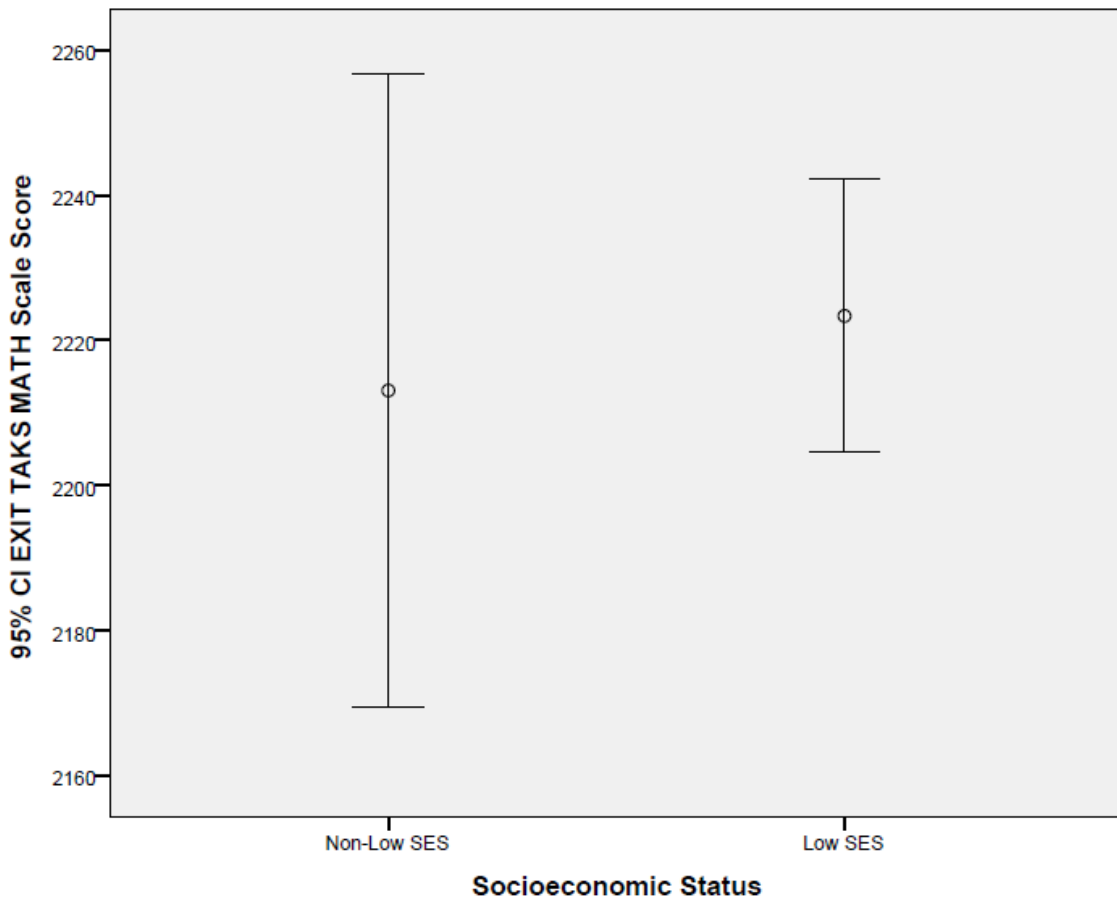


Figure 6. Exit TAKS mathematics student performance by socioeconomic status.

The CIs presented in Figure 6 show the variance of Exit TAKS mathematics mean scale scores for graduates grouped by socioeconomic status (low SES and non-low

SES). Scale score performance on Exit TAKS mathematics was the dependent variable. The two independent variables were the student groups categorized by socioeconomic status. Each error bar represented the variance of Exit TAKS mathematics mean scale scores for each student population. The midpoint (mean) for low SES was 2223.36. The midpoint (mean) for non-low SES was 2213.10. The values along each error bar represented possible scale score mean with the midpoint indicating the mean from the study's sample population for each group. The bar for non-low SES was smaller than the bar for low SES which indicated the sample size for low SES was larger than that of non-low SES sample population. The mean scale score for low SES, therefore, was more precise than that of the non-low SES population.

The means for low SES and non-low SES represented the average scale scores on Exit TAKS mathematics. The mean for low SES was 2223.36 and the mean for non-low SES was 2213.10. When the graduates were grouped by socioeconomic status, Exit TAKS mathematics mean performance for non-low SES was lower than low SES, but only by approximately one test item. Both groups performed closer to the minimal passing score of 2100 than the commended score of 2400.

Figure 6 presented CIs with mean scale scores on Exit TAKS mathematics by socioeconomic status. Each error bar represented the variance in potential Exit TAKS mathematics mean scale scores per group (low SES and non-low SES). The fixed endpoints of each 95% CI indicate that if the study were replicated, the confidence interval would capture the mean 95% of the time. With 95% confidence one can expect scale score mean for Exit TAKS mathematics performance by low SES to reside

approximately between 2208 and 2245 and the scale score mean by non-low SES to reside between 2170 and 2258 95% of the time if replicated. Any scale scores outside the error bar endpoints represented the scale scores likely to occur less than 5% of the time.

A comparison of the two independent variables (low SES and non-low SES) was made to help determine the difference in Exit TAKS mathematics performance. The distance between the two intervals indicated how much difference there was between low SES and non-low SES Exit TAKS mathematics performance. An overlap would represent no statistically significant difference. With the 95% chance that the CIs in Figure 6 included the true means of each population, .05 would not be included in each of the CIs. With the p value being less than or equal to .05, an overlap of less than .50 would represent statistical significance. In the case of Figure 6, the overlap was distinctly more than .50 overlap and therefore there was no statistically significant difference in Exit TAKS mathematics performance. Similar to Exit TAKS ELA performance, socioeconomic status did not make a significant difference in the sample population's Exit TAKS mathematics performance.

The effect size for Exit TAKS mathematics performance by socioeconomic status was  $d=.007$ . Low SES had a slightly higher mean score, which indicated they performed marginally better on the Exit TAKS mathematics exam compared to their low SES counterparts. There was no statistically significant difference between the means. Similar to the difference in Exit TAKS ELA performance, low SES graduates and non-low SES graduates performed at a moderate level, with mean scores resting between

minimum and commended levels of performance. The effect of socioeconomic status did not represent a great value of improvement in exam performance.

### **Advanced Placement Course Participation and Socioeconomic Status**

Advanced Placement course participation between students who were not identified as low SES and those who were low SES was examined as part of the investigation regarding the third research question. The objective was to determine if there was differential in participation between the two student groups. Course credit completion data for AP English language arts and mathematics were utilized. The sample sizes for Advanced Placement participation by socioeconomic status ranged from 2 to 17 out of the original 205 students in the study's population per subject area. For those sample populations investigated where there was one student, no statistical analysis could be performed.

Comparison of the AP English language arts (ELA) participation among first-in-the-family graduates was examined based on socioeconomic status. There was no statistically significant difference in participation between low SES and non-low SES. The mean for AP ELA course participation for non-low SES was 1.17 and the standard deviation = .408. The mean for AP ELA course participation for low SES was 1.24 with standard deviation = .437. Effect size was  $d=.044$ . Figure 7 presents the data regarding confidence intervals.

