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THE EFFECTS OF DEMOGRAPHIC AND SCHOOL-RELATED FACTORS ON ACADEMIC DISTINCTIONS OF SECONDARY SCHOOLS

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education in the Graduate School of Texas Southern University

By

Kourtney Hines, B.S., M.Ed.

Texas Southern University

2024

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THE EFFECTS OF DEMOGRAPHIC AND SCHOOL-RELATED FACTORS ON ACADEMIC DISTINCTIONS OF SECONDARY SCHOOLS

By

Kourtney Hines, B.S., M.Ed.

Texas Southern University, 2024

Professor James Cunningham, Ph.D., Advisor

Abstract

The purpose of this correlational study is to determine the nature of the relationship between school and demographic factors and student achievement using data from the individual schools reported by a school district in Northern Texas. Answers to the following questions were sought: Do the teacher demographic factors (years of experience, gender, ethnicity, degree held) have a significant impact on the student achievement on the English I and II STAAR exam? Do the school-related factors (size of school, attendance, average class size) have a significant impact on student achievement on the English I and II STAAR exam? In this study a comprehensive analysis was conducted using Binary Logic Regression to examine the relationship between various teacher and school-related factors and student performance on the English 1 and English 2 STAAR tests. The research focused on understanding how teacher gender, years of experience, racial demographics, and level of education, along with school-related factors like class size, school size, and attendance, influence student achievement. Results indicated that most of these factors, including teacher gender, race, education level, class size, and school size, did not exhibit a statistically significant relationship with student performance on the STAAR tests, as evidenced by high p-values and low R^2 values.

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2001.....Bachelor of Arts
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Thank you, Dr. Bloom, for being the spark in my darkness that kept me going until the very end. From the first day I sat in your class to the day I defended my dissertation I have felt like you truly care about me, and love me, and I am so happy I started and finished with you in my corner.

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Dr. Davis, I would like to think, after the many weekends we have worked together over the years, that I am somewhat statistically savvy and that I can speak the language so people will know I truly know my stuff and earned this doctorate. Thank you from the bottom of my heart.

Dr. Samples thank you for being on my committee and asking the questions that really made me think and reflect on the impact I can have on the path of education and on the future. I am a lifelong learner and I appreciate that you are as well.

Dedication

This paper is dedicated to my family. To my Daddy, and my siblings. To my Grandparents, Aunts, Uncles, and my Cousins. I am everything I am because of the blood bound role models in my life. I've only been raised to believe I can be excellent. To my guardian angels who walk with me every day: I pray I have made you proud, and I know you are watching, loving, and supporting me from above. I'm sorry it took so long, but I said I would finish, and I did. I love you and miss you Mom and Grandma.

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I dedicate this paper to all my students who saw me working on my course work and would tell me how proud they were of ME, because they knew if I could do it, they could do it.

When I began this program, I remember being asked by Dr. Cunningham to think back to when we had our first Black teacher. It was a question that I had never been asked or thought about, and when I realized my first wasn't until my undergraduate degree, I committed to being a memorable Black educator for every student and teacher I encountered over the years. This doctorate degree is just a step in the staircase of milestones I intend on accomplishing, and I dedicate this paper to my past, present, and future self.

I did it. We did it.

Thank you all. I love you.

CHAPTER 1: INTRODUCTION

The foundation for all education begins with teachers. Whether those teachers are our parents, extended family, or professionals, learning must occur, and we are taught how to learn. The better the teachers, the better the received education. The factors that determine the effectiveness of a teacher are not all quantitative in nature. Student's success has a number assigned to it and it is the education system's job to assess if learning and growth are occurring.

The completion of a grade school education is required in the United States of America. Students typically attend a kindergarten through twelfth grade program with the option to continue in the military, college, or a career. There are thousands of schools to choose from and a deciding factor for where parents choose to send their students, given the option, is the quality of the school district. Factors that impact the quality of a school district include, but are not limited to, the income level of the families in the area, the tax rates of businesses that are contributing to the schools, and the quality of the community. Then, when examining the school's level of rigor of the curriculum, required assessments, teacher quality, family and community support, school leadership form and organizational structure and available resources need to be evaluated. (National High School Center, 2008)

The most defining element of a successful school is its teachers as measured by how they are recruited and interviewed by administrators, which makes the administration the first identifier of a quality teacher. Principals' influences on student learning outcomes are often indirect, mediated through multiple factors within the school. Researchers have produced

extensive evidence that principals' practices can influence student learning when they focus on (a) organizing school structures, processes, and resources that support student learning and (b) strategies that more closely support teachers' high-quality instruction (Hallinger & Heck, 1996; Heck & Hallinger, 2009; Supovitz et al., 2010; Louis et al., 2010; Horng et al., 2010; Sebastian & Allensworth, 2012).

In Texas, schools are rated and ranked based upon standards and domains that are calculated through the Texas Education Agency Campus findings. This is a guide for parents on their school choices and is a factor in where teachers decide they want to work. The campus rankings are compiled to give a district ranking. So, if a school is effective based upon the teachers they employ and the curriculum being delivered, the expectation is that graduating students were adequately prepared for the waiting world. Additionally, the TEA awarded schools distinctions in four areas: English Language Arts, Math, Science, and Social Studies.

The Texas Academic Performance Report includes performance information broken down by student groups, ethnicity, socioeconomic status, and demographic information about both students and staff. When reviewing this data and comparing ratings one of the demographic qualities that is identified is the length of careers for both the administrators and the teachers. Both can be broken into novice or veteran status. Additionally, the size of the school, percentage of student attendance, gender of the teacher, ethnicity, degree held and average class size when compared all have an impact on student achievement.

Problem Statement

In addressing the relationship between school and teacher demographic factors and student achievement in state-mandated testing, this study embarked on an exploratory journey,

delving into the various elements that might influence the success of students in the State of Texas Assessment of Academic Readiness (STAAR) exams. The study aligned with the work of Jhamb & Kumar (2021) and Sorensen & Ladd (2020), who emphasized the importance of teacher experience in student success on state testing. Further, this research sought to unravel the complexities in how demographic attributes such as teacher gender, ethnicity, and educational level might impact student performance in secondary schools. The influence of teacher gender on student outcomes, as discussed by Gong et al. (2018) and Carlana (2019), suggested a notable difference in academic and noncognitive outcomes between genders.

The significance of teacher education, as highlighted by Fischer (2018) and Chang et al. (2020), pointed to a nuanced relationship between teacher qualifications and student achievement, particularly in secondary education settings. The study also contemplated the role of school-related factors like class size and attendance, building on the findings of Tahir et al. (2021), Bartanen (2020), and Liu & Loeb (2021), who have established the critical nature of these factors in student success. In essence, this study aimed to bridge the gap in the literature regarding the specific influences of school and teacher demographics on student achievement in Texas' secondary education system, thereby contributing to the broader understanding of educational excellence and equity (Jhamb & Kumar, 2021; Sorensen & Ladd, 2020; Gong et al., 2018; Carlana, 2019; Fischer, 2018; Chang et al., 2020; Tahir et al., 2021; Bartanen, 2020; Liu & Loeb, 2021).

Purpose Statement

The purpose of this correlational study was to determine the nature of the relationship between school and demographic factors and student achievement using data from the individual school’s report from an independent school district in North Texas. More specifically, this study

focused on school-related factors (the years of experience of the classroom teacher, size of the school's student body, rates of student attendance), and demographic-related factors for the teachers (gender, ethnicity, level of degree held, average class size) on the awarding of Reading Distinctions as concluded by the State of Texas Assessment of Academic Readiness (STAAR) examination in secondary schools. Answers to the following questions were sought:

1. Do the teachers' demographic factors (years of experience, gender, ethnicity, degree held) have a significant impact on the student achievement on the English I STAAR exam?
2. Do the teachers' demographic factors (years of experience, gender, ethnicity, degree held) have a significant impact on the student achievement on the English II STAAR exam?
3. Do the school-related factors (size of school, attendance, average class size) have a significant impact on student achievement on the English I STAAR exam?
4. Do the school-related factors (size of school, attendance, average class size) have a significant impact on student achievement on the English II STAAR exam?

Significance of the Study

This study was significant as it contributed empirically to the understanding of teachers' impact and their relationship with the earning of academic distinctions in secondary schools. Referencing Jhamb and Kumar (2021) and Sorensen and Ladd (2020), it investigates the complex dynamics between teacher experience and student success in state testing, particularly in relation to earning an English Language Arts (ELA) academic distinction. This correlation study was essential in determining the relationship between various school and teacher

demographic factors such as the teacher's years of experience, the size of the student body, student attendance rates, and teacher demographics (gender, ethnicity, level of degree held, and average class size) and their influence on the awarding of Reading Distinctions as measured by the State of Texas Assessment of Academic Readiness (STAAR) examination in secondary schools.

Furthermore, the study aligns with the findings of Gong et al. (2018), who highlighted the positive effects of having a female teacher on girls' academic and noncognitive outcomes, notably outperforming boys in state-mandated testing. This insight underscores the importance of gender dynamics in teaching and how it can foster a sense of belonging and reduce disruptive behavior among students. Additionally, Chang et al. (2020) and Giersch & Dong (2018) have shown the mixed effects of teachers with advanced degrees on student achievement, indicating a complex relationship that varies across educational levels and subjects. The current study extends these findings by examining how teachers' advanced degrees impact student performance on state-mandated assessments, contributing to a nuanced understanding of the interplay between teacher qualifications and student academic success.

Statement of Hypotheses

The following research hypotheses were formulated for the present investigation:

H_1: There is a statistically significant predictable relationship between teachers' demographic factors (years of experience, gender, ethnicity, degree held) and ELA academic distinction status in English I.

H_2: There is a statistically significant predictable relationship between teachers' demographic factors (years of experience, gender, ethnicity, degree held) and ELA academic distinction status in English II.

H_3: There is a statistically significant predictable relationship among school-related factors (size of school, attendance, average class size) and ELA academic distinction status in English I.

H_4: There is a statistically significant predictable relationship among school-related factors (size of school, attendance, average class size) and ELA academic distinction status in English II.

Assumptions

In the conduct of this research, several foundational assumptions were made to ensure the integrity and validity of the study's conclusions. First, it was assumed that the Texas Education Agency (TEA) would provide accurate and reliable data. This assumption was crucial as the data provided by the TEA forms the backbone of the analysis and any inaccuracies in this data could significantly skew the study's findings. Second, it was presumed that the State of Texas Assessments of Academic Readiness (STAAR) test, a pivotal element in this study, had been validated by the TEA. The validation of the STAAR test was essential to confirm that it accurately measured what it was intended to, thereby ensuring the validity of any conclusions drawn about student achievement and teacher effectiveness based on these test results.

Third, the study assumed that the STAAR test had been analyzed for reliability by the TEA. The reliability of the STAAR test is critical in ensuring that the test results are consistent over time and that any changes in student performance are due to actual changes in student learning and not due to inconsistencies in the test itself. Finally, the research operated under the assumption that students did not engage in cheating during the STAAR test administration. The integrity of the test results is paramount, as cheating would undermine the validity of the data

and thus the study's findings. These assumptions were vital for the research as they underpin the entire analysis, ensuring the robustness and credibility of the study's conclusions.

Limitations and Delimitations

In the realm of educational research, acknowledging the limitations and delimitations of a study is crucial for contextualizing its findings. Limitations, as outlined in this study, refer to the inherent flaws or shortcomings that might affect the research outcomes. These can stem from various sources, including but not limited to, unavailability of resources, small sample sizes, or flawed methodologies. The researcher did not identify any such limitations.

On the other hand, delimitations are intentional choices made by the researcher to define and limit the scope of the study. In this particular research, the study was delimited to high schools in Texas. This geographical delimitation was a strategic decision, focusing the study on a specific educational context, which can have unique characteristics and challenges relevant to the research objectives. Such delimitations are essential for maintaining a focused and manageable scope, ensuring that the study remains grounded in a specific context, which in turn aids in the clarity and applicability of its findings. However, it was important to recognize that while delimitations help in defining the scope of the study, they also limit the generalizability of the findings to other contexts or regions.

Definitions of Factors/Terms

Attendance. Average daily attendance used for funding of the school by the state. Schools in Texas and most states are funded based on average daily student attendance. Because of this, attendance is tracked and documented carefully.

Class Size. The average amount of students in a classroom per teacher is noted as the class size.

Distinguished. Distinguished is a designation awarded to a school by the TEA when the school scores at a high level on the STAAR assessment.

Gender. The state of Texas tracks the gender of teachers that are on staff at the school. This was denoted in this study as male or female.

Level of Education. The report shows how many teachers have bachelor's degrees, master's degrees, and doctoral degrees.

Ethnicity. For this study, ethnicity was described as White, Black, Hispanic, Asian, Native American, or other.

Size of School. The size of the school refers to how many students are in membership at a given campus. The size of the school is related to the total number of students in membership at the school (NCES, n.d.).

STAAR. State of Texas assessments of academic readiness which were used in this study to measure student success.

State Mandated Testing. In Texas, where this study was conducted, the state mandated test is the STAAR assessment.

Student Achievement. For the purposes of this study student achievement were measured by the students score on the STAAR assessment.

Years of Experience. The report displays the average years of experience from four categories: 1-5, 6-10, 11-20, 21-30, 31+.

Organization of Study

Chapter 1 of the dissertation sets the foundational stage for the study, encompassing key elements such as the introduction, problem statement, significance, assumptions, and the organizational framework of the study. It begins by outlining the primary issue under

investigation, focusing on the effects of demographic and school-related factors on academic distinctions in secondary schools. The significance of the study was emphasized, highlighting its potential to contribute empirically to the understanding of the impact of teachers and various factors on the earning of academic distinctions in secondary schools. Assumptions underpinning the research are also stated, ensuring a clear understanding of the foundational premises of the study.

The chapter further delineates the structure of the entire dissertation. Following Chapter 1, Chapter 2 delves into a literature review, providing an in-depth examination of existing research and theories relevant to the study's focus. Chapter 3 was dedicated to outlining the methods and procedures for data collection and analysis, establishing the empirical basis of the research. Chapter 4 presents the results derived from the data analysis, offering insights and findings pertinent to the research questions. Finally, Chapter 5 discusses these results, placing them within the broader context of the field, and drawing conclusions based on the evidence gathered. This organizational structure ensured a systematic and logical progression of the research, allowing for a comprehensive exploration of the topic.

CHAPTER 2: LITERATURE REVIEW

The purpose of this correlational study was to determine the nature of the relationship between school and demographic factors and student achievement on the STAAR exam to earning the ELA Academic Distinction after using data from an independent school district in North Texas. That is, the study examines the relationship between (x) school and demographic factors and student achievement on the STAAR exam on the one hand, and (y) earning ELA Academic Distinction on the other hand. It is not known specifically what school and teacher demographic factors are related to student success on state mandated testing. Learning does not belong to the students until they earn it through work that makes things of value and importance in cooperation with other students and citizens. (Hartoonian, 1996). If the purpose of school is to learn, and assessments are intended to determine if learning is occurring, the most highly equipped individuals should oversee the instruction that results in valuable learning. If administrators could identify the traits and factors that would garner success, and place those individuals where they are most impactful, we, as a nation, could begin to close the chasm of educational knowledge that spans our country, states, cities, and towns.

In effective schools, these components of what it takes to be an effective teacher are woven into the school's organizational fabric to create internally consistent and mutually reinforcing reforms; their success is explained by more than the simple sum of their parts. (Preston et al., 2017). This gap could be closed purposefully, and our students would have the best tools and teachers present to make up for the losses in learning that keep resulting. In this chapter the literature related to the purpose of this study was reviewed based on the factors identified in Chapter 1. The historical background was presented, followed by an identification

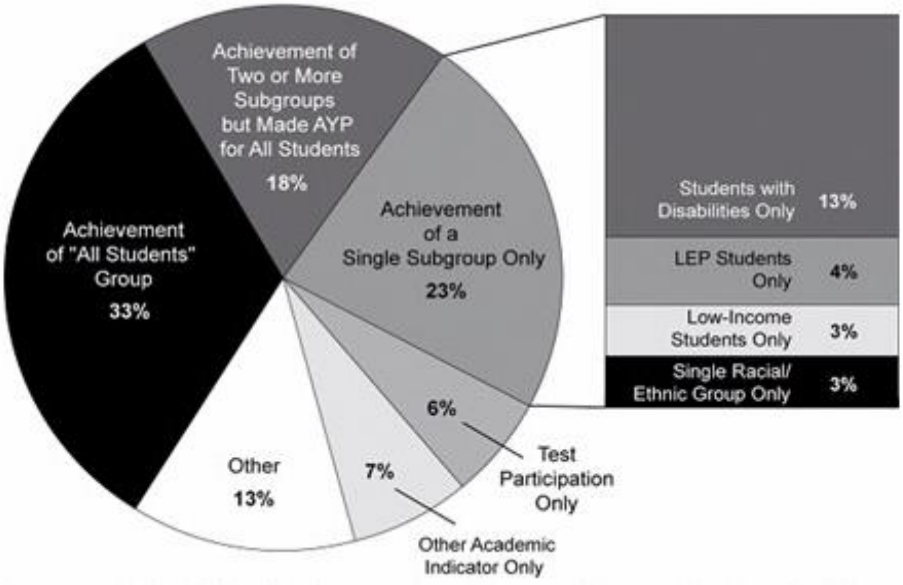
of the theoretical framework, and a discussion of the Literature related to the factors are discussed.

The Background of the Problem

Demographic attributes of schools did not become a concern for local education agencies until No Child Left Behind (NCLB) legislation was passed. The stated goal of NCLB was, "To close the achievement gap with accountability, flexibility, and choice, so that no child is left behind" (NCLB., 2002, p.1). Schools were required to achieve in all demographics that met certain statistical thresholds. If a school did not achieve adequate yearly progress (AYP) in all demographics it was accountable for, the school would be threatened with sanctions and given a low rating that was publicly communicated (NCLB., 2002).

Figure 1.

Reasons schools missed AYP



Source: U.S. Department of Education. 2019

Figure 1 illustrates the breakdown of reasons why schools did not meet Adequate Yearly Progress (AYP), as reported by the U.S. Department of Education in 2019. The majority, representing a third of the reasons, is attributed to the "Achievement of 'All Students' Group," signifying that the overall student performance was the primary issue in these cases. Schools also missed AYP due to the "Achievement of a Single Subgroup Only," accounting for 23%, and "Achievement of Two or More Subgroups but Made AYP for All Students," making up 18%. Notably, "Students with Disabilities Only" was a factor in 13% of the schools not making AYP. Lesser reasons include "Limited English Proficient (LEP) Students Only" at 4%, "Low-Income Students Only" at 3%, and "Single Racial/Ethnic Group Only" also at 3%. The category "Other" encompasses 13% of the reasons, which may include a variety of factors not explicitly stated. Smaller percentages are noted for reasons such as "Test Participation Only" at 6% and "Other Academic Indicator Only" at 7%. These data points collectively present a complex picture of the challenges schools face in achieving federally mandated progress goals.

If a school missed AYP for 2 years in a row the school was moved to a status called school improvement (NCLB., 2002). If a school was designated as a school in need of improvement, federal funds were allocated to the school to help the school get out of school improvement by achieving AYP (NCLB., 2002). Although the time a school could be in school improvement varied between states and communities, if a school was in school improvement for seven years the school would be closed (NCLB., 2002). Some local education agencies got around this requirement by simply firing the school leadership and renaming the school or making it a public charter school. NCLB was a powerful law that could warrant overturning the

results of a school board election and appointing managers from the community to serve as trustees for a period of time. Many times, a new superintendent would be appointed as well. Taking the decisions out of the hands of the local government was unpopular and highly controversial. Several school districts were closed and absorbed by larger school districts all over the United States.

In 1993 the Texas legislature mandated that an accountability system be put in place for public schools and a data driven tool was needed to assess if what was being taught was being done effectively. (TEA, 2008) The result was the STAAR test which was created from the state mandated curriculums and is a statewide assessment. The assessment in use prior to the STAAR in Texas was called the Texas Assessment of Knowledge and Skills (TAKS). This system was used until 2011. Then, in 2019 House Bill 3 was passed which modified the accountability requirements to include postsecondary readiness. The focus shifted from students performing well in the local schools to include determination of whether they are being taught with enough rigor to have success in a collegiate setting. These scores were not assigned ratings until 2012 using the State of Texas Assessments of Academic Readiness program. (STAAR) Then, with the passing of House Bill 5 in 2013 additional indicators of postsecondary readiness were added to align the expectations of Texas schools with trends seen in other states. The intended goals were to improve student achievement in core subjects, ensure all students are progressing towards achieving advanced academic performance, closing the learning gaps, and rewarding excellence based on other indicators in addition to state assessment results. Education was expanding to embrace the idea that academic success and growth is not limited to just a test score, and Texas was keeping pace with data aligned with their state curriculum.

Theoretical Framework

Elger (2007) conducted seminal research on the Theory of Performance. According to Elger, the Theory of Performance combines six concepts to analyze and maximize how to increase performance and increase favorable output. (Elger, 2007) With this definition performance means to produce valued results and can be an individual or a group of people who are collectively engaged in a collaborative effort to increase desired results. As it applies to this study, the Theory of Performance analyzed the factors of years of experience of a teacher, size of a secondary school, attendance rate of students, gender of a teacher, ethnicity of a teacher, and level of degree held by a teacher to see how they contribute to the earning of distinctions on a secondary campus. Elger says the theory can be separated into components that holistically interact to establish the levels of performance. The levels are identity, skills, knowledge, context of performance, personal factors, and fixed factors (see Figure 1). As applicable by the factors of this study, comparisons between the level of skills, knowledge, and identity were measured by the years of experience of a teacher and the level of degrees he or she possess. The context of performance was assessed with the size of the school, and the attendance rate of the students. Personal factors that can be impacted by life situations were attendance levels of teachers and students. Fixed factors are the gender and ethnicity of teachers. The text states the level of performance of an individual or an organization depends on the components (Elger, 2007).

Figure 2 *Performance Areas and Examples of Performance (Elger, 2007, p.12)*

Performance Area	Primary Domain	Examples
Designing	Cognitive	• Re-designing automobiles for fuel efficiently • Writing an original song or composition for an orchestra • Creating an integrated and aligned curriculum
Problem Solving	Cognitive	• Recognizing key issues that are negatively impacting a university and taking actions that reduce these issues to a level of insignificance • Figuring out why a particular stretch of highway has a high fatality rate and taking actions that reduce the fatality rate by 70%
Selling	Social	• Selling a computer system to a company • Convincing a college dean to invest in faculty development
Presenting	Social	• Presenting closing arguments to a jury • Presenting a research paper at a technical conference
Life Management	Affective	• Comforting a friend whose wife has died in a traffic accident • Helping a colleague who has been denied tenure or promotion understand that the evaluation was fair • Confronting unprofessional behavior from a colleague or a supervisor
Playing a sport or a musical instrument	Psychomotor	• Playing in a golf tournament • Playing clarinet in an orchestra

Figure 2 categorizes various performance areas into primary domains and provides examples for each. Designing and Problem Solving are classified under the Cognitive domain. Examples of designing include tasks like re-designing automobiles for better fuel efficiency, composing music for orchestras, and creating aligned curriculums. Problem Solving is exemplified by addressing significant issues at a university to diminish their impact or reducing highway fatality rates significantly through targeted actions.

Selling and Presenting fall under the social domain. Selling encompasses activities such as marketing a computer system to a company or persuading a college dean to fund faculty development. Presenting involves delivering closing arguments to a jury or presenting research

at a technical conference. Life Management is associated with the Affective domain and includes examples such as providing comfort to a grieving friend, assisting a colleague to accept an unfair evaluation, or addressing unprofessional behavior in the workplace. Lastly, the Psychomotor domain includes activities like participating in a golf tournament or playing a musical instrument such as the clarinet, highlighting the physical and skill-based nature of this domain. Each of these domains represents a different aspect of human capacity and illustrates a wide range of skills and competencies.

The Theory of Performance states that "Current levels of performance depend holistically on 6 components: context, level of knowledge, levels of skills, level of identity, personal factors, and fixed factors. Three axioms are proposed for effective performance improvements. These involve a performer's mindset, immersion in an enriching environment, and engagement in reflective practice." (Elger, 2007, p. 56) These axioms are also present in enriched learning environments, with the performer being both the teacher leading instruction and the performer being the student with scores on assessments. The teacher is responsible for creating an enriching environment, enhancing the student's mindset, and then engaging in reflective practice to improve where and when needed. The performance levels can be improved by manipulating some of the aforementioned factors in three categories: Performer's mindset, Immersion, and Reflective Practice.

Empirical Literature

The empirical literature section of the review of literature is organized according to the factors analyzed in this study. First the literature related to the independent variable distinction is

presented considering student achievement. Following the studies regarding distinction studies related to the dependent factors are discussed.

Distinction: Student Achievement

Schools that perform at a certain level in Texas on state testing are awarded a distinction. According to TEA, "Campuses that receive an accountability rating of Met Standard are eligible to earn distinction designations. Distinction designations are awarded for achievement in several areas and are based on performance relative to a group of campuses of similar type, size, grade span, and student demographics. The distinction designation indicators are typically separate from those used to assign accountability ratings. Districts that receive a Met Standard rating are eligible for a distinction designation in postsecondary readiness" (TEA, 2017, p,55). An Academic Achievement Distinction Designation (AADD) in English is awarded to campuses for outstanding achievement in ELA/Reading based on outcomes of three performance indicators.

- Attendance Rate. Minimum size is based on total days in membership. If a campus has fewer than 1,800 total days in membership (e.g., 10 students x 180 school days) attendance cannot be used to evaluate that campus for this distinction.
- Assessments (STAAR, AP/IB, SAT, and/or ACT). Minimum size is 10 students for each assessment. If a campus has fewer than 10 test takers for an assessment, any indicator relying on that assessment cannot be used to evaluate that campus for this distinction.
- Participation in AP/IB: ELA. Minimum size is 10 students enrolled in grades 11 and 12.
- Advanced/Dual-Credit Course Completion: ELA/Reading. Minimum size is 10 students in grades 11 and 12 who complete at least one course of SAT/ACT Participation. Minimum size is 10 reported annual graduates (TEA, 2017, p 2).

If schools meet all criteria, they are awarded a distinction. This means that the school is adding value to the student and the student is learning. The true measure of student success is how well students are prepared to accomplish their current and future academic, personal, and professional goals through the development of knowledge, a sense of responsibility and self-reliance, and a connection to the college and wider community (Abbott, 2022). In the current climate of education, it is believed that the school can be a great influence on student success. Moreover, the teacher is thought to be the number one indicator of student success that the child may encounter daily. According to Indrahadi, and Wardana (2020), "teacher quality is the most important school-related factor influencing student achievement" (p. 1115).

School Factor: Class Size

The average number of students in a classroom per teacher is noted as the class size. According to Tahir et al. (2021), students in smaller classes perform better in all subjects and on all assessments when compared to their peers in larger classes. However, there has been a debate about class size. Much of the debate about class size has been about whether reducing the number of pupils in a class has a beneficial effect on student success (Tahir et al., 2021). An important factor in this debate is the variable of teacher quality and how the students are grouped in large classes. Researched based grouping strategies have produced higher success rates regardless of class size. Teacher pedagogical expertise is also a factor that could overcome the negative effects of students in large classes. A large class is relative to the age of the students and the subject taught and not clearly defined in the literature. However, according to a national principal and teachers survey, in Texas a class is considered large in secondary core subjects if it

is over 30 students per one teacher (National Center for Educational Statistics, 2018). The average class size in Texas is 22 students to one teacher. Note that this is not a claim that 22 to one is the optimal number of students to have to facilitate success, but a statewide average.

Figure 3.

Average class size limits in 148 large school districts in the U.S.