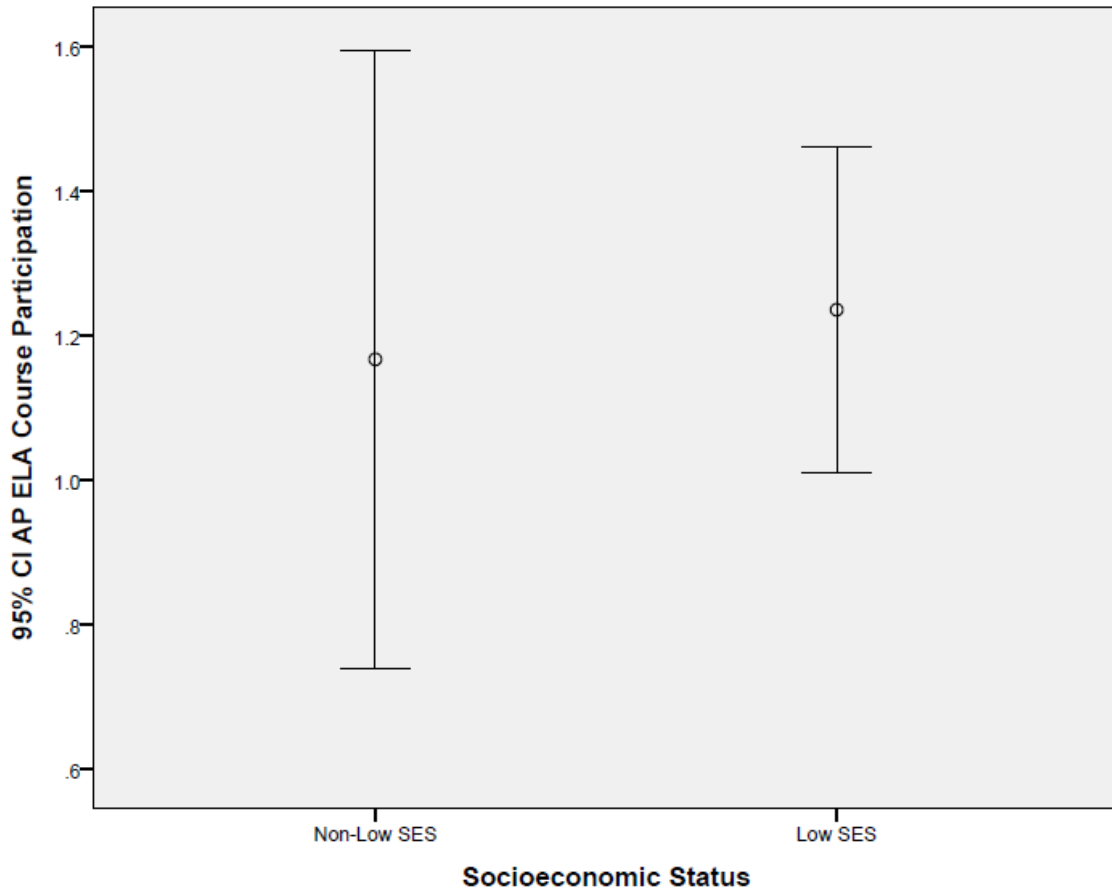


Figure 7. Advanced placement ELA course participation by socioeconomic status.

Confidence intervals were again used to compare participation by socioeconomic status. The CIs presented in Figure 7 show the variance in mean values of Advanced Placement (AP) ELA course participation by socioeconomic status. Course participation in AP ELA was the dependent variable. The two independent variables were the student groups categorized as low SES and non-low SES. Each error bar represented the variance of AP ELA course participation mean for each group. The midpoint (mean) for non-low SES was 1.17, and the midpoint (mean) for low SES was 1.24. The values

along each error bar represented possible AP ELA mean course credit earned with the midpoint indicating the mean from the study's sample population for each group. The bar for low SES was smaller, indicating the sample size for low SES was larger than non-low SES. The mean scale score for low SES, therefore, was more precise than the mean scale score for non-low SES.

The mean for low SES and non-low SES represented the average course participation in AP ELA. The mean for non-low SES was 1.17 and the mean for low SES was 1.24. When the graduates were grouped by socioeconomic status, AP ELA course participation for low SES was slightly higher than the non-low SES population. Both groups participated in AP ELA course studies minimally with each group having a mean valued slightly more than one course credit.

Figure 7 presented CIs with the mean values of AP ELA course participation. Each error bar represented the variance in potential mean values for each group (low SES and non-low SES). The fixed endpoints of each 95% CI indicate that if the study were replicated, the confidence interval would capture the mean 95% of the time. With 95% confidence one can expect the mean for AP ELA course participation by non-low SES to reside between .75 and 1.6 and the mean by low SES to reside between 1.05 and 1.5% of the time if replicated. Any scale scores outside the error bar endpoints represented the scale scores likely to occur less than 5% of the time.

A comparison of the two independent variables (low SES and non-low SES) was made to help determine the difference in AP ELA course participation. The distance between the two intervals indicated how much difference there was between low SES

and non-low SES AP ELA course participation. An overlap of the CIs would represent no statistically significant difference. In the case of low SES and non-low SES, there was an overlap. With the 95% chance that the CIs in Figure 7 included the true means of each student population, .05 would not be included in each of the CIs. With  $p$  value being less than or equal to .05, an overlap of .50 would represent a statistically significant difference. The CIs in Figure 7 overlapped more than .50 and therefore there was no statistically significant difference in AP ELA course participation between the two student groups. Low SES participated in AP ELA more often, but only minimally more often.

Effect size was calculated in order to determine the strength of the effect. Calculations resulted in an effect size of  $d=.044$ . The values examined represented the average number of credits earned in AP ELA by both groups of students. Both groups had a mean score that represented slightly more than one class credit. The effect size was small. Both groups had a low level of participation with neither group having a substantial average of credits higher than its counterpart. While more frequent course participation occurred among low SES students, as represented by its means, it was still not a value high enough to represent a second course credit.

Advanced Placement mathematics participation was also examined within the context of student socioeconomic status. Sample size for non-low SES was 2 while sample size for low-SES was 13. Because the sample size for non-low SES had only two students who both earned one credit in AP mathematics, no statistical analysis could be performed. The mean for low SES students was 1.08 with standard deviation = .277.

Advanced placement mathematics had minimal course participation among first-in-the-family graduates regardless of socioeconomic status.

### **Dual Credit Course Participation and Socioeconomic Status**

Dual credit course participation was also examined by socioeconomic status. The goal was to determine if there was a statistically significant difference in participation between the two groups in both dual credit English language arts (ELA) and dual credit mathematics.

When dual credit ELA course participation was compared by socioeconomic status, there was no statistically significant difference between the groups. The mean for dual credit ELA course participation for non-low SES students was 1.333 with standard deviation = .577. The mean for low SES students was 1.478 and the standard deviation = .648. The effect size for low SES students and non-low SES dual credit ELA participation was .049. Figure 8 shows the confidence intervals.



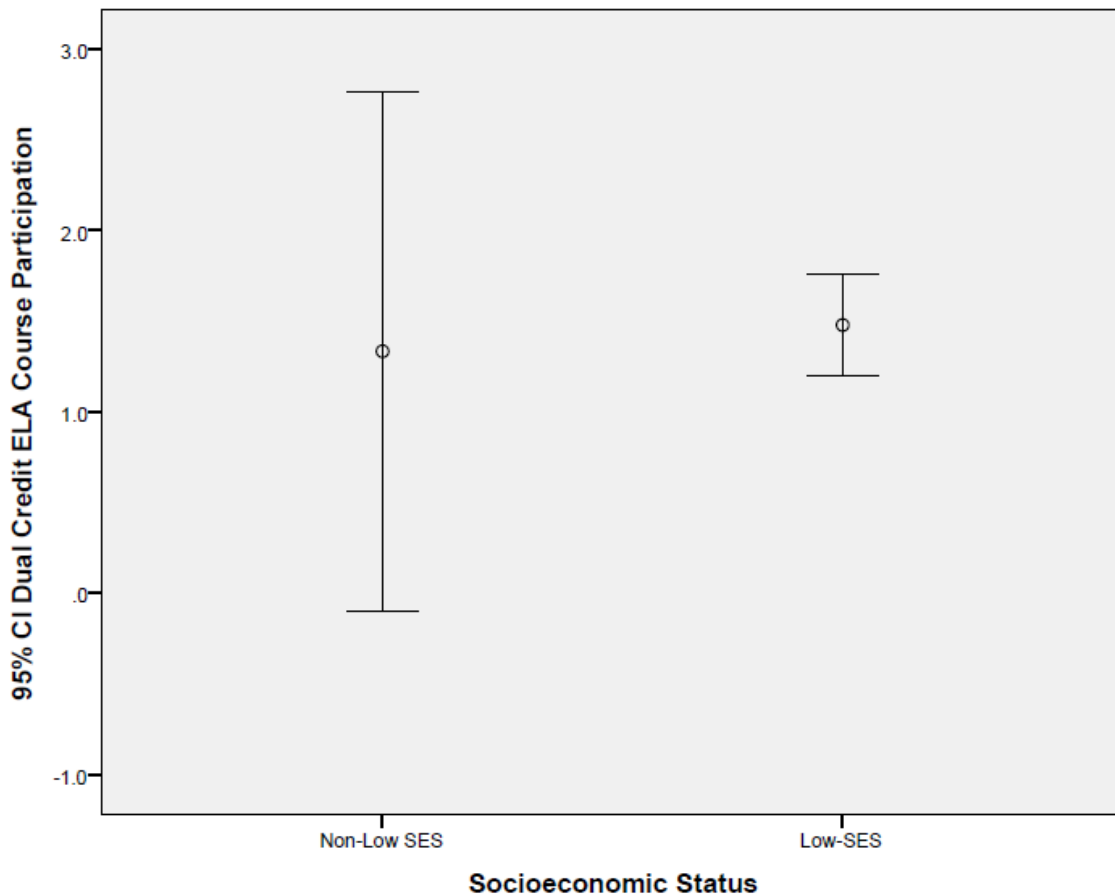


Figure 8. Dual credit ELA course participation by socioeconomic status.

The CIs displayed in Figure 8 show the variance in dual credit course participation by socioeconomic status. Course participation in dual credit ELA was the dependent variable. Two independent variables were student groups categorized by socioeconomic status (low SES and non-low SES). Each error bar represented the variance of mean credits earned for each student population. The midpoint (mean) for non-low SES was 1.333 and the midpoint (mean) for low SES was 1.478. The values along each error bar represented possible mean credits earned with the midpoint

indicating the mean from the study's sample population for each group (low SES and non-low SES). The bar for low SES was smaller than the bar for non-low SES, which indicated the sample size for low SES was larger than the sample size for non-low SES. The mean value of credits earned for low SES, therefore, was more precise than that of the non-low SES population.

The means for low SES and non-low SES represented the average credits earned in dual credit ELA for each group. The mean for non-low SES was 1.333 and the mean for low SES was 1.478. When the graduates were grouped by socioeconomic status, dual credit ELA mean credits earned for non-low SES was slightly lower than low SES. Both populations earned an average slightly less than one and one half course credits.

Figure 8 presented CIs with mean values of credits earned for dual credit ELA by socioeconomic status. Each error bar represented the variance in potential average credits earned. The fixed endpoints of each 95% CI indicate that if the study were replicated, the confidence interval would capture the mean 95% of the time. With 95% confidence one can expect the mean for dual credit ELA course participation by non-low SES to reside between -.2 and 2.8 and the mean by low SES to reside between 1.3 and 1.6 95% of the time if replicated. Any scale scores outside the error bar endpoints represented the scale scores likely to occur less than 5% of the time.

A comparison of the two independent variables (low SES and non-low SES) was made to help determine if there was a difference in dual credit ELA course participation. The distance between the two intervals indicated how much difference there was between low SES and non-low SES dual credit ELA course participation. A large

overlap would have represented no statistically significant difference. In the case of low SES and non-low SES, there was an overlap. With the 95% chance that the CIs in Figure 8 included the true means, .05 would not be included in each of the CIs. With the  $p$  value being less than or equal to .05, an overlap of .50 or over would represent no statistically significant difference. Because the CIs for low SES and non-low SES overlapped more than .50, there was no statistically significant difference in dual credit ELA course participation. The non-low SES population participated in dual credit ELA course studies less often, but minimally less often than their counterparts.

Effect size for low SES and non-low SES by dual credit ELA participation was  $d=.049$ . The low SES students only marginally earned more English language arts dual credit than the non-low SES student population, which was not only evident in means for the populations, but also in the midpoint of the CIs. The effect size was small, which indicated that the average earned dual credit in English language arts was rather similar between the two groups. Socioeconomic status did not have an impact on dual credit English language arts participation.

When dual credit mathematics course participation was compared by socioeconomic status, there were 14 low-SES participants and one non-low SES participant. While the mean for low SES was 1.08 credits, a comparison to determine statistical significance could not be made because the one non-low SES case could not be utilized as a comparable variable. First-in-the-family Hispanic graduates as a whole did not participate much in dual credit mathematics. The single non-low SES participant who earned dual credit in mathematics and low participation in both socioeconomic

groups compared to participation in dual credit ELA did indicate a gap in advanced math course participation for this demographic.

### **Quantitative Data: TSI Exemption by Advanced Course Studies**

The fourth and fifth research questions involved an investigation of first-in-the-family graduates who participated in advanced course studies and met the TSI exemption standard on the TAKS (scale score 2200). Exit TAKS English language arts and mathematics scores are used by higher education to determine exemption from the TSI. The TSI exemption based on TAKS English language arts and/or mathematics performance allows students to take standard college course work upon enrollment without having to take the TSI exam. If high school graduates do not meet TSI exemptions based on TAKS performance, they are required to take remedial course work in English language arts and mathematics when they enroll in higher learning. The sample population utilized for this data analysis was not substantial in size. First-in-the-family graduates rarely participate in advanced studies. The advanced course investigation by TSI exemption was also limited to Advanced Placement English language arts and math because dual credit course studies require high Exit TAKS scale score or TSI score in order to enroll. As a result, the TSI exemption analysis had rather small numbers of students.

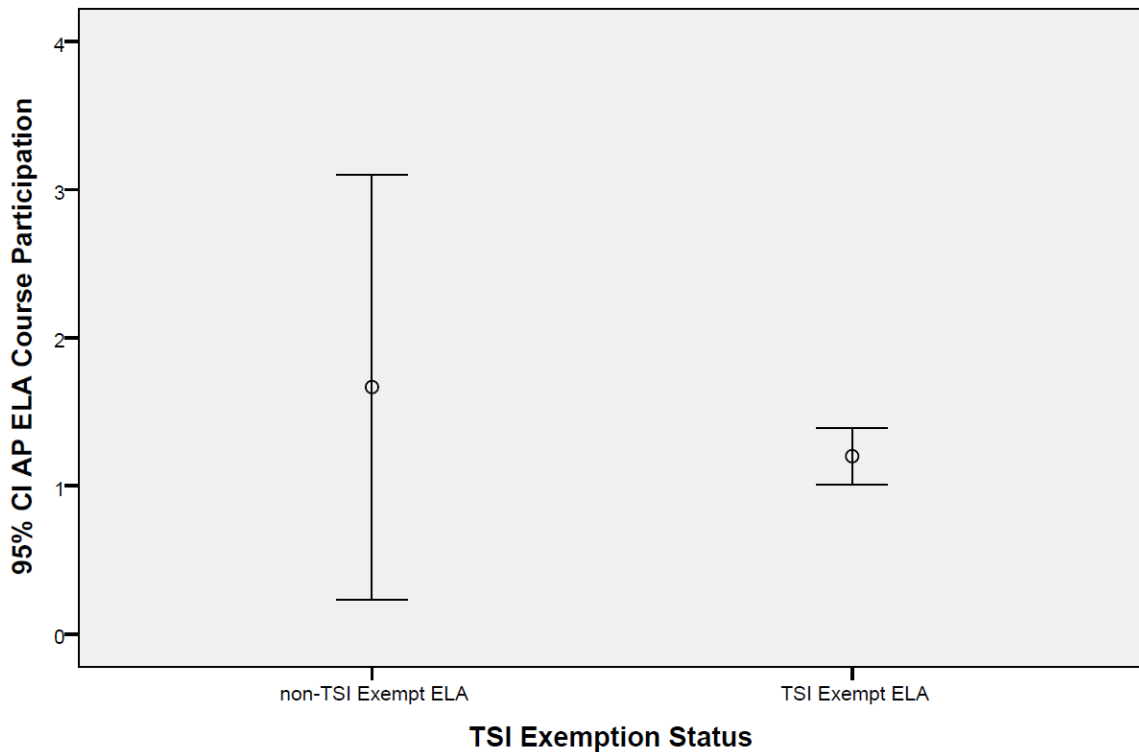
The data analysis of advanced course studies by TSI exemption again involved quantitative descriptive statistics with the use of 95% confidence intervals to assess the variance and precision of the point estimates for the two proportions. The  $p$ -critical was set to .05 where a  $p$  value of less than .05 represented a statistically significant difference

in performance. Confidence intervals were utilized to help provide a visual representation of the numerical data so that possible patterns across variables could be compared and more readily interpreted. Effect sizes were calculated to provide a further estimation of the practical importance in the differences of the subgroup point estimates.

### **TSI English Language Arts Exemption and Advanced Course Participation**

The fourth research question focused on the relationship between TSI English language arts (ELA) exemption status and advanced course participation among first-in-the-family graduates. AP course participation was the first type of advanced course examined. Confidence intervals were used to compare sample populations for similarities or differences between the AP ELA course participants who did meet the TSI exemption for ELA and those students who did not meet the exemption.

Advanced Placement ELA course participation by TSI exemption revealed no statistically significant difference. Confidence intervals were utilized to determine the variance of credits earned for each population. The mean for AP ELA course participation for TSI exempt ELA students was 1.20, and the standard deviation = .410. The mean for AP ELA course participation for non-TSI exempt ELA students was 1.67 with standard deviation = .410. The effect size was  $d=.159$ . Figure 9 presents data regarding confidence intervals.



*Figure 9.* TSI exemption status by advanced placement ELA course participation.

The confidence intervals for AP ELA participation by TSI exemption ELA status were calculated and presented in Figure 9. The CIs depict the variance of mean value for AP ELA course participation by TSI exemption status. AP ELA course participation was the dependent variable. The means represented the AP ELA credits earned based on the independent variables (TSI exempt ELA and non-TSI exempt ELA). The independent variables were represented by each error bar. The mean of each TSI status represented the average number of credits earned per group. The midpoint (mean) for TSI exempt ELA was 1.20 credits earned. The midpoint for non-TSI exempt ELA was 1.67. The bar for TSI exempt ELA mean was shorter than the bar presenting non-TSI exempt ELA mean, which indicated more precise means (more variance) for TSI exempt

ELA population. With the longer error bar, non-TSI exempt ELA mean involved fewer students in the group with a less precise outcome.