Average class size limits in 148 large school districts: 2016-2021

	Pre-K	K-3	4	5-6	7-8	9-12
2016	20	25	27	29	30	31
2019	20	24	27	29	29	30
2021	17	24	27	29	29	30

Source: U.S. Department of Education, National Center for Education Statistics (2021)

Figure 3 provides a table that outlines the trends in average class size limits across different grade levels in 148 large school districts from the years 2016 to 2021. In 2016, the class size limit for Pre-Kindergarten (Pre-K) was 20 students, which was maintained in 2019 but then reduced to 17 by 2021. For Kindergarten through 3rd grade (K-3), the class size limit started at 25 in 2016, slightly decreased to 24 by 2019 and remained constant into 2021. For 4th grade, the class size limit was consistently 27 throughout the years.

The 5th and 6th grades had a class size limit of 29, which did not change over the six-year span. For grades 7 and 8, the limit was set at 30 in 2016 and decreased to 29 in 2019, with no change in 2021. The class size limit for grades 9 through 12 started at 31 students in 2016, reduced by one to 30 in 2019, and stayed at that level in 2021. Overall, the data indicates a slight trend toward smaller class sizes over the six years, particularly noticeable in the early educational stages such as Pre-K.

The presence of students with special needs in the classroom is also a variable that can contribute to the overall student success rate (Blatchford & Webster 2018). In most countries across the world there is an ongoing debate about the best ways of educating pupils with diverse abilities (Blatchford & Webster 2018). In the United States every student is guaranteed a free and appropriate education in the least restrictive environment (U.S. Department of Education, 2005). The application of this mandate meant students with special needs had to be included in the general education environment with peers (Beninghof, 2020; Rexroat-Frazier & Chamberlin 2019). The research that followed this mandate recommended that students with special needs were more successful in smaller classes or with the presence of a co-teacher (Beninghof, 2020; Rexroat-Frazier & Chamberlin 2019). This theory has been examined and classroom organization is identified as the greatest contributor to student success as well as the teacher or teachers' knowledge of pedagogy (Beninghof, 2020; Rexroat-Frazier & Chamberlin 2019). In the current study the relationship between class size and student success on state mandated testing was examined in secondary schools in Texas. The results may provide an understanding as to whether there is a positive or negative relationship.

School Factor: Attendance

Schools in Texas and most states are funded based on average daily student attendance. Because of this, attendance is tracked and documented carefully.

Figure 4.

Average National Assessment of Educational Progress (NAEP) mathematics scale score of 8th-grade students, by race/ethnicity and number of days absent from school in the last month: 2017

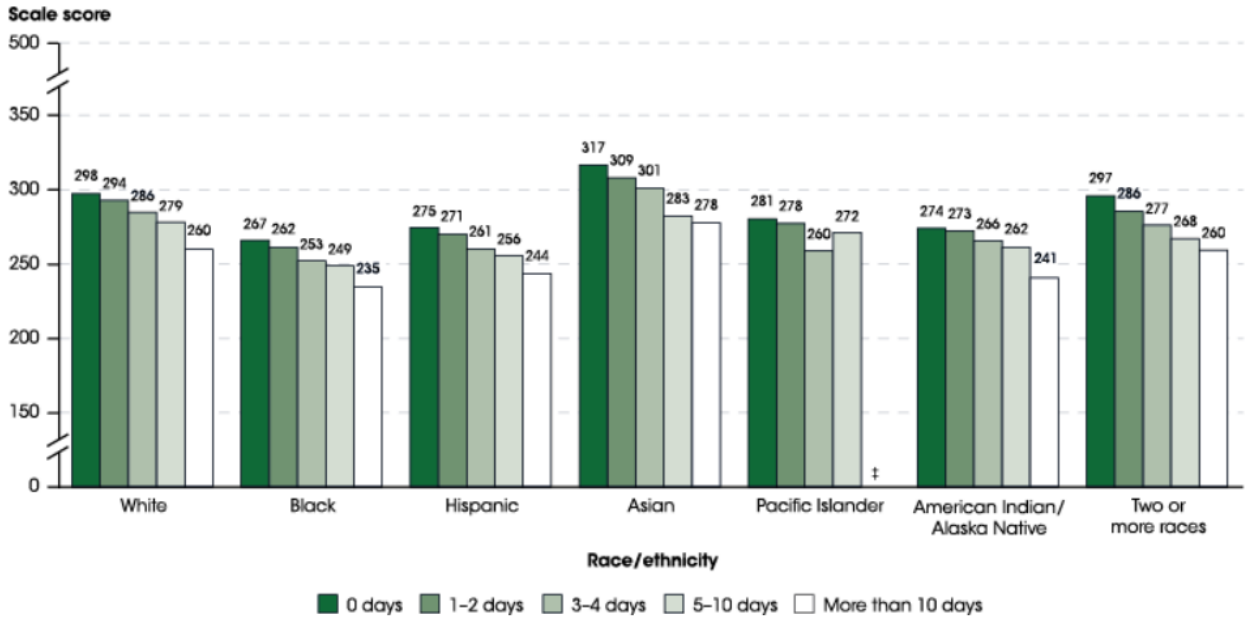


Figure 4 presents data on the Average National Assessment of Educational Progress (NAEP) mathematics scale scores for 8th-grade students in 2017. The graph categorizes students by race/ethnicity and the number of days they were absent from school in the last month. Each racial and ethnic group—White, Black, Hispanic, Asian, Pacific Islander, American Indian/Alaska Native, and those identifying as two or more races—is represented, with scale scores compared across different levels of absenteeism: 0 days, 1-2 days, 3-4 days, 5-10 days, and more than 10 days. Among these groups, Asian students consistently demonstrate the highest scale scores, while American Indian/Alaska Native students tend to have lower scores. Notably, there is a discernible trend indicating that students with fewer absences generally achieve higher scale scores, while those absent for more than 10 days tend to have lower scores across all racial

and ethnic categories. This underscores the significance of school attendance in influencing academic performance, as reflected in NAEP mathematics assessments.

The link between low attendance and students not being successful on state mandated testing and low grades has been well established in the literature (Bartanen, 2020; Liu & Loeb, 2021). Liu and Loeb go on to say…

> Despite the critical role of regular school attendance for student long-run success, research is surprisingly sparse in teachers' impact on reducing absences, especially at the secondary school level, a stage that directly feeds into students' college enrollment. Even less is known about whether teachers who reduce absenteeism have long-term effects on student success, particularly for at-risk students, who tend to accrue large amounts of absences and drop out of high school. With this study, we are among the first to estimate teachers' contributions to student class attendance in secondary school. We then evaluate several important statistical properties of this new measure, including how stable this measure is over time and how it correlates with teachers' contribution to student test scores. (p. 344)

Bartanen (2020) argued that the principal also plays an important role in student attendance. Bartanen argues…

> …[P]rincipals have substantive effects on student absences. Moving from the 25th to 75th percentiles in principal quality lowers absence rates by 0.8 percentage points, which corresponds to 1.4 additional instructional days for each student in the school, on average. The magnitude of these impacts is roughly comparable to principal effects on

test scores. Further, principals have even larger effects in high-poverty and urban schools, which also have the highest rates of chronic absenteeism. (p. 109)

The fact that the state of Texas measures the amount of funding a school receives based on average daily attendance is an indication of how important policy makers believe attendance is to student success.

Figure 5.

Overall Attendance Rate Formula (NCES, n.d.)

$$\text{Overall Attendance Rate} = \frac{\text{Sum Total Days of Attendance}}{\text{Sum Total Days of Membership}}$$

The state follows a formula based on federal guidelines. It divides the days a student is in attendance by the days the student is in membership (see Figure 5). Days in membership is related to the number of days each student was enrolled in a district for the school year or identified period (NCES, n.d.). A student cannot be absent on the first day of school. When the student first reports to school the student is considered to be in membership. Days in attendance refers to the number of days each student was considered in attendance for the school year or the identified period (NCES, n.d.). Accordingly, if a student is in class the student is considered, for funding purposes, present and in membership (NCES, n.d.). If a student is not in class that student is considered absent and in membership (NCES, n.d.). Determining the extent to which attendance is correlated with student success was one of the aims of the current study.

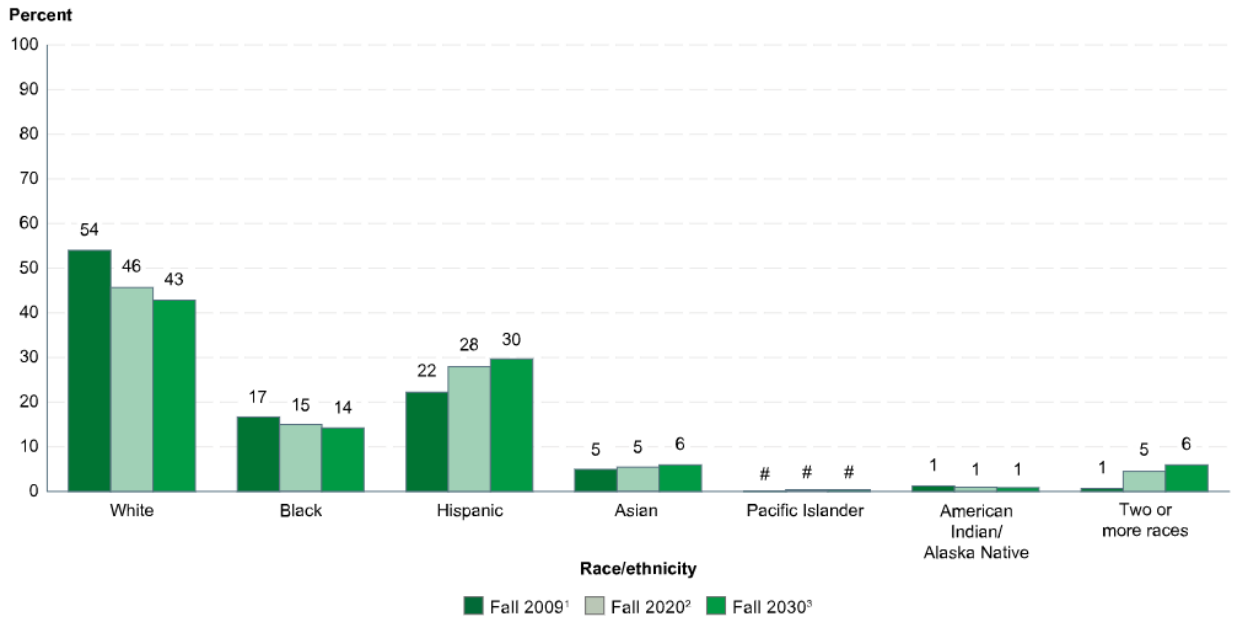
School Factor: Total Number of Students

The size of the school is related to the total number of students in membership at the school (NCES, n.d.). While there is no clear definition that identifies the difference between a

large school and a small school, generally speaking, from the literature, a large school is defined as a school with a total student population above 2,104 students (Jhamb & Kumar, 2021; Nicks et al., 2018; Rosenfeld & Sher, 2019). Small schools are defined as a school with 500 students or less. Schools that fall between 500 and 2,104 are considered average or medium size schools (Jhamb & Kumar, 2021; Nicks et al., 2018; Rosenfeld & Sher, 2019).

Figure 6.

Percentage distribution of student enrollment in public elementary and secondary schools, by race/ethnicity



Source: U.S. Department of Education, National Center for Education Statistics (2021).

Figure 6 depicts the percentage distribution of student enrollment by race/ethnicity in public elementary and secondary schools, as reported by the National Center for Education Statistics in 2021. The data compares enrollment distributions across three different academic years: Fall 2009, Fall 2020, and Fall 2030.

White students constituted a declining percentage of the student population, dropping from 54% in Fall 2009 to a projected 43% in Fall 2030. Black student enrollment also saw a decrease from 17% in Fall 2009 to a projected 14% in Fall 2030. Hispanic student enrollment, on the other hand, showed an upward trend, increasing from 22% in Fall 2009 to an anticipated 30% in Fall 2030.

The percentage of Asian students increased slightly from 5% in Fall 2009 to a projected 6% in Fall 2030. The data for Pacific Islander students remained consistent at 1% across the years, and there was a stable but minimal representation of American Indian/Alaska Native students at 1% throughout the periods. Students identifying with two or more races also remained consistent at 5% from Fall 2009 to a projected 6% in Fall 2030.

The percentages for some groups, specifically Pacific Islanders and American Indian/Alaska Native, are indicated with a hashtag symbol, which typically denotes a value that is not applicable or not available due to the small size of the group in the overall population, which may be subject to data reporting standards. Overall, the graph illustrates shifting demographic patterns in public school enrollments across the country, indicating a diversifying student body, with a significant increase in Hispanic enrollment and a decline in the proportion of White students over the 21-year span.

In a study of how school size impacted student success, it was found that small size schools positively correlated to students from low-SES backgrounds and larger schools correlated with a minimal positive impact for students from high-SES backgrounds (Steinmayr et al., 2018). Smaller schools had lower dropout rates, higher graduation rates, and higher attendance rates than larger schools (Steinmayr et al., 2018). However large high schools

typically offer a wider range of subjects that reflects the interests of a diverse student body (Shum & Myers, 2002). Schools with a large student body also have a number of athletic and co-curricular programs (Shum & Myers, 2002).