The means for TSI exempt and non-TSI exempt represented the average course participation (credits earned) in AP ELA. The mean for TSI exempt was 1.20 and the mean for non-TSI exempt was 1.67. Because AP ELA credit can be earned during 11<sup>th</sup> and 12<sup>th</sup> grade and function as the required English credits for graduation, every student has the opportunity to earn two course credits. While there were fewer non-TSI exempt students with credits earned in AP ELA, they on average earned more credits than their counterparts. However, because the sample size was small for non-TSI exempt, the mean was less precise.

Figure 9 presented CIs with mean values for AP ELA credits earned by TSI exemption. Each error bar represented the variance in potential AP ELA mean credits earned. The fixed endpoints of each 95% CI indicate that if the study were replicated, the confidence interval would capture the mean 95% of the time. With 95% confidence one can expect the mean for AP ELA course participation by TSI exempt to reside between 1.0 and 1.3 and the mean by non-TSI exempt to reside between .3 and 3.0 95% of the time if replicated. Any scale scores outside the error bar endpoints represented the scale scores likely to occur less than 5% of the time.

A comparison of the two independent variables (TSI exempt and non-TSI exempt) was made to help determine if there was a statistically significant difference in AP ELA participation. The distance between the two intervals indicated how much difference there was between the two independent variables. A large overlap of the CIs

would have represented no statistically significant difference. In the case of Figure 9, there was a large overlap. With the 95% chance that the CIs in Figure 9 included the true means of each student population, .05 would not be included in each of the CIs. With the  $p$  value, being less than or equal to .05, an overlap of over .50 would indicate there was no significant statistical difference. In the case of Figure 9, there was a large overlap that was over .50. Non-TSI exempt earned slightly more credits per student than TSI exempt students, but the sample size for non-TSI exempt was rather small.

The effect size for student AP ELA participation by TSI exemption was  $d=.159$ . The effect is small, given that the means for both populations were between one and two credits. There is not much difference between both means and the effect of the condition investigated (TSI ELA exemption) was not strong. More TSI exempt students participated in AP ELA course studies, but on average non-exempt TSI students earned more credits per student. This meant more students who took AP ELA courses earned a high enough Exit TAKS ELA scale score to be exempt from the TSI English exam. Exemption from TSI meant meeting the prerequisite needed to enroll in standard college courses without having to take remedial English language arts course studies. First-in-the-family students who participated in AP ELA coursework were less likely to have to take remedial English course work in college. While they were more prepared for the rigor of college level English coursework and more students participated in AP ELA, they earned less advanced credits individually.

Dual credit English language arts (ELA) course participation was also examined as part of the fourth research question because it was another advanced course option in

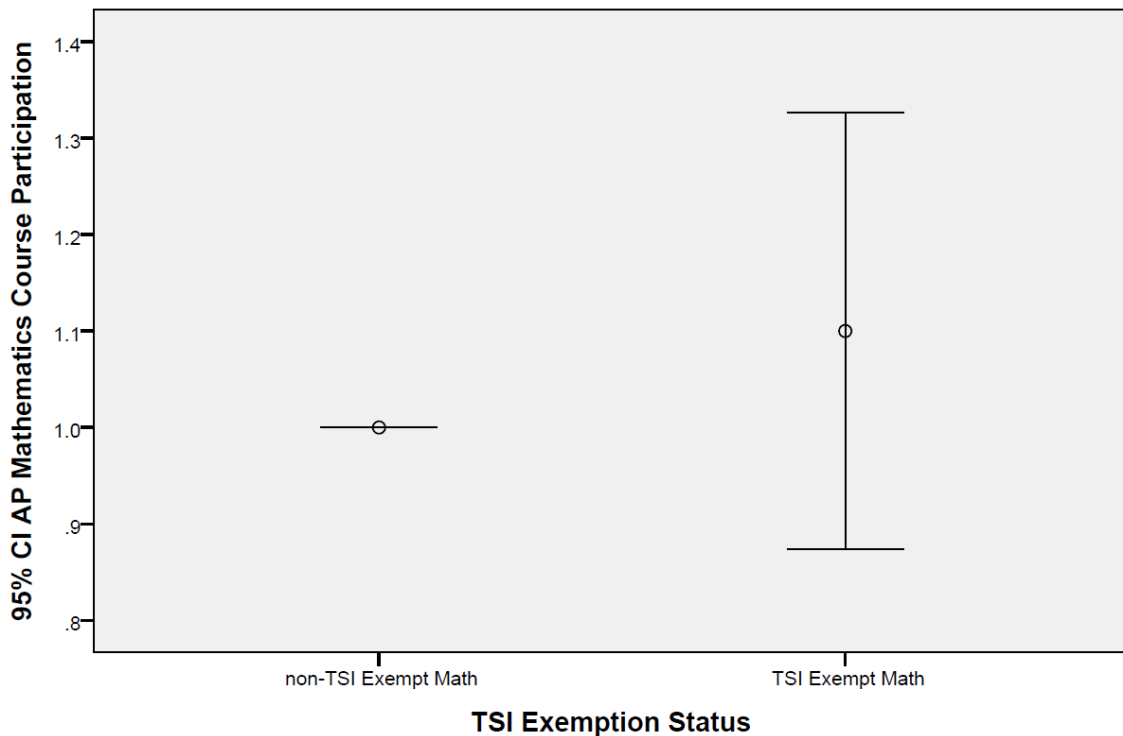


high school course English language arts. The goal was to use confidence intervals to help determine if there was a statistically significant difference between the dual credit ELA course participants who did meet the TSI ELA exemption and those students who did not. When data was collected and analyzed, however, no comparisons could be made between the number of students who earned dual credit ELA based on TSI ELA exemption because there were no students who participated in dual credit ELA who did not meet the TSI ELA exemption. Effect size for the dual credit ELA participation by TSI ELAs exemption could also not be examined because there were no students who met the non-exempt status for that subject area.

### **TSI Mathematics Exemption and Advanced Course Participation**

The fifth research question focused on the relationship between TSI mathematics exemption status and advanced course participation among first-in-the-family graduates. Advanced Placement course participation was the first type of advanced course examined based on the TSI mathematics exemption.

Confidence intervals were again utilized to determine the variance of credits earned for AP mathematics course participation by TSI mathematics exemption. There was no statistically significant difference found between the two student groups. The mean for TSI mathematics exempted graduates was 1.10, and the standard deviation = .316. The mean for those graduates who did not meet TSI exemption was 1.00 with standard deviation = .00 because all non-TSI exemp students earned one credit each in AP mathematics.. Effect size for AP mathematics by TSI exemption was  $d=.16$ . Figure 10 shows data regarding confidence intervals.



*Figure 10.* TSI mathematics exemption status by advanced placement mathematics course participation.

The confidence intervals for AP mathematics participation by TSI mathematics exemption status were calculated and presented in Figure 10. The CIs depict the variance of mean value for AP mathematics course participation by TSI exemption status. AP mathematics course participation was the dependent variable. The means represented the AP mathematics credits earned based on the independent variables (TSI exempt Math and non-TSI exempt Math). The independent variables were represented by each error bar. The mean of each TSI status represented the average number of credits earned per group. The midpoint (mean) for TSI exempt math was 1.10 and the midpoint (mean) was 1.00. The bar for TSI exempt math was long, which usually

indicates a small sample size and therefore not a very precise mean. The bar for non-TSI exempt math had no variance because each student in the sample earned one credit.

The means for TSI exempt and non-TSI exempt represented the average course participation (credits earned) in AP mathematics. The mean for TSI exempt was 1.10 and the mean for non-TSI exempt was 1.00. Because AP mathematics can be earned during 11<sup>th</sup> and 12<sup>th</sup> grade but requires completion of Algebra 2 and/or precalculus, not many students in general participate in such coursework. TSI exempt did have more participation but neither mean reached higher than the value of one course credit.

Figure 10 presented CIs with mean values for AP math credits earned by TSI exemption status. Each error bar represented the variance (if present) in potential AP mathematics mean credits earned. The fixed endpoints of each 95% CI indicate that if the study were replicated, the confidence interval would capture the mean 95% of the time. With 95% confidence one can expect the mean for AP mathematics course participation by TSI exempt to reside approximately between .87 and 1.33 95% of the time if replicated. The error bar for non-TSI had no visible variance because all students in the group earned one credit. Any scale scores outside the error bar endpoints represented the scale scores likely to occur less than 5% of the time

A comparison of the two independent variables was made to help determine if there was a statistically significant difference in AP mathematics participation. The distance between the two intervals indicated how much difference there was between exempt and non-TSI exempt populations. A large overlap of the CIs would have represented no statistically significant difference. In the case of AP mathematics by TSI

exemption, there was a large overlap. With the 95% chance that the CIs in Figure 10 included the true means of each student population, .05 would not be included in each of the CIs. With the  $p$  value, being less than or equal to .05, an overlap of over .50 would indicate there was no significant statistical difference. In Figure 10, there was a complete overlap because there was minimal variance for the non-TSI exempt. TSI exempt earned slightly more AP mathematics credits than non-TSI exempt, but minimally more with both groups earning roughly an average of one credit.

The effect size for AP mathematics participation by TSI mathematics exemption was  $d=.16$ . The effect would appear small, given that the means for both populations were both close to one credit. There is not much difference between both means and the effect of the condition investigated (TSI mathematics exemption) was not strong.

Dual credit mathematics course participation was also examined as part of the fifth research question because it was another advanced course option in high school math. The goal was again to use confidence intervals to determine if there was a statistically significant difference of dual credit mathematics participation by TSI mathematics exemption. When dual credit mathematics course participation was compared between TSI mathematics exempted students and those not exempted, the data indicated that no comparisons could be made because there were no students in the sample population who took the dual credit mathematics courses.

### **Qualitative Data: Student Perceptions Regarding Student Success**

The sixth research question asked what contributed to successful transition or lack of transition to college. Five graduates responded to the invitation to participate in the semi-structured interviews. The interview protocol consisted of 16 questions; the first nine questions focused primarily on the participant's high school academic experience, and the remaining questions addressed the college experience and additional perceptions overall (Appendix B). Interview responses were recorded digitally. Once the interviews were completed, the audio recordings were transcribed verbatim in order to determine key words and phrases across all interviews that revealed themes, patterns, or exceptional differences in student perception. The participants' responses to the questions related to the high school experience resulted in three themes: (a) desire for the American Dream, (b) discrimination and the student experience, and (c) *ganas* or "the internal desire to achieve."

#### **Desire for the American Dream**

The American Dream is a goal for most people who live in the United States, but participants in the interviews, in particular, expressed the desire to attain life goals which surpassed those of their parents. The researcher used the theme of American Dream because all interview participants indicated their families had come from Mexico and they were presently attempting to make a life for themselves that was more successful than what their parents had growing up.

While country of origin is not collected from students while attending public schools, each interviewee identified themselves as individuals who emigrated from

Mexico as young children, or they identified their parents as having migrated from Mexico. Interview participants voluntarily shared non-citizenship status prior to the recorded interviews, but they were careful not to mention such information while the recorded interviews proceeded. No research questions or interview questions directly addressed the citizenship of students or their families because it is not legal to ask student citizenship status while in high school. Some participants explained prior to recorded interviews that they themselves had government papers for permission to reside in the United States, but no participants indicated legal citizenship.

The first two interview questions asked about family members' education and invited the participants to share why they thought they were the first in their families to graduate. Within the context of this portion of the interviews, participants shared stories about their family backgrounds, including country of origin. Participants indicated that at least one parent completed some amount of secondary level education but never graduated in Mexico. For example, one male participant began the interview with the comment, "I don't know if you know about my situation, but my parents both grew up and lived in Mexico." All participants also pointed out that their parents had no choice but to stop attending school in order to work and support their families. One participant commented, "My mother finished 9<sup>th</sup> grade in Mexico." Another participant stated, "My parents didn't go to school. They worked there."

Grandparents of some participants, at best, completed elementary school with one grandfather opting to join the military in Mexico. One participant stated, "My

grandpa finished the 4<sup>th</sup> grade in Mexico. All my grandparents on both sides didn't finish elementary there." One participant indicated, "Both grandparents have passed."

When asked why they thought they had been able to complete high school when no one else in their families had been able to, all participants indicated an external motivation inspired by family to have a better life than their parents had had and to take advantage of what this country had to offer. One interviewee stated, "I wanted to show appreciation to the family where they came from for making my education." One female participant referred to her parents who were not American citizens and stated, "They wanted me to have more than them...something they didn't have."

Participants described the struggles their parents experienced to reach the United States with the incentive for emigrating being simply to provide more opportunities for their children. A parentally inspired sense of family obligation to achieve the American Dream emerged throughout the interviews. One participant pointed out, "I wanted opportunities my family didn't have." One participant described what was to her a clear difference among Hispanic youth in public schools when she indicated, "Us [*sic*] who come from another country have the desire to become better and work hard for what we want but many from here do not try." She asked not to record her personal story but chose to share the experience after the recorded interview and indicated that she had been smuggled across the border alone as a young child without her parents and did not know where she was headed in the van. She stated, "My family brought me here because they wanted better for me. My mother wanted me to learn English; that was her wish, but I made that wish true for her when I graduated." Another participant noted

that one of the major reasons that she earned her diploma was to take care of her mother so she did not have to work the way she always had. The participant stated, “I just don’t want to be a waitress. I want to earn good money.” One male participant explained that his family struggle led to his desire to want better for himself:

I wanted more than what my parents or even my older brother had. I was from a traditional kind of family—you know—the kind that says they don’t want to move away for college and stay home. But I wanted more options for myself to do better than what they have right now. College will just give me a lot more. You know?”

Overall, the participants’ responses supported the idea of indebtedness to their parents and a desire for more in life—*for* their parents. They wanted to take advantage of what residence in this country means with regard to an education and financial independence.

### **Discrimination and The Student Experience**

Participants expressed the feeling of being judged by others because of their appearance, ethnicity, and/or lack of language proficiency, which impacted their high school experience. When asked if there was anything she wanted to share about high school that impacted her life, one participant explained, “I know some people, especially Mexicans, that have to just help themselves out but they are ashamed to ask for help. People discriminate you in high school, but I don’t care.” Another interviewee stated, “The schools should not discriminate and give them the same opportunities to everything... classes...chances...as the other kids.” One male participant explained how



he had been bullied in his rough, poor neighborhood when his mother left them, and he began to dress like a gangster after getting beaten up when he walked to elementary school. He stated, “I had to walk to school and was beat up because I looked chubby and a little Chinese...and if it wasn’t for my assistant principal taking care of me, I wouldn’t have made it through elementary.” He explained that the change in his appearance was so he “could survive,” but unfortunately, later in high school, teachers judged him and his academic abilities according to his appearance rather than his academic successes. When asked what encouraged him to reach his academic goals in high school, he mentioned that his family was from Mexico and then said, “I wanted to prove to all the people that really doubted me.” He later explained:

Teachers were pretty biased about how I looked. Even though I looked the way I was and I could stay quiet in the classroom. I remember one day one teacher asked us to write down what we didn’t understand, and I didn’t write anything down and she told me to leave the classroom, but I understood it all; that’s why I didn’t write anything down.

Two of the participants mentioned that they completed high school in one of the more affluent and academically rigorous high schools in CCISD. They felt they had been judged because of their backgrounds. Both participants were female, and each described instances of what the researcher has identified as discriminatory treatment on the campus.

One participant indicated that she was told by her English as a Second Language (ESL) teacher on her first day of class in an American school that she needed to stand up

for the pledge because the student was “here for free in this country,” and it was “disrespectful not to stand for the pledge.” The participant explained she did not know the ritual of the Pledge of Allegiance and how that day set the tone for how the teacher treated her throughout the year. She added that the same ESL teacher treated “the (other ethnicity) ESL students better” than the Mexicans in the class and helped them more often than the participant and her Hispanic peers. It was this graduate’s perception that the other ESL students who were not Hispanic “learned faster than the Mexicans,” and teachers didn’t want to take the time to help. She stated reluctantly:

Some of the Hispanic kids don't finish school because they don't get the support that other kids get. I don't know if I am right, but that's how I feel that way.

Kids like from India, you know, the ones that are always smart...the teachers only want to explain once...they don't want to be bothered with us. I noticed the priority with the kids from Japan and China compared to me and my friends from Mexico. Those kids were quick to understand stuff. We needed more samples or support and we didn't get it.

The second interviewee from the same affluent high school shared that when she would speak Spanish in the halls, many students would yell at her “speak English; you are in our country,” and how that was part of the reason she wanted to prove she could finish school. She stated, “I wanted to prove them all wrong” when asked what was the main factor that influenced her reaching her academic goals in high school.

One participant who graduated from a high school with the highest rate of low socioeconomic students and poorest academic campus performance shared a similar experience with a teacher from her first year in an American school:

I would not want to go through that again. The teacher was very...like...treated me badly. She didn't like me because people---Mexicans---only come here to take everything away from them. It was an ESL class, and she was the teacher. Nobody liked her and no one wanted to be in the class because of the way she was. But we had to take the class.

She explained that she just wanted to “prove to them” she could “make it.”