Some large high schools offer as many as 20 different sports teams (Shum & Myers, 2002). However, in an era of school accountability where student success and student safety are foremost, many states, through legislation, mandate that class size reduction is the single most powerful avenue by which to achieve those objectives. Yet, another powerful reform might also accomplish the goals of student success and student safety--school size. There are major benefits to smaller high schools. First, is the student perception of belonging that leads to reduced school violence. Students do not get lost in the crowd because they have an increased sense of identity and community. This increased sense of belonging was shown to reduce students' sense of alienation while increasing their confidence, self-esteem, and a sense of responsibility. The major benefits of a large school are replaced with teachers who know every student's name (Galton & Patrick, 2018; Hargreaves, 2018; Patrick & Hargreaves, 2018). Smaller schools have higher attendance rates and lower dropout rates (Galton & Patrick, 2018; Hargreaves, 2018; Patrick & Hargreaves, 2018). Not only has attendance increased, but so has participation in extracurricular activities (Galton & Patrick, 2018; Hargreaves, 2018; Patrick & Hargreaves, 2018). As far back as 1964 researchers reported that students in small schools were more likely to be involved in extracurricular activities (Galton & Patrick, 2018; Hargreaves, 2018; Patrick & Hargreaves, 2018). Although large schools may have more selection, proportionately, small schools have more student involvement (Galton & Patrick, 2018; Hargreaves, 2018; Patrick &

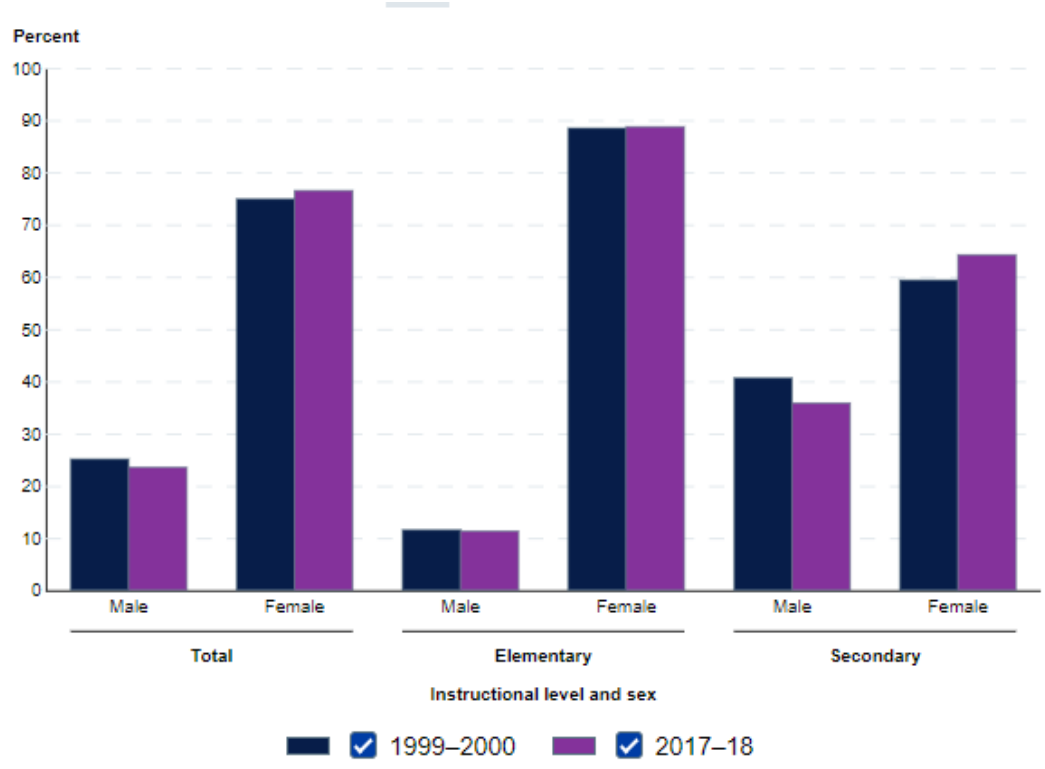
Hargreaves, 2018). In the current study an analysis of the relationship between school size and student performance on state mandated testing was reviewed.

Teacher Demographic: Gender

The state of Texas tracks the gender of teachers who are on staff at the school. This was denoted in this study as male or female. Having a female teacher has positive and significant effects on girls' academic and noncognitive outcomes relative to those of boys and overall girls with a female teacher outperform boys on state mandated testing (Gong et al., 2018).

Figure 7.

Percentage distribution of teachers in public elementary and secondary schools, by instructional level and sex.



Source: U.S. Department of Education, National Center for Education Statistics, Schools, and Staffing Survey (2019)

Figure 7 provides a visual representation of the percentage distribution of teachers by sex across instructional levels in public elementary and secondary schools, comparing two academic periods: 1999–2000 and 2017–18. The bar graph indicates a breakdown of totals, as well as separate distributions for elementary and secondary levels.

From the graph, we observe that the total percentage of female teachers was notably higher than male teachers in both time periods, with the proportion of female teachers increasing further by 2017–18. At the elementary level, female teachers were predominant in both academic years, with their percentage being substantially higher than their male counterparts. This disparity appears even more pronounced in 2017–18.

At the secondary level, while the percentage of male teachers was higher compared to the elementary level, female teachers still made up a greater percentage of the workforce. The difference between male and female teachers at the secondary level, although still notable, was less pronounced than at the elementary level. Over time, the trend suggests an increase in the percentage of female teachers across both instructional levels. This reflects a continued gender imbalance in the teaching profession, with a dominance of female teachers in public schools that has either been maintained or increased from 1999–2000 to 2017–18.

It was also found that having both male and female teachers gives students the chance to learn from others perceived as similar which can foster a sense of belonging and reduce instances of disruptive behavior (Gong et al., 2018). Gong et al. go on to say…

> Results show that having a female teacher has positive and significant effects on girls' academic and noncognitive outcomes relative to those of boys. On academic performance, our estimates confirm a reverse gender gap: girls outperform boys on test scores. What is immediately remarkable is how female teachers enlarge girls' performance lead: they raise girls' test scores by about 19.8% of a standard deviation relative to those of boys. Moreover, having a female teacher also improves girls' self-assessment of their learning. When taught by a male teacher, although girls' absolute grades are higher than those of boys, their self-assessed outcomes are not. Having a female teacher significantly increases girls' self-assessed scores relative to those of boys, and the magnitude of the effect is even larger than the effect on actual test scores (p. 745).

The pattern for students' noncognitive outcomes is more subtle. If taught by a male, girls are more likely to feel depressed, blue, or unhappy at school than boys. Female teachers can overturn the gender gap: they do not seem to affect boys' outcomes but significantly improve girls' mental status. In addition, we find strong evidence that female teachers improve girls' overall satisfaction and social acclimation with classmates (Carlana, 2019; Gong et al., 2018).

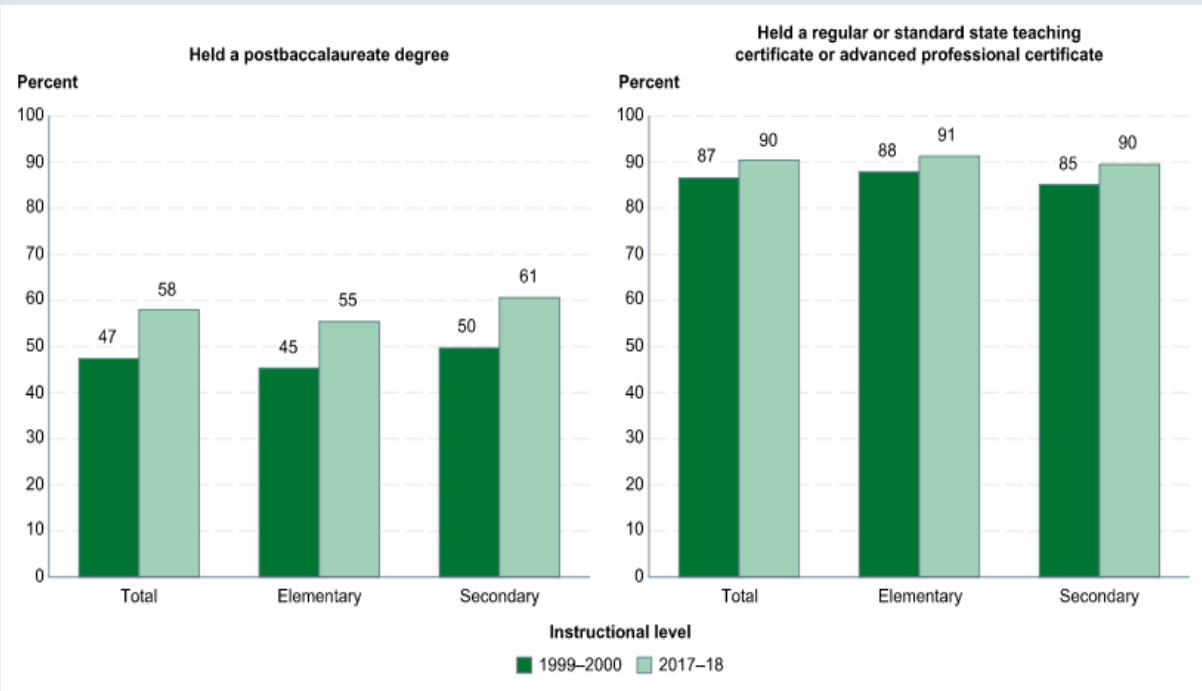
Teacher Demographic: Level of Education

The report shows how many teachers have bachelor's degrees, master's degrees, and doctoral degrees. Teachers with continued education have a positive impact on student achievement (Fischer, 2018). Not only do students do better on state mandated testing but they also do better on advanced placement testing as well when teachers participate in professional development (Fischer, 2018). The independent school district in North Texas does not track

professional development. However, it does keep track of the level of education. The importance of advanced degrees, however, varies based on what and whom one teaches (Chang et al., 2020). For instance, the impact of advanced degrees appears to be most significant in high school classrooms (Chang et al., 2020). High school teachers who completed a master's degree were more effective at increasing student achievement than those without advanced degrees; yet several meta-analyses showed a negative association between advanced degrees and student achievement in elementary grades, especially in Reading (Chang et al., 2020). Principals prefer to hire teachers who have earned advanced degrees (Giersch & Dong, 2018). The opposite is also true in regard to teacher preparation. Curry et al. (2018) concluded that alternative certification programs may devalue teacher professional status and lessen the teaching profession to a trade. Findings from the Curry et al. study emphasize the value of traditional teacher preparation programs, specifically student teaching and professional methods courses in producing highly effective teachers. The Curry et al. study also found a significant impact between a teacher possessing an advanced degree and student achievement. The current study also analyzed how advanced degrees impact student performance on state mandated testing in secondary schools.

Figure 8.

Percentage of public-school teachers and the degrees that they held.



Source: U.S. Department of Education, National Center for Education Statistics, Schools, and Staffing Survey (2019)

Figure 8 presents a comparative analysis of the educational qualifications of public-school teachers, measured by the percentage holding postbaccalaureate degrees and teaching certificates, during two academic periods: 1999-2000 and 2017-18. The bar graph is divided into two sections to illustrate these qualifications across total, elementary, and secondary instructional levels.

The left section of the graph shows the percentage of teachers with postbaccalaureate degrees. Overall, there was an increase from 47% in 1999-2000 to 58% in 2017-18. At the elementary level, the percentage grew from 45% to 55%, while at the secondary level, it went

from 50% to 61% over the same period. This indicates a general rise in the advanced educational attainment of teachers across all levels of instruction.

The right section of the graph depicts the percentage of teachers who held a regular or standard state teaching certificate or an advanced professional certificate. In 1999-2000, 87% of the total teacher population had such qualifications, and this increased slightly to 90% in 2017-18. For elementary teachers, the percentage with certifications was stable at 88% across the years. In contrast, the proportion of secondary teachers with these credentials increased from 85% to 90% over the observed period. The data in Figure 8 thus highlights a positive trend in the qualifications of public-school teachers, showing that a higher percentage of educators at both elementary and secondary levels have obtained advanced degrees and certifications over the two decades.

Teacher demographic: Ethnicity

For this study, ethnicity was described as White, Black, Hispanic, Asian, Native American, Mixed Race. This was from the data collected from an independent school district in North Texas.

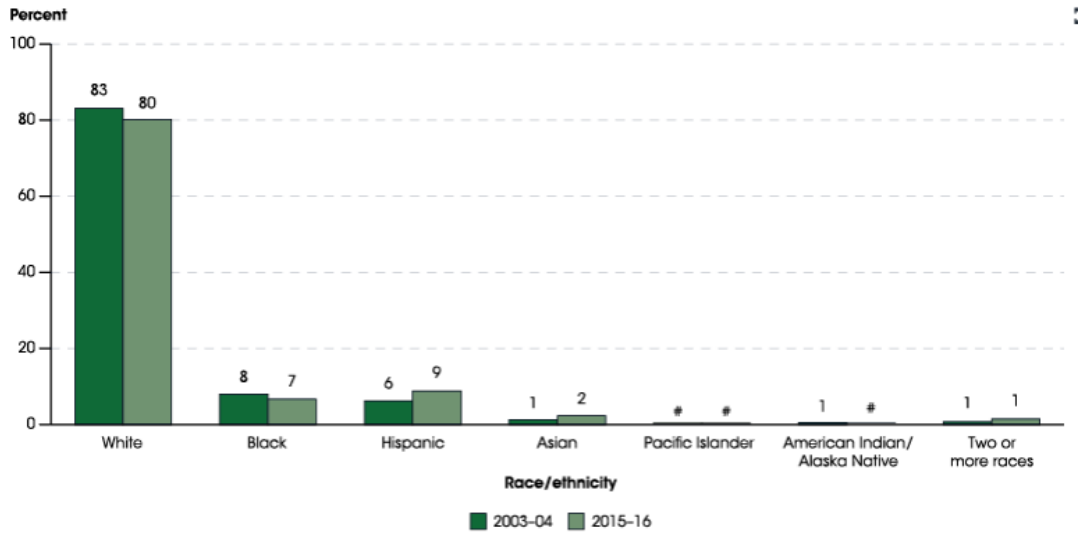


Figure 9.

Percentage distribution of teachers in public elementary and secondary schools, by race/ethnicity: School years 2003–04 and 2015–16

Source: U.S. Department of Education, National Center for Education Statistics, Schools, and Staffing Survey (2016)

Students tend to benefit from having teachers who look like them, especially nonwhite students (Sun, 2018). Goldhaber et al. (2019) go on to say…

Figure 9 provides data on the percentage distribution of public elementary and secondary school teachers by race/ethnicity for the school years 2003–04 and 2015–16. It indicates that White teachers comprised a substantial majority, though their representation decreased slightly from 83% to 80% over the period. Black teachers' representation also decreased marginally from 8% to 7%. Hispanic teachers, however, experienced a small increase from 6% to 9%, suggesting a gradual shift toward more diversity in this category.