### ***Ganas: The Internal Desire***

In Spanish, the term *ganas* describes the deep internal desire to gain or achieve something. This type of desire is distinctly different from the extrinsic desire to achieve the American Dream. All participants exuded *ganas*—that internal fire in the belly—throughout each of the interviews. One participant, when asked what contributed to her success simply stated, “I am the reason why. I wanted it.” A male participant stated simply, “It’s pretty much just about you yourself taking advantage of everything they have to offer in high school.” Another male participant attributed several factors that led to his success but emphasized personal desire when he stated, “I would say especially personal. I mean I just didn’t want to slip up. I wanted to take advantage of all opportunities.” One young lady, after the formal interview, began to share how she was so proud that she was allowed to participate in the interview process. She explained how it was her second interview; the first interview was from a newspaper “up north” that

spotlighted the fact that she was the chief translator for a medical office that has provided the nation's highest rate of human papillomavirus (HPV) vaccine. She smiled, breathed a sigh, and grabbed her chest as she expressed pride in her role of informing the poor, Spanish-speaking patients of the importance of preventing cancer. She stated, "It feels so good to do good to explain in Spanish how to prevent cancer and then take the vaccine. Me. I did that." She further added:

If you want it, you can do it (*Si tu quieres si puedes*). I am an optimist. Always there is room to make it happen. High schools were the best years of my life. What I want them to know for other kids is that when kids come from other countries, many people want the opportunities here, but they don't take advantage those are from here. I would want them to have the same opportunities like me to make their lives better.

The valedictorian participant expressed an inner drive throughout his interview, explaining that from the onset of elementary school he was identified as gifted and understood the importance of success. He explained:

Pretty much from elementary I had the mindset of getting good grades, so when I got to high school, I was pretty much on the path to go on to college...pretty much from the beginning I got the mindset of pursuing an education. I did pretty well, and I didn't want to slip up.

### **Qualitative Data: Student Perceptions Regarding Transition to College**

The last research question addressed participant perceptions of factors contributing to transition or lack of transition into college. If the participant did not

attend college, the individual offered responses as to why he or she did not attend or remain in college. The questions related to the college experience are presented in Appendix B. The participant responses to the second set of questions resulted in three major themes with regard to transition or success in college: (a) support or lack of support from high school personnel, (b) financial challenges, and (c) high school course studies and their relevance to college level expectations.

### **Support or Lack of Support from High School Personnel**

Participant experiences consistently revealed a lapse in support from high school personnel when it came to preparing for high school graduation and college enrollment. All but one participant pointed out that they were not well-informed by personnel about what to expect in college and how to maneuver through the college application and enrollment processes. The one male participant who was pleased did point out that the support was mostly during his senior year and assistance took place mostly when he visited the counselor career center of his own accord. He stated:

Once I got to senior year, they definitely helped out with the whole career center. It was every day we were in there and they were like here is this scholarship and this scholarship. Like it got to a point they were all no keep doing them. It really helped out. I also remember all the college trips during high school. Going to a few and them showing you. I remember my junior year visiting A&M.

He added that he did not remember the regular counselor that he had for four years, but remembered his career counselor. He commented, "I don't remember the other

counselor at all, but I remember [her] in the career center. She would always be like here's another scholarship."

Interviewees who did not complete college shared perceptions regarding lack of support from school personnel. Participants expressed a sense of frustration regarding the faculty responsible for overseeing student diploma plans and high school course requirements for such plans.

One male participant shared his perception of having little guidance with ensuring the required credits for high school graduation were completed:

I think high school could be a little better if like you needed a class and counselors and stuff they could do a better job. Like my freshman year, I don't remember what class it was that I was missing, but I took AP Human Geography and that class made me miss another credit, and I kept having to bug them to fix it. It's like it felt like the counselors didn't want to fix it. When I would tell them I want a class changed, they would just say no we can't fix it and not bother. Lots of us just stopped caring and stopped asking and complaining. Like speech class, they made me pay for it myself. You need it to graduate, and they never put it in my schedule. They missed putting it in. They weren't going to let me graduate unless I paid for it. I had to pay \$200 for it which I had to go get a loan for to pay for the class in summer school. Health class. I needed it, but I didn't know. They never gave it to me. It wasn't my fault they missed it, and I had to pay for the class again. Freshman year they just give you a paper showing the classes you need. I mean they don't really help you. They just say here are

your course requirements. These are the classes you are going to get and that's it. They never explain it to you.

Interview participants expressed a variety of opinions regarding how effective campus personnel were at preparing them for college. For the most part, participants felt the college preparation process was addressed too late in their high school experience. They shared how, in hindsight, they realized they could have taken advantage of opportunities regarding college if they had just been more informed in high school.

One participant, a Distinguished diploma plan honor student from the top 10% of his class, expressed his disappointment with campus personnel not preparing him for the college application process early enough. He stated:

They also need to tell us earlier not like cramming everything in at the last minute and then getting mad at us when we do the same thing with our work-- like we are always in trouble for waiting until the last minute, but then they want to cram everything on us last semester. After we come back from Christmas break, it's all about colleges. Some of them have their early enrollment, so if we had known that some of us could have gotten into colleges that we missed the deadline for.

Another participant's response revealed a similar frustration with not being well-informed about the college enrollment process: "The meetings they had for college...college nights. But that was the only thing. They didn't tell us like... I was lost in college when I went." She further stated, "I didn't know what to do when I went. I think they need to try and give you more guidance. Maybe I wasn't paying attention, but

students who aren't from this country don't know how the system works.” She further explained:

They didn't really help at all. They don't even start helping you for college until senior year and not even first semester. They want to rush you all. If I had help freshmen year. You don't know what the college requirements are really are like. I did a lot on my own.

Another participant also mentioned that college preparation was not addressed until late senior year:

They don't start giving you things for college until really your senior year and not even the first semester. They want to rush you all when you have like a month left to finish everything for applications at the second semester. If I had known what was needed my freshman year, I could have had a chance to go to Harvard. There are a lot of scholarships out there. They don't tell us anything until senior year, and you don't know really what you need. I mean. I learned a lot just on my own.

This graduate, as well as all but one interview participant, indicated that school personnel not only lacked in assisting them to complete high school graduation requirements, but also in preparing them for postsecondary studies.

### **Financial Challenges**

Financial challenge was the primary reason for participants experiencing problems with transition and persistence in college. Only one participant did not mention financial troubles, but that participant (valedictorian) stated that the only reason



he chose the university he attended was because the school offered him a full scholarship. He explained:

As far as A&M, I mean it basically came down to just financial reasons. I mean I loved the school, but when it came to like logic, it was about the scholarships they gave me. It was just no one could top that. I just had to come here.”

He later added, “Also, dual credit meant less classes less hours I needed to pay for at Texas A&M. I didn’t have to take English, Economics, Government or History in college. Everyone I know that took them it helped them out financially when they went to college.”

The other four participants mentioned finances multiple times in the interview process. One participant, who waited tables for a living while attending junior college, explained that she struggled to finance college on her own. “It’s the money and the time. Because I work in the afternoons and mornings, so I always go late. I don't make much. They leave no tips. It’s all out of my pocket.” That same participant indicated that not having a social security number (immigrant status) prevented her from applying for grants which impacted her ability to proceed with college studies.

Another participant discussed her experience with the financial aid office at the junior college after the high school counselor mistakenly had her complete the wrong financial aid forms:

First of all, it (the problem) was the financial aid. Even if my dad works and pays for it-- but I don't want my dad to spend a lot of money there. It's hard.

And the financial aid office is rude. They just want the money from us and didn't want to help us.

One participant, in an effort to sum up one of the biggest challenges experienced with regard to transition into college, responded, “Money. Obviously. It would have helped if someone in high school had prepared me for that.”

### **High School Course Relevance to College Expectations**

Interview participants relayed varying views regarding the connection between what was learned in the high school instructional setting and what was expected of them in higher education. One male participant who felt pleased with what he learned in high school and how it applied to his college instruction was the valedictorian of the lowest socioeconomic high school. That participant pointed out that he took several AP and dual credit classes and was able to transition into college well. He stated, “I guess the AP work load got me ready for the heavier class load I got into at A&M. It definitely did prepare me for that.” He also pointed out:

Pretty much took since freshman year my first AP class. Then I just kept taking them. I never got any credit for the AP exams. But I guess that's kind of my fault too. We had the materials to study for the exam at the end for college credit, and I never got any college credit for AP until I took the Spanish AP exam, but it was my first language, so it was just easy. It did help out in College Station because I needed language credit. I did take dual credit classes starting my junior year, and that helped out in college. It saved me time and money for earned college credit.

The other male participant who did not express concern about the lack of relevance between high school and college instruction was a top 10% graduate who also participated in multiple advanced course studies. He stated, “On my SAT, I qualified to skip the first level basic college classes. I made a 600 on math, 550 on reading and a 530 on writing.” This same participant indicated that while instruction in college was not difficult, high school course studies lacked “real world application,” aside from his advanced mathematics studies.