Asian teachers saw their numbers rise from 1% to 2%, doubling their representation. The percentages for Pacific Islanders and American Indian/Alaska Native teachers are represented with a hashtag, likely indicating a very small or unchanged proportion; these categories remained at 1% each for both years. The representation of teachers identifying with two or more races is also noted at 1% for the year 2015–16, but data for 2003–04 is not provided or is negligible.

The overall trend shown in the graph suggests a slow but steady diversification of the teaching workforce across public schools in the United States, with a small decrease in the proportion of White teachers and slight increases in the percentages of Hispanic and Asian teachers.

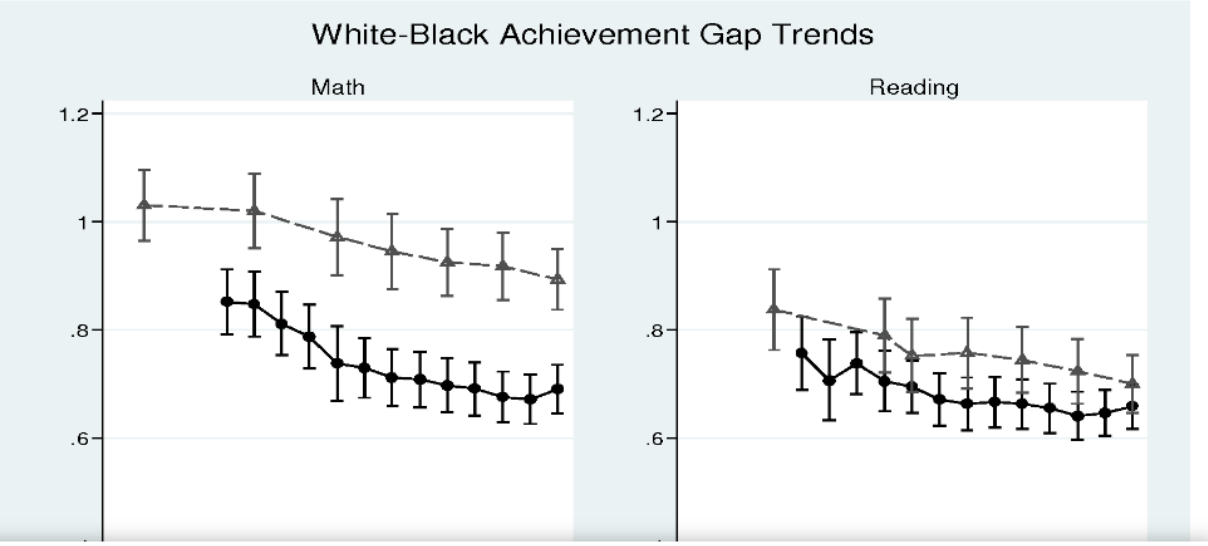
The theoretical arguments and empirical evidence generally support the notion that improving the diversity of the teacher workforce would help close racial achievement gaps in public schools. However, teacher workforce diversity is just one of many ways to improve the education system and diversifying the teacher workforce may present substantial challenges and potential unintended consequences. One challenge is that we know very little about what contributes to the lack of diversity in the teaching workforce. We must understand the answer to that question before we can design effective strategies to recruit more teachers of color. Another challenge is that, while the empirical evidence is consistent with the three theoretical arguments about the importance of teacher workforce diversity discussed above, we don’t have conclusive evidence for why students of color appear to benefit from assignment to a teacher of the same race (p. 29).

For schools to narrow racial and ethnic opportunity and achievement gaps, policies and practices must be found that benefit children from traditionally underserved racial and ethnic

groups. One such practice that has received considerable attention over the past two decades is the assignment of students to a teacher of the same ethnicity or ethnicity (Redding, 2019). The students themselves could also be particularly responsive when assigned to a teacher of the same race or ethnicity.

Figure 10.

The achievement gap in reading between White and Black students.



Source: U.S. Department of Education 2019

Figure 10 illustrate the White-Black achievement gap trends in both math and reading over a series of assessment years. Both graphs display a trend line with error bars, which indicate the range of potential values within which the true achievement gap may lie, considering the variability and potential measurement error in the data.

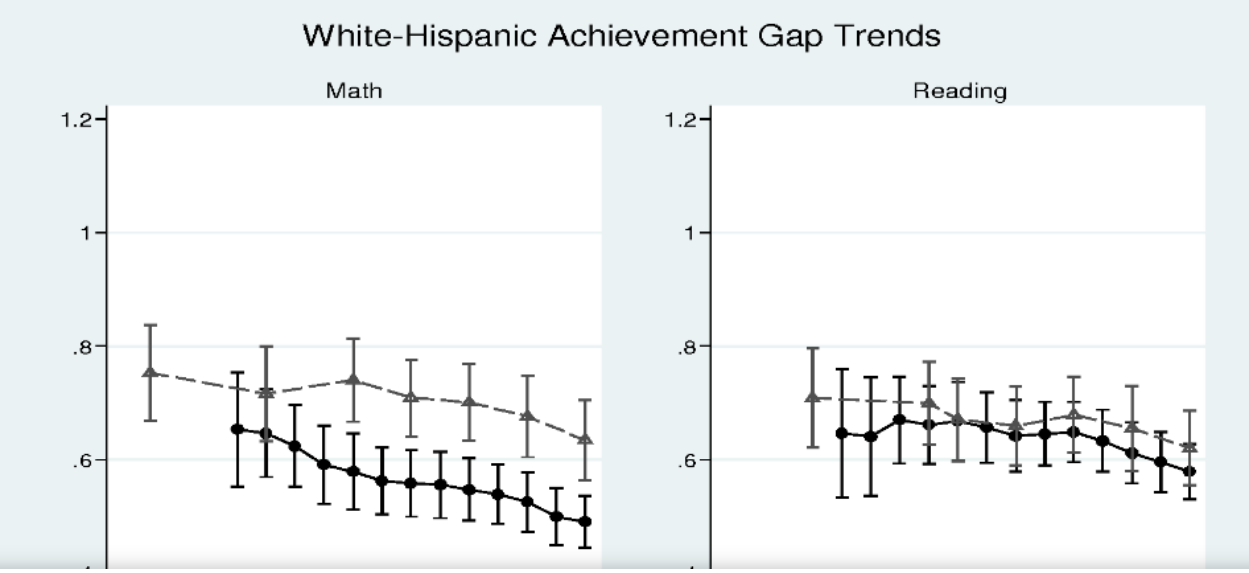
In the graph for math, the achievement gap appears to be declining over time, as the line trends downward from the left to the right, with the gap starting just below 1.0 and ending closer

to 0.6. The trend indicates that while there is still a gap between White and Black students' performance in math, the difference has been narrowing.

Similarly, the graph for reading shows a downward trend, although the decrease in the achievement gap is less steep than in math. The reading achievement gap also starts just below 1.0 but does not decrease as significantly, suggesting that while progress has been made, the gap in reading achievement between White and Black students remains more persistent than in math. That is, regardless of improved pedagogy or relationships from the co-racial or co-ethnic teacher, a student may feel more engaged with the teacher, adjusting their effort, attitudes, or behavior (Redding, 2019). Ethnicity was used to examine the relationship between the diversity of the teachers and student achievement on state testing in the current study.

Figure 11.

The achievement gap in reading between White and Hispanic students.



Source: U.S. Department of Education 2019

Figure 11 features two-line graphs showing the trends of the achievement gap between White and Hispanic students in the subjects of math and reading. In each graph, the vertical axis represents the scale of the achievement gap, while the horizontal axis likely corresponds to assessment years, although the specific years are not visible.

In the math graph, the trend line starts near a gap value of 1.0 and consistently declines over time to a point closer to 0.6, signifying a decrease in the achievement gap between White and Hispanic students. The trend indicates improvement in the scores of Hispanic students relative to White students in mathematics. The reading graph depicts a similar trend, with the achievement gap beginning just below a value of 1.0. Over time, the gap decreases, leveling off around the 0.6 mark. This suggests that, like in math, the reading achievement gap between White and Hispanic students has been narrowing.

The error bars associated with each data point in both graphs indicate the confidence intervals, providing a visual representation of the potential variability in the gap measurements. The consistent downward trend in both subjects reflects progress in closing the achievement gap, although there remains room for further improvement to achieve parity in educational outcomes between White and Hispanic students.

Teacher Demographic: Years of Experience

The report displays the average years of experience from four categories: 1-5, 6-10, 11-15, 16-20, 21-26, 27+. As teachers gain experience, their students not only learn more, as measured by standardized tests, they are also more likely to do better on other measures of success, such as school attendance (Sorensen & Ladd, 2020). Teacher turnover may have a negative impact on student achievement as well. In particular, the compositional effects of

turnover that we report are likely to be detrimental in two ways, apart from their direct harm to instructional quality and student learning (Sorensen & Ladd, 2020). The influx of new and inexperienced teachers could disrupt and interfere with the development of a coherent program of education within the school (Sorensen & Ladd, 2020).

Figure 12.

Percentage distribution of teachers in public elementary and secondary schools, by years of teaching experience: School years 1999–2000 and 2017–18

Source: U.S. Department of Education, National Center for Education Statistics (2021).

Figure 12 displays a bar graph that compares the percentage distribution of public elementary and secondary school teachers by their years of teaching experience for two distinct school years, 1999–2000 and 2017–18. The data shows a decrease in the percentage of teachers with less than 3 years of experience, dropping from 11% in the 1999–2000 school year to 9% in 2017–18. For those with 3 to 9 years of experience, there was no change, remaining steady at 28% in both years. Teachers with 10 to 20 years of experience constituted 29% in 1999–2000,

but this group saw a significant increase to 40% in 2017–18, becoming the category with the highest growth.

Conversely, the percentage of teachers with over 20 years of experience decreased from 32% in 1999–2000 to 23% in 2017–18. This indicates that while the proportion of teachers in the mid-career range (10 to 20 years of experience) has grown, there is a smaller percentage of teachers in the most veteran category of over 20 years of experience. The data may suggest a maturing teaching workforce over the 18-year span, with a notable shift toward a higher concentration of teachers in the middle of their careers.

Although some of that disruption would occur regardless of the characteristics of the replacement teachers relative to the departing teachers, it is likely magnified when the new teachers have lesser qualifications and experience than the departing teachers (Sorensen & Ladd, 2020). Gess-Newsome (2019) argues that as teachers gain years of experience, they increase knowledge as it relates to pedagogy. Several studies reviewed indicated that teacher's pedagogy is highly correlated with student success on state mandated testing as well as overall academic performance (Chang et al., 2020; Fischer, 2018; Giersch & Dong, 2018; Gess-Newsome, 2019; Jhamb & Kumar, 2021; Sorensen & Ladd, 2020). The current study analyzed the relationship between teacher experience and student success on state testing as it relates to the earning of ELA academic distinctions.

Summary

It is not known what school and teacher demographic factors are related to student success on state mandated testing. The purpose of this correlational study is to determine the nature of the relationship between school and demographic factors in relation to student achievement. More specifically, this study focused on school related factors (the years of

experience of the classroom teacher, size of student body of the school, rates of student attendance), and demographic related factors for the teachers (gender, ethnicity, level of degree held, average class size) on the awarding of Reading Distinctions as concluded by the State of Texas Assessment of Academic Readiness (STAAR) examination in secondary schools.

Elger (2007) wrote the seminal work on the Theory of Performance. According to Elger, the Theory of Performance combines six concepts to analyze and maximize how to increase performance and increase favorable output. Schools that perform at a certain level in Texas on state testing are awarded a distinction. According to TEA "Campuses that receive an accountability rating of Met Standard are eligible to earn distinction designations. Distinction designations are awarded for achievement in several areas and are based on performance relative to a group of campuses of similar type, size, grade span, and student demographics. The average number of students in a classroom per teacher is noted as the class size. According to Tahir et al. (2021), students in smaller classes perform better in all subjects and on all assessments when compared to their peers in larger classes. However, there has been a debate about class size. Much of the debate about class size has been about whether reducing the number of pupils in a class has a beneficial effect on student success (Tahir et al. 2021). Schools in Texas and most states are funded based on average daily student attendance. Because of this, attendance is tracked and documented carefully.

The link between low attendance and students not being successful on state mandated testing and low grades has been well established in the literature (Bartanen, 2020; Liu & Loeb, 2021). The state follows a formula based on federal guidelines. It divides the days a student is in attendance by the days the student is in membership. The size of the school is related to the total number of students in membership at the school (NCES, n.d.). While there is no clear definition

for the difference between a large school and a small school, generally speaking, from the literature, a large school is defined as a school with a total student population above 2,104 students (Jhamb & Kumar, 2021; Nicks et al., 2018; Rosenfeld & Sher, 2019). Small schools are defined as schools with 500 students or less. Schools that fall between 2,104 and 500 are considered average or medium size schools (Jhamb & Kumar, 2021; Nicks et al., 2018; Rosenfeld & Sher, 2019). The state of Texas tracks the gender of teachers that are on staff at the school. This was denoted in this study as male or female.

Having a female teacher has positive and significant effects on girls' academic and noncognitive outcomes relative to those of boys and overall girls with a female teacher outperform boys on state mandated testing (Gong et al., 2018). It was also found that having both male and female teachers provides students the chance to learn from others perceived as similar which can foster a sense of belonging and reduce instances of disruptive behavior (Gong et al., 2018). The report shows how many teachers have bachelor's degrees, master's degrees, and doctoral degrees. Teachers with continued education have a positive impact on student achievement (Fischer, 2018). Not only do students do better on state mandated testing, but they also do better on advanced placement testing as well, when teachers participate in professional development (Fischer,2018). The report does not track professional development. However, it does keep track of the level of education.

The importance of advanced degrees, however, varies based on what and whom one teaches (Chang et al., 2020). For this study, ethnicity was described as White, Black, Hispanic, Asian, Native American, Mixed Race. Students tend to benefit from having teachers who look like them, especially nonwhite students (Sun, 2018). The report displays the average years of experience(YOE) from five categories: Beginning Teachers, 1-5 YOE, 6-10 YOE, 11-20 YOE,

and over 20 YOE. As teachers gain experience, their students not only learn more, as measured by standardized tests, they are also more likely to do better on other measures of success, such as school attendance (Sorensen & Ladd, 2020). Teacher turnover may have a negative impact on student achievement as well. In particular, the compositional effects of turnover that we report are likely to be detrimental in two ways, apart from their direct harm to instructional quality and student learning (Sorensen & Ladd, 2020).

CHAPTER 3: METHODOLOGY AND RESEARCH DESIGN

The purpose of this correlational study was to determine the nature of the relationship between school and demographic factors and student achievement using data from the individual schools from an independent school district in North Texas. The Texas Academic Performance Report includes performance information broken down by student groups, ethnicity, socioeconomic status, and demographic information about both students and staff. When reviewing this data and comparing ratings one of the demographic qualities that was identified was the length of careers for both the administrators and the teachers. Both can be broken into novice or veteran status. Additionally, the size of the school, percentage of student attendance, gender of the teacher, ethnicity, degree held and average class size when compared all have an impact on student achievement.

In order to measure the achievement of the participants in the study, the STAAR test was used. The STAAR test is a state mandated test by which schools in Texas measure the achievement of students and assign grades for campuses. A Binary Logic Regression Test research design was employed in this study. This design allowed the researcher to examine how the dependent variable, distinctions earned, relies on variation among the independent factors. The population of this study consisted of students enrolled in Secondary Schools in an independent school district in North Texas.

The Research Design

A Binary Logic Regression research design was employed in this study. This design allowed the researcher to examine how the dependent variable, distinctions earned, relies on variation among the independent factors (Creswell & Creswell, 2017), the independent factors

being years of experience, size of school, attendance, gender, ethnicity, degree held, and average class size of teachers. Archival data of student results on the 2020-2021 STARR exam was used. The data was analyzed using a binary logic regression model. The independent variables was a distinction earned or not earned by the school on ELA for ninth and tenth grade STAAR. The dependent factors were analyzed in two groups: school factors and teacher factors. School factors include class size, school size, and attendance. Teacher demographic factors were: years of experience, level of education, gender, and ethnicity.

Population

The population of this study consisted of students enrolled in Secondary Schools in an independent school district in North Texas. Publicly available data was aggregated and analyzed from the available years of 2020-2021 to run a Binary logic regression test with the goal of identifying statistically significant factors in the achievement of academic distinctions. This study employed a purposive sampling protocol to collect archival data available from TEA on the internet. The scores from the state mandated testing, State of Texas Assessments of Academic Readiness (STAAR), was used for English language arts for ninth and tenth grade students. The sample populations were schools that were awarded a distinction for student achievement on the STAAR and schools that did not. The report was requested from the district Testing and Accountability Department. Schools were chosen at random from each group. The reports were analyzed, and the data entered into SPSS for analysis. Data from 267 students in the ninth and tenth grade was analyzed for this study. Students who were not first-time testers (older students) were eliminated from consideration. The age of the participants was between 14 and 15.

Sampling Procedure

In this study, the sampling procedures focused exclusively on collecting data from secondary schools across Texas for the academic years 2012 to 2019. The study utilized a purposive sampling protocol, a method well-suited for the study's objectives. This approach allows for the selection of specific schools that provide relevant data for analyzing trends in student performance on the State of Texas Assessment of Academic Readiness (STAAR) exams.

Purposive sampling was chosen for its effectiveness in gathering data that are most pertinent to the research questions, particularly in a study that aims to analyze the relationship between school and teacher demographic factors and student achievement. This method ensures that the data collected are representative of the diverse educational contexts within Texas' secondary schools, thereby allowing for a comprehensive analysis of the factors influencing student performance on state-mandated assessments. The selection of schools for this study was guided by the objective of obtaining a broad yet relevant dataset that reflects the multifaceted nature of education in Texas, making the findings valuable for teachers, policymakers, and stakeholders in the field of education.

Instrumentation

To measure the achievement of the participants in the study, the STAAR test was used. The STAAR test is a state mandated test by which schools in Texas measure the achievement of students and assign grades for campuses. A lack of achievement on the STAAR test carries with it punishments particularly, for Title 1 campuses. Schools have been closed because of a lack of achievement on the STAAR test. Likewise, students have been held back a grade because they

did not reach a satisfactory score on the STAAR test. Schools who were awarded a distinction on the STAAR test have been heralded as schools that promote student achievement. Therefore, this study used the distinction as a variable to denote student achievement.

Data Collection

The data collection process for this study commenced once the institutional review board (IRB) of Texas Southern University granted its approval, ensuring adherence to ethical standards and protection of human subjects. The primary source of data was requested from the accountability department. These reports provide comprehensive information on academic performance, demographic characteristics, and other relevant educational indicators for schools in Texas.

For this study, a total of 20 high schools were selected (n=270 ELA teachers): 10 schools that have received the distinction designation and 10 schools that have not. This balanced approach was designed to allow for a comparative analysis between schools with differing performance levels. The selection criteria for these schools were based on their distinction status, ensuring that the sample was representative of the diverse range of high school educational environments within the state of Texas.

The data was meticulously gathered for each relevant variable, as defined in the study's codebook (Appendix C). This codebook serves as a guide to systematically convert qualitative data into quantifiable numbers, facilitating statistical analysis. The variables to be coded may include, but are not limited to, school demographics, teacher qualifications, student academic achievement, and other factors that may influence the earning of distinctions.

Once the data were collected and coded, they were input directly into the Statistical Package for the Social Sciences (SPSS). This software was chosen for its robustness in handling

large datasets and its capacity to perform complex statistical analyses. Using SPSS, various statistical techniques, including regression analysis, ANOVA, and correlation analysis, were employed to examine the relationships between the selected variables. This rigorous analytical process aimed to uncover patterns and trends that can provide insights into the factors contributing to the success or challenges of high schools in Texas, particularly in relation to their distinction status. The data collection and analysis process outlined was critical for achieving the study's objective of making a significant empirical contribution to the existing body of knowledge on educational leadership and its impact on academic achievement in secondary schools.

Reliability and Validity of the Instrument

The Texas Education Agency (TEA) commissioned an independent analysis of the STAAR test for validity and reliability in 2016 by the Human Resources Research Organization (HumRRO). Regarding the validity of the STAAR test HumPRO stated;

> …We identified evidence of the content validity of the assessments. The content review consisted of rating the alignment of each item to the Texas Essential Knowledge and Skills (TEKS) expectation the item was intended to measure. Overall, the content of the 2016 forms aligned with blueprints and the vast majority of items were aligned with the TEKS expectations for grades 5 and 8 mathematics and reading and grades 4 and 7 writing (p.1)

Regarding the reliability of the STAAR test HumPRO (2016) wrote that their work provided empirical evidence of the projected reliability. HumPRO (2016) concluded that, “projected reliability and conditional standard error of measurement (CSEM) estimates were all acceptable. Assuming the 2016 students’ scores had a similar distribution as the 2015 scores and assuming

similar item functioning, the reliability and CSEM estimates based on 2016 student data should be similarly acceptable" (p.1). This was the last time TEA evaluated the validity and reliability of the STAAR test.

Pilot Study

A pilot study is a test study conducted on a smaller scale to test research protocols, data collection instruments, sample recruitment strategies, and other research techniques in preparation for the main study (Creswell & Creswell, 2017). For this study two high schools were analyzed according to the steps outlined in this study. This data was entered into SPSS for practice analysis. The code books were edited to make designations clearer in the output tables regarding ethnicity and gender. The settings were adjusted so that the output tables were in APA 7 format.

Data Analysis

The Software Package for the Social Sciences (SPSS) was used to analyze the data collected for this study. The data was delivered in a .pdf format and typed directly into SPSS. Since SPSS only recognized numbers, all words and letters were assigned a value and a code book was created (Appendix C). Example: male = 1, female = 2. There are four assumptions associated with a Binary Logic Regression Test model:

Linearity: The relationship between X and the mean of Y is linear (Creswell & Creswell, 2017).

Homoscedasticity: The variance of residual is the same for any value of X (Creswell & Creswell, 2017).

Independence: Observations are independent of each other (Creswell & Creswell, 2017).

Normality: For any fixed value of X, Y is normally distributed (Creswell & Creswell, 2017).

The results of this analysis are reported in chapter 4.

Identification of the Independent and Dependent Factors

In the context of this study, the primary focus was on determining the factors that contribute to a school's ability to achieve a distinction designation. To this end, the dependent variable identified was the distinction status of the schools, specifically whether they were recognized as “distinguished” or not according to the Texas Education Agency's criteria. This binary variable serves as a key indicator of overall school performance and achievement.

The independent variables, or factors believed to influence the dependent variable, are comprehensive and encompass several aspects of school and teacher demographics. These include:

1. **Size of the School**: This refers to the total student population within the school. The study aimed to examine if there was a correlation between the number of students in a school and its likelihood of achieving a distinction.
2. **Class Size**: This variable considers the average number of students per classroom, exploring how class density might impact a school's distinction status.
3. **Attendance**: The study assessed the average student attendance rate, understanding its potential influence on the school's academic outcomes.
4. **Ethnicity of Teacher**: This factor involves analyzing the racial diversity of the teaching staff and its possible effect on the school's performance.
5. **Sex of Teachers**: The gender distribution among the teaching staff was another variable, given prior research suggesting gender dynamics can impact student learning outcomes.

6. **Cumulative Years of Experience of Teachers (CYE)**: This variable examines the correlation between teachers' professional experience and the school's achievement levels.
7. **Level of Education of Teachers**: The study considered the educational qualifications of the teachers, such as bachelor's, master's, or doctoral degrees, to understand how this aspect relates to school performance.

These independent variables were analyzed through a Binary Logic Regression Test model, a statistical method that allows for the assessment of the relationship between a dependent variable and one or more independent variables. The Binary Logic Regression Test provided insights into how these various factors individually and collectively contribute to the likelihood of a school being awarded a distinction. By examining these variables, the study aims to uncover actionable insights that can guide educational leaders and policymakers in enhancing school performance and achieving academic excellence.

Statistical Procedures

In this study, the statistical procedures involved modeling the relationship between a single dependent variable and multiple independent factors using Binary Logic Regression Test analysis, a method widely recognized for its efficacy in such analyses (Creswell & Creswell, 2017). The dependent variable identified was the distinction status of the schools, specifically whether they were recognized as 'distinguished' or not. The independent variables to be examined include the size of the school, class size, attendance, ethnicity of teachers, sex of teachers, years of experience of teachers, and level of education of teachers. These factors were analyzed using the Binary Logic Regression Test to understand their impact on the dependent variable.

The step-by-step process for conducting a Binary Logic Regression Test in SPSS is as follows:

1. **Data Entry**: Enter the data into SPSS. This involves inputting the values for each variable, ensuring accuracy and consistency with the study's codebook.

2. **Testing Assumptions**: Before running the regression analysis, key assumptions must be tested. These include linearity, independence, homoscedasticity, and normality. Testing these assumptions is crucial for the validity of the regression analysis.

3. **Running the Regression Analysis**:

    - Open SPSS and load the dataset.

    - Navigate to the "Analyze" menu, select "Regression," and then choose "Linear."

    - In the Binary Logic Regression Test dialog box, identify the dependent variable (school distinction status) and move it to the "Dependent" box.

    - Identify the independent variables (school size, class size, etc.) and move them to the "Independent(s)" box.

    - Adjust additional settings as needed, such as specifying interaction terms or applying transformations to variables.

    - Click "OK" to run the analysis.

4. **Interpreting Results**: Once the regression analysis was completed, SPSS generated an output that included regression coefficients, standard errors, p-values, and the R-squared value. These statistics were critically examined to understand the impact of each independent variable on the dependent variable.

5. **Reporting Results**: The findings from the regression analysis, including the test for assumptions, were comprehensively reported in Chapter 4 of this study. This included a detailed interpretation of the regression coefficients, the significance of the independent variables, and the overall model fit as indicated by the R-squared value.

Through this meticulous process, the study aims to delineate the influence of various school and teacher demographic factors on the achievement of distinction status in secondary schools. This analysis is vital for understanding the dynamics of educational success and for guiding future policies and practices in the educational sector.

CHAPTER 4: DATA AND ANALYSIS

The purpose of this correlational study was to examine the nature of the relationship between school and demographic factors and student achievement using data from the individual school's report. In today's educational landscape, the assessment of student achievement plays a pivotal role in shaping educational policies and practices. State-mandated testing has emerged as a critical tool for evaluating student proficiency and academic growth, providing valuable insights into the effectiveness of schools and teachers. As teachers strive to enhance student success and ensure equitable learning opportunities, it becomes imperative to explore the factors that may influence student performance on these standardized assessments. This study delves into the complex interplay between school and teacher demographic factors and student achievement on the State of Texas Assessment of Academic Readiness (STAAR) examination in English I and English II at the secondary level. Answers to the following questions were sought:

1. Do the teacher demographic factors (years of experience, gender, ethnicity, degree held) have a significant impact on the student achievement on the English I STAAR exam?
2. Do the teacher demographic factors (years of experience, gender, ethnicity, degree held) have a significant impact on the student achievement on the English II STAAR exam?
3. Do the school-related factors (size of school, attendance, average class size) have a significant impact on student achievement on the English I STAAR exam?
4. Do the school-related factors (size of school, attendance, average class size) have a significant impact on student achievement on the English II STAAR exam?

The sample for this study consisted of 267 secondary teachers in the North Texas area who instruct English I and English II students and their school demographics. The analysis for this chapter was divided into two major sections. The first section consisted of the demographic characteristics of the participants in the study. The second section addressed the testing of the null hypothesis formulated in the study. The logistic multiple regression was used to test the hypothesis generated in the study. All hypotheses were tested at the .05 level of significance or better.

Demographic Characteristics of Participants

There were 267 secondary teachers who participated in this empirical investigation. Only the participants' archival data was used. These secondary teachers have been described by their gender, ethnicity, years of experience, and degree held.

Gender

Table 1 presents the gender distribution among the 267 secondary teachers in this study, showing a clear majority of female participants. Specifically, 176 of the participants are female, accounting for 65.9% of the total population, while 91 participants are male, representing 34.1%. This distribution indicates that the study features a significantly higher number of female participants compared to male, with both groups together comprising the entirety of the study's participant base. (See Table 1)

Table 1

Frequency Distribution of Participants by Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	176	65.9	65.9	65.9
	Male	91	34.1	34.1	100.0
	Total	267	100.0	100.0	

Testing the Null Hypothesis

HO_1: There is no statistically significant predictable relationship between teachers' demographic factors (years of experience, gender, ethnicity, degree held) and ELA academic distinction status in English I.