The other three participants, however, indicated disappointment in their lack of preparation for college. These interviewees were required to take remedial course studies. One of them, who was a “hall of fame” student, National Honors Society member, and a graduate in the top 10% of her class, indicated that she had had to take remedial course studies in mathematics and reading. She stated, “I took advanced calculus in high school, but I still had to take remedial math.” The other two female participants graduated from the most affluent local high school, and both noted that they had not met TSI exemption and took remedial course studies in reading and mathematics. One commented, “Nothing really prepared me for college. They think that the SATs and ACTs (are) going to help you get into college, but they don't let you know... right now I am taking remedial classes and they don't help.” Her classmate added, “Honestly, I don't think the classes were helpful for college because in the end, I still had to take remedial classes.” The overarching impression from these participants was that high school did not academically prepare them for college and their current

struggles in college classes could be attributed to the inadequate understanding of English and mathematics content area courses.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

#### **Introduction**

For this Record of Study, the researcher examined the academic experiences of Hispanic first-in-the-family graduates in CCISD and how these individuals' academic performance in high school impacted their preparedness for high school graduation and postsecondary matriculation. The quantitative and qualitative data analyses revealed multiple trends in academic achievement and challenges. Statistical analyses of students' TAKS performance, diploma plans, and participation in advanced course studies, as well as an examination of those data through the lens of language proficiency and socioeconomic statuses, provided a detailed representation of how particular populations experienced learning in the high school setting. Interviews of five graduates whose student records were included in the quantitative data collection allowed for added context to the statistical outcomes. Their responses to interview questions provided a deeper understanding of first-in-the-family graduates' high school experiences and transition into the world of higher education.

#### **Summary of Findings**

The quantitative analyses of the first-in-the-family graduate academic data revealed specific patterns that were expected prior to the onset of the investigation as well as some patterns that were not expected. Findings involved the relationship between academic achievement and type of diploma plan, academic achievement and

advanced course participation, student demographics and TAKS performance, and student demographics and advanced course study participation.

### **Diploma Plans**

The researcher examined first-in-the-family Hispanic graduates' TAKS performance by type of diploma plan. The students were divided into two different categories: Distinguished Achievement Program (DAP) diploma plan students and Minimum and Recommended High School Program (MHSP and RHSP) diploma plan students. DAP students graduated under the Distinguished Achievement Program (DAP), which for the study's graduate cohort, was the most prestigious diploma plan that required the highest level of student performance and most often included completion of advanced college-level courses with a grade of 3.0 or higher.

The analysis of the sample population's diploma plans and TAKS performance data revealed a statistically significant difference between students who graduated under DAP diploma plan and those who graduated under MHSP/RHSP diploma plans on the basis of both Exit TAKS English language arts performance and Exit TAKS mathematics performance. DAP graduates outperformed their peers in both content areas. Exit TAKS English language arts scale score means for both DAP and MHSP/RHSP diploma plan students were higher than scale score means for Exit TAKS mathematics. The sample population, as a whole, performed better on the English language arts exam than on the mathematics exam, and there was a slightly less statistical difference between DAP and MHSP/RHSP students' scores on the Exit TAKS in mathematics.

## **Academic Achievement and English Language Proficiency**

The researcher sought to determine if there was a difference in Exit TAKS performance and participation in advanced course studies by English language proficiency. The two populations investigated for this analysis were categorized as English language learners (ELL) and those graduates who were non-ELL during their high school career.

There was a statistically significant difference in Exit TAKS English language arts performance by language proficiency and no statistically significant difference in Exit TAKS mathematics performance. Non-ELL student performance on both Exit TAKS exams was better than ELL students but CIs and effect sizes helped to determine the level of improvement was not substantial in the area of mathematics.

The difference in AP ELA participation by language proficiency was not statistically significant, although non-ELL students did participate slightly more frequently than their counterparts. AP mathematics participation was low across the entire first-in-family population and a statistical analysis could not be completed. There were slightly more non-ELLs participating in AP mathematics than ELLs, but the difference was not substantial. The gap between ELL and non-ELL students who took AP mathematics was smaller in math than in AP English language arts.

Dual credit course participation was also examined in order to determine if there was a difference in participation by language proficiency. Statistical analysis could not be performed because sample sizes for ELL populations were too small to make comparisons.

## **Academic Achievement and Socioeconomic Status**

The researcher also explored the difference in academic achievement based on students' socioeconomic status (SES). The investigation involved an analysis of TAKS performance and advanced course study participation by socioeconomic status.

There was no statistical significant difference between low SES and non-low SES students in both English language arts and mathematics Exit TAKS. Mean scores for Exit TAKS English language arts, however, were higher than Exit TAKS mathematics scores for both low SES and non-low SES students. Low SES students also performed lower than non-low SES students in both English language arts and mathematics exams.

The examination of Advanced Placement course participation by socioeconomic status indicated there was no statistically significant difference between low-SES and non-low SES in AP ELA. AP mathematics course participation for both student populations was lower than participation in AP ELA, but statistical analysis could not be performed for AP mathematics because there was such a small sample size.

The investigation of dual credit course participation revealed that there were no statistically significant differences by socioeconomic status in English language arts course studies. Non-low SES students participated in dual credit English language arts less frequently than low SES students but also only slightly. Dual credit mathematics, however, had such small numbers in participation that no comparison could be made by socioeconomic status.



## **Texas Success Initiative (TSI) Exemption and Advanced Course Studies**

The researcher also considered TSI exemptions because part of the research involved seeking out information regarding college readiness. The TSI exam is an assessment used by colleges to determine if a potential student is academically prepared to participate in standard college course studies. The current study identified the students who were TSI exempt because of their Exit TAKS English language arts and mathematics performance and determined if there was a statistically significant difference in achieving TSI exemption status between those who took advanced course studies and those who did not.

There was no statistically significant difference in AP English participation by TSI English language arts exemption status. While there was a distinct difference in the number of TSI exempt versus non-exempt students who earned AP credits, the average number of credits earned per group was not much different. Dual credit course participation data was pulled in an effort to determine if there was a difference in TSI English language arts exemption status, but no students were available to analyze under the category of TSI non-exempt under this course category.

An investigation of AP mathematics participation by TSI mathematics exemption revealed there was no statistically significant difference.. While TSI exempt students were more likely to participate in AP mathematics courses, AP mathematics participation across all first-in-the-family graduates was very low. Dual credit mathematics could not be analyzed for the same reason as dual credit English language arts. Because dual credit mathematics requires high performance on Exit TAKS

mathematics exam or high performance on TSI exam for college enrollment, no student data was available to make a comparison between exempt and non-exempt students.

### **Interviews**

The current Record of Study's qualitative data was used by the researcher to reveal information regarding students' perceptions about the high school experience and its impact on preparedness for college. This investigation utilized academic variables such as diploma plan, advanced course participation, Exit TAKS performance, and TSI exemptions because such factors are what public education considers to be helpful in determining if a student is college ready. Most local educators do not know how accurate these factors are at determining if a graduate will succeed in college because school districts rarely survey former students. This was the reason for researcher's qualitative data collection. First-in-the-family graduates who responded to the invitation to participate in the interview process provided intimate accounts of their high school experiences and transition into higher education, including reflections about what helped prepare them for college while in high school and what factors impeded successful transition into college. The responses to the interview questions revealed who transitioned into college successfully and who did not.

All but one interview participant expressed frustration and significant struggles when transitioning into the college experience. The interview participants' challenges were both academic and financial. Academically, three of the interview participants expressed concern that the academic knowledge they acquired in high school did not prepare them for college. One of the three was a top 10 % high school student who

graduated with honors, and she still did not earn the Exit TAKS TSI exemption and had to take remedial course studies in English and mathematics. The other two who are currently struggling academically in college have yet to move on to standard English and mathematics course studies because of their lack of skills in both content areas.

With regard to financial challenges, four of the interview participants shared a dismal view of completing college studies mainly because of financial limitations. They all came from poor families and expressed frustration with high school personnel for not showing them the necessary steps needed to secure financial assistance. Three of these four were not American citizens and therefore would not qualify for federal grants or loans. The sole interview participant who did not experience financial burden when transitioning into college graduated from Texas A&M University this spring and credits that achievement in part to the full scholarship he earned. He was the only participant who expressed satisfaction with how the high school counselor prepared him for college, and he was an exceptional achiever on the campus.

### **Implications of the Findings**

The current Record of Study's findings provide information about a specific population of students: Hispanic first-in-the-family graduates. Information discovered about this particular population's academic experiences allows educators to determine how effective local campuses are at ensuring success for all students. Course studies, diploma plans, and TAKS test performance were analyzed with English language learner and socioeconomic statuses considered for those categories.

One expectation that was proven involved Distinguished Achievement Program (DAP) diploma graduates and their TAKS scores. Graduates who earned the highest level of diploma (DAP) performed better on Exit TAKS than students who did not graduate DAP. Distinguished Achievement Program graduates are high achievers because in order to earn a DAP diploma, they must earn course credit in the most rigorous curriculum. Participation in such curriculum is likely to have impacted state exam performance.