Presented in Table 2 were the concerning logistic regression analysis to determine the predictable relationship between teachers' demographic factors (years of experience, gender, ethnicity, and degree held) and ELA academic distinctions status in English I on the STAAR examination. Regression results indicated the overall model of the four demographic predictors were not statistically reliable in distinguishing between those schools who did earn academic distinction in English I and those schools who did not earn academic distinctions in English I (-2 log likelihood = 209.653, x2 (4) = 8.836, P>.05). Moreover, according to NagelKerke R Square test, the variables years of experience, gender, ethnicity, and degrees held, combined accounted for 5.8 percent of the variance in ELA academic distinction status (See Table 2)

Table 2

Overall Model Fit Results Regarding the Relationship between Teacher's Demographics Factors and English 1 Academic Distinction

Model	Chi-square	df	P
Final	8.836	4	.065

Note. -2Log Likelihood = 209.653; Nagelkerke R Square = .058

The prediction of ELA academic distinction status was accurate in terms of correctly classifying those schools who earn academic distinction (85.8%) but not so in terms of those schools who would not earn academic distinction (14.2%) for an overall classification of ELA academic distinction of 85% percent. (see Table 3)

Table 3

Classification Table Results Regarding English 1 Academic Distinction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Distinction Earned	229	85.8	85.8	85.8
	Distinctions Earned	38	14.2	14.2	100.0
	Total	267	100.0	100.0	

Furthermore, the Wald statistics was used to measure the contributions of each individual predictor on the schools ELA academic distinction in English I on the STAAR examination. The

Wald test revealed that the variable years of experience ($Z= 5.470$, $p < .05$) was formed to be independent predictors of ELA academic distinction (see Table 4).

Table 4

Regression Coefficients Regarding the Relationship Between Teachers' Demographic Factors and English 1 Academic Distinctions

		B	S.E.	Wald	df	P	Exp(B)
Step 1[a]	Ethnicity	-.075	.147	.257	1	.612	.928
	Gender	-.564	.403	1.956	1	.162	.569
	CYS	-.064	.027	5.470	1	.019	.938
	Degree(s)	-.080	.412	.038	1	.846	.923
	Constant	-.842	.653	1.663	1	.197	.431

a. Variable(s) entered on step 1: Ethnicity, Gender, CYS, Degree(s).

HO_2: There is no statistically significant predictable relationship between teachers' demographic factors (years of experience, gender, ethnicity, degree held) and ELA academic distinction status in English 2.

Presented in Table 5 were the concerning logistic regression analysis to determine the predictable relationship between teachers' demographic factors (ethnicity, gender, cumulative years of service (CYS), and degrees held) and the achievement of English 2 academic distinctions on the STAAR examination. The regression coefficients, standard errors, Wald statistics, degrees of freedom, p-values, and odds ratios (Exp(B)) were calculated for each demographic factor. The analysis revealed that the overall model comprising these four

demographic predictors did not statistically significantly differentiate between schools that achieved academic distinction in English 2 and those that did not (-2 log likelihood = 218.193, χ^2 (4) = .296, P > .05). The Nagelkerke R Square indicated that the combined demographic factors accounted for a mere 0.2 percent of the variance in English 2 academic distinction status, suggesting a minimal influence of these variables on academic distinction achievement. (See Table 5)

Table 5

Overall Model Fit Results Regarding the Relationship between Teacher's Demographics Factors and English 2 Academic Distinction

Model	Chi-square	df	P
Final	8.836	4	.065

Note. -2Log Likelihood = 209.653; Nagelkerke R Square = .058

The prediction of ELA academic distinction status was accurate in terms of correctly classifying those schools who earn academic distinction (85.8%) but not so in terms of those schools who would not earn academic distinction (14.2%) for an overall classification of ELA academic distinction of 85% percent. (see Table 6)

Table 6

Classification Table Results Regarding English 2 Academic Distinction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Distinction Earned	229	85.8	85.8	85.8
	Distinctions Earned	38	14.2	14.2	100.0
	Total	267	100.0	100.0	

Furthermore, the Wald test was employed to evaluate the contribution of each individual predictor to achieving ELA academic distinction in English 2 on the STAAR examination. The analysis identified CYS ($Z = 4.470$, $P < .05$) as the only demographic factor that independently predicted the likelihood of obtaining an ELA academic distinction, with an odds ratio of .908, indicating a slight decrease in the likelihood of achieving academic distinction with each additional year of service. Other factors, including ethnicity, gender, and degrees held, did not show a statistically significant influence on the likelihood of achieving academic distinctions in English 2, as demonstrated by their respective p-values (ethnicity: $P = .612$, gender: $P = .162$, degrees held: $P = .806$). (see Table 7)

Table 7

Regression Coefficients Regarding the Relationship Between Teachers' Demographic Factors and English 2 Academic Distinctions

		B	S.E.	Wald	df	P	Exp(B)
Step 1[a]	Ethnicity	-.077	.147	.257	1	.612	.928
	Gender	-.564	.403	1.956	1	.162	.539
	CYS	-.014	.037	4.470	1	.029	.908
	Degree(s)	-.040	.402	.048	1	.806	.913
	Constant	-.840	.651	1.789	1	.190	.431

a. Variable(s) entered on step 1: Ethnicity, Gender, CYS, Degree(s).

HO_3: There is no statistically significant predictable relationship among school-related factors (size of school, attendance, average class size) and ELA academic distinction status in English 1.

Presented in Table 8 were the concerning logistic regression analysis to determine the predictable relationship of school factors (size of the school, average class size, and attendance) on the likelihood of achieving English 1 academic distinctions. The analysis detailed regression coefficients, standard errors, Wald statistics, degrees of freedom, p-values, and odds ratios (Exp(B)) for each school factor under consideration. The findings demonstrated that the overall model, incorporating these school factors, did not significantly predict academic distinction achievement in English 1 (-2 log likelihood = 218.193, χ^2 (3) = .296, P > .05). According to the Nagelkerke R Square, the model explained only 0.2% of the variance in achieving academic

distinctions, indicating a negligible effect of the examined school factors on academic distinction outcomes. (See Table 8)

Table 8

Overall Model Fit Results Regarding the Relationship Between School Related Factors and English 1 Academic Distinction

Final	Chi-square	df	P
Model	.296	1	.586

Note. -2 Log Likelihood = 218.193; Nagelkerke R = .002

The prediction of ELA academic distinction status was accurate in terms of correctly classifying those schools who earn academic distinction (85.8%) but not so in terms of those schools who would not earn academic distinction (14.2%) for an overall classification of ELA academic distinction of 85% percent. (see Table 9)

Table 9

Classification Table Results Regarding English 1 Academic Distinction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Distinction Earned	229	85.8	85.8	85.8
	Distinctions Earned	38	14.2	14.2	100.0
	Total	267	100.0	100.0	

Further exploration using the Wald test to assess the impact of each school factor individually on English 1 academic distinctions revealed that none of the factors significantly contributed to the likelihood of achieving academic distinctions. Specifically, the size of the school (Z = .285, P = .593), average class size (Z = 5.147, P = .593), and attendance (Z = .285, P = .593) each failed to demonstrate a statistically significant effect. The odds ratios associated with these variables suggest minimal to no influence on the probability of a school achieving an academic distinction in English 1. The constant term in the model was found to be significant (Z = 105.144, P = .000), indicating a baseline effect on the likelihood of achieving academic distinctions when controlling for the other factors in the model (see Table 10).

Table 10

Regression Coefficients Regarding the Relationship Between Teachers' School Factors and English 1 Academic Distinctions

Variable	B	SE	Wald	df	P	Exp(B)
Size of School	-217	.406	.285	1	.593	.653
Avg Class Size	-.090	.034	5.147	1	.593	.941
Attendance	-.245	.097	.285	1	.593	.805
Constant	-1.796	.175	105.144	1	.000	.166

HO_4: There is no statistically significant predictable relationship among school-related factors (size of school, attendance, average class size) and ELA academic distinction status in English 2.

Presented in Table 13 were the concerning logistic regression analysis to determine the predictable relationship of school factors—specifically, the size of the school, average class size, and attendance—on English 2 academic distinctions. This analysis aimed to determine the predictability of these factors in distinguishing between schools that did and did not achieve academic distinctions in English 2. The regression coefficients, standard errors, Wald statistics, degrees of freedom, p-values, and odds ratios (Exp(B)) were calculated for each factor. The results indicated that the overall model incorporating the size of the school, average class size, and attendance did not significantly predict the achievement of academic distinctions in English 2 (-2 log likelihood = 218.193, χ^2 (3) = .296, P > .05). The Nagelkerke R Square value was .002, suggesting that these school factors collectively accounted for only 0.2 percent of the variance in academic distinction outcomes, highlighting a minimal overall effect.

Moreover, individual analyses of each school factor using the Wald test did not reveal statistically significant contributions to the likelihood of achieving English 2 academic distinctions. Specifically, the size of the school (Z = .285, P = .563), average class size (Z = 3.147, P = .563), and attendance (Z = .485, P = .563) each showed no significant predictive value. The odds ratios for these variables indicated that changes in the size of the school, average class size, and attendance had little to no impact on the probability of a school achieving an academic distinction in English 2. The constant term of the model was significant (Z = 100.144, P = .000), signifying a base effect on the likelihood of achieving academic distinctions when all other variables in the model are held constant.

Moreover, individual analyses of each school factor using the Wald test did not reveal statistically significant contributions to the likelihood of achieving English 2 academic distinctions. Specifically, the size of the school (Z = .285, P = .563), average class size (Z =

3.147, P = .563), and attendance (Z = .485, P = .563) each showed no significant predictive value. The odds ratios for these variables indicated that changes in the size of the school, average class size, and attendance had little to no impact on the probability of a school achieving an academic distinction in English 2. The constant term of the model was significant (Z = 100.144, P = .000), signifying a base effect on the likelihood of achieving academic distinctions when all other variables in the model are held constant. (See Table 13)

Table 11

Regression Coefficients Regarding the Relationship Between Teachers' School Factors and English 2 Academic Distinctions

Variable	B	SE	Wald	df	P	Exp(B)
Size of School	-245	.406	.285	1	.563	.701
Avg Class Size	-.116	.033	3.147	1	.563	.843
Attendance	-.290	.105	.485	1	.563	.804
Constant	-1.706	.275	100.144	1	.000	.167

Summary

In Chapter 4 the researcher investigated the relationship between teachers' demographic characteristics, school characteristics, and the attainment of academic distinctions in English Language Arts (ELA) within a secondary school context in North Texas. The chapter utilized logistic regression analysis to assess the statistical significance of variables such as teacher ethnicity, gender, years of experience, level of education, as well as school factors like size,

average class size, and attendance rates, in their influence on student performance on the English I and II STAAR exams.

The analysis found that the demographic composition of teachers—largely female with a notable distribution across White, African American, and Hispanic ethnicities—did not have a statistically significant impact on achieving ELA academic distinctions. Teachers predominantly held Bachelor's degrees, with a smaller percentage possessing Master's degrees and an even fewer holding Doctorates. The level of education held by teachers was found to have minimal impact on the likelihood of securing academic distinctions. Regarding years of experience, the range among teacher participants was broad, from novices to veterans, yet this variable also did not show a significant effect on academic distinctions.

Similarly, school-related characteristics, including the size of the school, average class size, and attendance rates, were examined for their potential impact on academic success. The findings indicated that these variables did not significantly influence the achievement of ELA distinctions, suggesting that the physical and operational metrics of schools may not play a significant role in academic excellence as determined by the STAAR exams.

CHAPTER 5

SUMMARY, FINDINGS, DISCUSSION, AND CONCLUSION

The purpose of this correlational study was to determine the nature of the relationship between school and demographic factors and student achievement using data from the individual school's report. The overarching objective of this correlational research was to meticulously examine the dynamics of the association between various school and demographic factors and student achievement. This chapter aims to present a comprehensive analysis of the correlation between distinct school-related variables—namely, the years of experience of classroom teachers, the size of the student body, and student attendance rates—and demographic factors pertinent to teachers, which include gender, ethnicity, educational qualifications, and average class size. The focus of this analysis was on their collective and individual impacts on student performance, particularly in relation to the Reading Distinctions awarded per the State of Texas Assessment of Academic Readiness (STAAR) examination outcomes.

To systematically address this objective, the study was structured to respond to two pivotal research questions. First, it seeks to determine whether the demographic characteristics of teachers, encompassing their years of experience, gender, ethnicity, and the level of degree held, exert a significant influence on student achievement as measured by the English I and II STAAR examination. Second, the study investigates the extent to which school-related factors, including the size of the school, rates of student attendance, and average class size, impact student achievement on these examinations.

The findings from this investigation are intended to contribute to the broader understanding of how teacher demographics and school contextual factors interplay to affect educational outcomes in secondary schools. This chapter, therefore, delineates the results

obtained from the correlational analysis, offering insights into the implications of these factors for educational policy and practice, particularly in the context of enhancing student achievement in secondary education.

Findings

The study meticulously explores the impact of various factors on academic performance in Title 1 elementary schools in Texas, particularly focusing on the comparison of state testing scores between students in virtual and face-to-face learning environments. The logistic regression analysis, as detailed in the tables, delves into teacher demographic factors (such as years of service, gender, and ethnicity) and school-related factors (like the size of the school, average class size, and attendance rates).

The study's findings are insightful. It was determined that most of the variables under consideration, including gender, ethnicity, cumulative years of service, teacher's degree, size of the school, average class size, and attendance, did not show a statistically significant impact on the academic performance of students, as indicated by their state testing scores. These variables were thus deemed not significant in influencing educational outcomes within the specific context of this study.