Another outcome was lack of advanced course participation for most first-in-the-family Hispanic graduates. ELL populations especially lacked participation in Advanced Placement coursework. Dual Credit mathematics lacked participation regardless of English proficiency or socioeconomic status. While one would have the tendency to deduce that the local district is providing equal opportunities for advanced course studies to all students regardless of language proficiency or family income level, interview participants who were English language learners and also identified as low SES but attended the most poorest area neighborhood school indicated more participation in advanced course studies than the participants who were English language learners and low SES but attended the more affluent neighborhood school.

### **Recommendations**

The researcher has revealed a need for district personnel to further examine local students' academic experiences, especially the experiences of students who are ELL and/or low SES. Closing the achievement gap between high achievers and those students at risk of not succeeding in high school and beyond requires strategic efforts to

improve advanced course studies instruction, access to such classes, and build upon future high school graduates' college preparedness. High school campuses should be encouraged to put into place a more strategic method of earlier recruiting for advanced course participation from English language learners and low socioeconomic status students. As a whole, first-in-the-family graduates do not participate in advanced academics. Interviews indicated graduate frustration with not having support or guidance with regard to the importance of high school course selections and the steps needed to enroll successfully in college. Therefore, another recommendation is to identify first-in-the-family students not at the point of graduation, but perhaps the beginning of high school so that this particularly at-risk population could be mentored throughout their high school experience.

### **Advanced Course Participation and Assessment Performance**

As it pertains to state assessment performance, because a significant number of Distinguished diploma students and advanced course participants did not perform significantly higher than students who graduated with a less rigorous instructional experience, the quality of advanced course studies should be examined. The local district has historically been challenged with low AP exam performance, which adds to the concern that the instruction is lacking, but the results from the current Record of Study indicate that further examination of what is being taught and how it impacts performance on state and national assessments such as the AP exam is necessary. In recent years, local policy has prompted campuses to push for more AP course students to take the AP exams at the end of their course study. In the poorest neighborhoods, the

local district pays for the students' exam fees to ensure more students register and participate. The district's perception of students' low AP exam performance as a whole has been that the low scores have been a result of the increased number of low socioeconomic students taking the exam. Other districts with similar demographics perform quite well on the AP exams, as well as state assessments, so the argument of income as the reason for poor performance is weak. It is the quality of local advanced course instruction and AP exam performance that should be examined in depth.

### **Access to Advanced Course Studies**

The current Record of Study revealed that first-in-the-family graduates in this study did participate in advanced course studies but minimally. The local district should examine the efforts that local high schools in poorer neighborhoods are making to encourage at-risk students to participate more frequently in such classes. Interview participants from the poorer neighborhoods mentioned being given the opportunity to participate in AP and dual credit classes, while participants from the wealthiest campus described their perceptions regarding counselor concerns that the rigor would be too rigorous for them. The five interview participants were ELL and low SES students with two who did not participate in advanced course studies. The valedictorian of the high school in the poorest local neighborhood credits his advanced course participation for saving him money when he attended Texas A&M University and did not have the academic challenges in college as the other four interview participants indicated experiencing. While there were five interview participants, based on what their responses indicated, it would be advantageous for school personnel to place a more

robust effort in scheduling students with similar demographic backgrounds as the interview participants in advanced course studies regardless of ELL or SES status.

### **Building Background Knowledge for the College Experience**

Based on the interview participants' reflections, the local district should evaluate the methods and practices of preparing students for the instructional and financial expectations of higher education. Such high school personnel efforts need to be strategically provided to a wider population of students and not just those who show easily recognizable academic success such as the study's valedictorian interviewee. Surveying students earlier than their senior year would allow campus personnel to identify which students are most in need of guidance regarding academic and financial requirements for admission into and persistence in college.

### **Advanced Placement Exam Performance**

The Record of Study's researcher investigated participation in Advanced Placement (AP) course study, but AP exams were not examined. Advanced Placement exams are provided by College Board for the purpose of earning college credit. It would be worth future investigation to examine AP exam performance to determine the quality of the instruction in such types of advance course studies

### **Limitations**

The researcher utilized a mixed method for the study, with data collection involving both quantitative and qualitative processes. The quantitative data collected and analyzed was substantial ( $N = 205$  student records). The qualitative data collection

goal at the onset of the study was to involve 30 interview participants in order to identify information-rich cases about the first-in-the-family Hispanic graduate (Seidman, 2013).

Patton described the importance of purposeful sampling, where the researcher strategically selects cases to shape a specific information-rich group for investigation (Patton, 2015). The outcome from the Record of Study, however, involved a small number of interview participants. Five former students accepted the invitation to participate. The size of the sample impacted the outcome of the study.

The sampling method was convenience sampling due to the limitations of access to willing participants during the timespan of the Record of Study. The researcher was limited to contacting the potential interview participants by traditional postal mail by means of the formal residence while in high school. Because students are historically mobile after graduation, it is likely the invitations did not reach all potential participants. Out of those who did receive the invitation, it is also likely there was reluctance to participate because the focus population included graduates whose families did not have U.S. citizenship. It is highly likely that fear of personal information disclosure was a crucial factor contributing to the lack of response to the invitation.

While the five interview participants did provide an understanding about their personal learning experiences while in high school and during their transition into higher learning, five first-hand perspectives did not represent a thorough picture. A more substantial sample population for the qualitative component of the study could have produced a more comprehensive picture of the first-in-the-family Hispanic student experience.



## **Conclusion**

This Record of Study examined Hispanic students who were first in the family to graduate high school in CCISD. Student academic achievements such as diploma plans, state assessment performance, and advanced course participation were examined, as well as student perceptions regarding academic achievement in high school and its possible impact on college matriculation. While the study revealed students with a more rigorous diploma plan tended to perform better on the state exams and did participate in advanced course studies, there was still a limited representation of first in the family Hispanic students in advanced coursework. Participating former students also perceived a lapse in support with regard to preparation for college. Further investigation on the topic of first in the family students would empower stakeholders with the knowledge necessary to make critical decisions about how to serve future students at risk of not completing high school and future students who struggle with the skills needed to reach and persist in postsecondary studies.

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APPENDIX A  
DATA COLLECTION LOG

Date	Setting	Objective	Contact	Activity	Participants
6/16/16	Online	Student Data File	District File	Download/Save	Garcia
6/20/16	Local (Corpus Christi)	First Interview	Participant 1	Interview	Garcia and Participant 1
6/20/16	Local (Corpus Christi)	Second Interview	Participant 2	Interview	Garcia and Participant 2
7/1/16	Local (Corpus Christi)	Third Interview	Participant 3	Interview	Garcia and Participant 3
7/5/16	Local (Corpus Christi)	Fourth Interview	Participant 4	Interview	Garcia and Participant 4
7/5/16	Local (Corpus Christi)	Fifth Interview	Participant 5	Interview	Garcia and Participant 5



## APPENDIX B

### STUDENT PARTICIPANT SCRIPT AND INTERVIEW QUESTIONS

**Interviewer: “This interview is designed as an effort to explore your student experience while in high school. I will be asking pre-determined questions.”**

1. You were identified as the first in your family to graduate high school. What level of education did your parents complete? Your grandparents? If you have siblings, how many do you have, and where do you rank in order of birth?
2. Why do you think you are the first in your family to graduate high school?
3. What were your academic goals in high school?
4. What is the main factor that influenced you reaching your academic goals?
5. Did you participate in advanced course studies such as Advanced Placement or dual credit? Why or why not?
6. How well do you believe your advanced courses prepared you for college or for the job market?
7. Describe what learning was like in high school.
  - a. Was it a positive or negative experience?
  - b. Were you interested in what you studied, or did it not interest you?
  - c. Can you give an example of a time your course studies produced an exceptionally positive or negative experience?
8. What from high school has contributed to you being prepared or not prepared for work or college?
9. Do you plan to attend college, or are you currently attending college? What factors have contributed to your enrollment into college or your decision not to enroll?

**Interviewer: “Are you currently attending college or have you attended college after high school graduation?” (If so, the following questions will also be asked):**

10. If you are attending college, have you been asked to enroll in remediation/developmental courses? In what subject areas?
11. If you are attending college, were you able to skip taking specific college classes because you earned credit from high school Advanced Placement exam performance or dual credit class participation?
  - a. If you did get to skip taking specific college classes because you earned credit from AP exams or dual credit classes, how many courses were you able to gain credit for before enrolling in college?

- b. Under what subject areas did you get to skip the basic course studies in college are those courses?
- 12. If you are attending college, what is your approximate grade point average?
- 13. If you are currently enrolled in college, what factors have contributed to your success in college?
- 14. What factors have contributed to your struggles in college?

**As the interview concludes, the following questions will be asked in an effort to provide opportunity for the participant to enhance the interviewer's understanding of the student experience:**

- 15. Is there anything you would like to share with me regarding your high school experience and how it impacted your life?
- 16. Is there anything I have not asked you today that you would like me to include in this study?