The research contributes significantly to the body of knowledge on the effects of the transition to virtual learning necessitated by the COVID-19 pandemic. It offers empirical evidence regarding the variables that influence student performance in different learning environments, thereby providing valuable insights for teachers, policymakers, and researchers in the field of educational leadership. The findings underscore the complexity of factors influencing student learning outcomes and highlight the critical role of teacher experience in this dynamic. This study serves as a foundational piece for further research in this domain, especially in

understanding the long-term implications of such unprecedented shifts in educational delivery methods.

Discussion

In light of the literature reviewed in this study, the findings from the research present a nuanced perspective on the relationship between school and teacher demographics and student achievement in English I and II STAAR tests. The review of literature in this study highlighted various factors that potentially influence student achievement, including teacher experience, class size, school size, attendance, and teacher demographics like gender and ethnicity. The literature suggested a correlation between these factors and student success. For instance, Sorensen & Ladd (2020) noted that teacher experience positively correlates with student success on standardized tests and other measures like school attendance. Similarly, studies by Chang et al. (2020), Fischer (2018), and others underscored the significance of teacher's pedagogy, which improves with experience, in enhancing student performance. Also, class size debates, as discussed by Tahir et al. (2021), indicated a possible impact of smaller classes on better student outcomes. These findings set a foundation for the hypothesis that teacher and school demographics could significantly impact student achievement.

The review of literature posited various theories and findings related to teacher and school factors affecting student achievement. For example, Abbott (2022) emphasized effective strategies for development in higher education, while Beninghof (2020) focused on co-teaching structures for maximizing student learning. Carlana (2019) highlighted the impact of implicit stereotypes, particularly teachers' gender bias, on student outcomes. Additionally, Chang et al. (2020) explored the significance of teachers obtaining advanced degrees and their impact on student and school growth, underscoring the potential influence of teacher qualifications on

educational outcomes. Moreover, Curry et al. (2018) debated the importance of teacher credentials, and Goldhaber et al. (2019) advocated for a diverse teacher workforce, suggesting that teacher diversity could enhance student learning.

However, the findings of the present study contrast with these expectations. The Binary Logic Regression Test showed no significant predictable relationship between the teacher and school-related factors and the earning of ELA academic distinctions on the STAAR exams. This outcome diverges from the reviewed literature's implications, suggesting a more complex interplay of factors influencing student achievement than previously understood. It prompts a reevaluation of the impact of teacher demographics and school-related factors, indicating that other elements might play a more critical role in influencing student achievement on standardized tests.

The study's results, in the context of existing literature, highlight the intricate nature of educational success and the potential limitations of focusing predominantly on teacher and school demographics. While previous research has established a link between these factors and student achievement, this study's findings suggest that the relationship might not be as straightforward or as significant as previously thought. It calls for a broader exploration of factors influencing student achievement, possibly extending beyond the traditional focus on teacher and school characteristics. This could include examining student motivation, curriculum design, teaching methodologies, and broader systemic issues that collectively contribute to educational outcomes.

Implications

In light of the comprehensive review of literature undertaken in this study, it becomes increasingly apparent that addressing the complexities introduced by the sudden transition to

remote learning necessitates a multifaceted strategy. This approach should encompass a spectrum of policy initiatives, targeted professional development programs, and pedagogical adaptations. Collectively, these components constitute an intricate puzzle, the assembly of which was crucial for the realization of a more effective and inclusive remote teaching and learning milieu. Such a holistic perspective was imperative for mitigating the myriad challenges presented by this unprecedented shift in the educational paradigm, ensuring a seamless and equitable educational experience for all stakeholders involved.

Policy Implications

The findings of this study hold significant implications for educational policy formulation and implementation. The Binary Logic Regression analyses conducted in the study reveal that various teacher and school-related factors, including teacher gender, years of experience, racial demographics, and level of education, do not demonstrate a significant relationship with student performance on the English I and English II State of Texas Assessments of Academic Readiness (STAAR) tests. This lack of substantial association, as indicated by high p-values, suggests that these factors do not account for a significant portion of the variability in student achievement.

From a policy standpoint, these outcomes necessitate a reevaluation of current educational strategies and resource allocation. The traditional emphasis on teacher demographics and qualifications, as key determinants of student success, may need to be reconsidered. Policy efforts might be more effectively directed towards areas that have a more pronounced impact on student achievement. This could include investing in areas such as curriculum development, student engagement strategies, and technological resources, which may be more instrumental in enhancing student performance.

Furthermore, these findings underscore the need for educational policies that are based on empirical evidence. It is imperative that policy decisions are guided by research findings that reflect the actual dynamics of the educational environment. As such, continuous research and data analysis should be integral to the policy-making process, ensuring that educational strategies are both effective and responsive to the evolving needs of students and teachers. This study highlights the complexity of educational outcomes and the importance of adopting a nuanced and evidence-based approach to policy formulation in the field of education.

Professional Development Implications

The study's findings regarding the minimal impact of various teacher and school-related factors, such as teacher gender, years of experience, racial demographics, and educational level, on student performance in English I and English II STAAR tests, have profound implications for professional development in the field of education. The lack of a significant relationship between these factors and student achievement suggests that the focus of professional development initiatives may need to be realigned. Traditional professional development programs often emphasize enhancing teachers' content knowledge and teaching skills based on their years of experience or educational background. However, the study's outcomes indicate that these aspects may not be as influential in impacting student achievement as previously thought.

Consequently, professional development efforts should perhaps shift towards more innovative and holistic approaches that address a broader spectrum of factors influencing student learning. This could include training in adaptive teaching methods, incorporation of technology in the classroom, and strategies to foster student engagement and motivation. Emphasis might also be placed on developing teachers' skills in areas like classroom management, differentiated instruction, and socio-emotional learning, which have been shown to have a more direct impact

on student outcomes. Additionally, these programs could focus on fostering a collaborative and reflective teaching culture, where teachers continuously learn from each other and adapt their teaching strategies to meet the diverse needs of their students.

Moreover, the findings highlight the importance of ongoing research and data analysis in shaping professional development programs. As the educational landscape evolves, so too should the approaches to teacher training and development. Professional development programs need to be dynamic, evidence-based, and responsive to the emerging trends and challenges in education. By aligning these programs with the latest research findings, teachers can be better equipped to meet the changing demands of the profession and effectively enhance student learning outcomes. This study thus serves as a pivotal reference point for rethinking and redesigning professional development strategies in education.

Pedagogical Implications

The pedagogical implications of this study, which found minimal correlation between various teacher and school-related factors and student achievement on the English I and English II State of Texas Assessments of Academic Readiness (STAAR) tests, are significant and multifaceted. The outcomes suggest that factors like teacher gender, years of experience, racial demographics, and level of education do not substantially explain variability in student achievement, prompting a reevaluation of current instructional strategies. This insight suggests that teachers and curriculum developers should consider shifting their focus from traditional teaching paradigms that heavily emphasize teacher demographics as a determinant of educational success. Instead, there is a need to explore and integrate pedagogical approaches that directly address the diverse and individualized learning needs of students.

Incorporating innovative teaching methodologies, such as differentiated instruction, project-based learning, and technology-enhanced learning experiences, could prove more effective in enhancing student achievement. These approaches prioritize student engagement, critical thinking, and the application of knowledge in real-world contexts, aligning more closely with the skills and competencies required in the 21st century. Furthermore, the findings suggest that professional development for teachers should include training in these innovative pedagogical strategies, enabling them to effectively implement them in their classrooms. By shifting the pedagogical focus to more student-centered and adaptive teaching methods, teachers can better cater to the diverse learning styles and needs of their students, potentially leading to improved academic outcomes. The study thus provides a pivotal basis for rethinking and restructuring pedagogical practices in the educational system.

Student Achievement

The implications of this study for student achievement are profound, particularly in light of the findings that teacher and school-related factors such as teacher gender, years of experience, racial demographics, and educational levels do not significantly impact student performance on the English I and English II State of Texas Assessments of Academic Readiness (STAAR) tests. These outcomes suggest a need to reorient the focus away from traditional assumptions about the determinants of student success. This shift necessitates a broader perspective that encompasses a variety of other influences on student achievement.

First, this calls for an exploration of factors beyond teacher and school demographics that may significantly affect student learning and performance. These could include student-centered aspects like engagement strategies, individual learning styles, socio-emotional factors, and access to resources and support systems. Recognizing the complexity and multifaceted nature of

student achievement, teachers, and policymakers must consider a wider array of influences that extend beyond the classroom and school environment. This holistic approach acknowledges the nuanced and diverse needs of students, catering to their individual learning trajectories and fostering an environment conducive to optimal learning outcomes.

Furthermore, the findings highlight the importance of continual research and evaluation in educational practices to better understand the dynamics of student achievement. As the educational landscape evolves, so too must the strategies employed to enhance student learning. This involves not only reassessing the role of teacher and school demographics in student success but also rigorously examining and integrating evidence-based practices that directly address the multifarious challenges and opportunities in education. By adopting a more comprehensive and research-informed approach, the educational community can better facilitate and support student achievement, preparing students to navigate and succeed in an increasingly complex and dynamic world.

Recommendations for Further Study

In addressing the identified gaps and outstanding questions, subsequent research endeavors hold the potential to yield empirical evidence of considerable value. This evidence is instrumental in guiding policy decisions, informing the trajectory and content of professional development programs, enhancing technological solutions, and ultimately contributing significantly to the advancement of remote learning as a viable and enduring educational strategy.

Policy Perspective

Exploration of Alternative Influential Factors on Student Achievement: Future research should delve into exploring alternative factors that might influence student achievement,

given that traditional factors like teacher demographics and school characteristics have shown minimal impact. From a policy perspective, this could involve examining the role of systemic variables such as curriculum design, educational funding models, and school governance structures. Understanding these elements' impact on student performance could provide crucial insights for policymakers in their attempts to develop more effective educational strategies. This research could also extend to exploring the influence of community and societal factors, technology integration in education, and the role of parental involvement, thereby offering a more comprehensive understanding of the variables that truly impact student achievement.

Evaluation of Teacher Training and Development Programs: Considering the study's findings, there is a need for future research to assess the effectiveness of current teacher training and professional development programs. This research should aim to identify the specific aspects of these programs that are most beneficial for improving student outcomes. A policy-driven approach to this research could involve analyzing the alignment of teacher training with the actual needs and dynamics of contemporary classrooms. It could also explore the incorporation of innovative teaching methodologies and technologies in professional development programs. The goal would be to provide evidence-based recommendations for restructuring teacher education and ongoing professional development to better equip teachers to meet diverse student needs.

Investigation of Policy Interventions on Technology Utilization in Education: Further studies should be conducted to investigate the impact of policy interventions on the utilization of technology in education. This research would examine how different policies affect the integration of technology in teaching and learning processes and their subsequent effect on student achievement. Such studies could explore the effectiveness of various technology-related

policies, such as funding for digital resources, training for teachers in technology use, and the implementation of technology standards in schools. The findings could inform policymakers on how to optimize technology use in education systems, aiming to enhance both teaching efficacy and student learning experiences.

Professional Development

In light of the findings regarding the minimal impact of certain teacher and school-related factors on student achievement, future research from a professional development perspective should focus on the following areas: Future studies should assess the effectiveness of professional development programs in equipping teachers with the skills and knowledge to integrate technology effectively into their pedagogy. This research could explore the specific types of training that are most beneficial in enhancing teachers' technological competencies and their ability to use technology as a tool for engaging students and improving learning outcomes. Such studies would provide valuable insights for designing professional development programs that are aligned with the evolving technological landscape in education.

Given the diversity of student needs and learning environments, future research should examine how professional development programs can better prepare teachers for these challenges. This includes investigating the role of professional development in fostering adaptive and inclusive teaching strategies that cater to a wide range of learning styles, abilities, and backgrounds. Studies in this area could also explore the impact of professional development on teachers’ abilities to create engaging, supportive, and responsive learning environments, both in traditional and remote settings.

Future studies should investigate the long-term effects of continuous professional development on teacher efficacy and student outcomes. This research would aim to determine

how ongoing training and support influence teachers' instructional practices over time and the subsequent impact on student achievement and engagement. This area of research is crucial for understanding the sustained benefits of professional development and for informing policies and practices that support the lifelong professional growth of teachers.

Conclusions

In conclusion, the Binary Logic Regression Test outcomes provide a nuanced understanding of the relationship between teacher and school-related factors and student performance on the English I and English II State of Texas Assessments of Academic Readiness (STAAR) tests. The study found no significant association between various teacher demographics, including gender, racial demographics, CYS, and level of education, and student performance on these assessments. These findings challenge conventional beliefs about the impact of these factors on student achievement, suggesting that they may not be as pivotal as previously thought in influencing educational outcomes.

The results of the study obtained in the analysis further underscore this conclusion, indicating that these teachers and school-related factors do not explain a significant portion of the variability in student achievement. This insight holds critical implications for educational policy and practice, signaling a potential shift in focus from traditional teacher demographics to other elements that might play more influential roles in student learning and achievement. It prompts teachers, administrators, and policymakers to consider a broader spectrum of factors that could impact educational success, such as curriculum design, teaching methodologies, student engagement strategies, and the broader school environment.

In summary, the findings of this study illuminate the complex and multifaceted nature of student achievement within the context of secondary education. They highlight the need for

continued research and evaluation to identify and understand the myriad factors that contribute to educational outcomes. Moving forward, it is imperative that educational strategies and policies are informed by empirical evidence and are responsive to the evolving dynamics within education. This study contributes to the body of knowledge by providing a critical examination of the traditional assumptions about the determinants of student success and opens avenues for future research to explore other potential influences on educational achievement.

APPENDIX A: IRB APPROVAL

TSU TEXAS SOUTHERN UNIVERSITY
Office of Research

January 5, 2022

Good day, Kourtney Hines!

This is to inform you that your protocol **#ES060**, *"The Effects of Demographic and School Related Factors on Academic Distinctions of Secondary Schools"*, is exempt from Texas Southern University's Institutional Review Board (IRB) full committee review. Based on the information provided in the research summary and other information submitted, your research procedures meet the exemption category set forth by the federal regulation 45 CFR 46.104(d)(4):

Secondary research for which consent is not required

The Federal Wide Assurance (FWA) number assigned to Texas Southern University is FWA00003570.

If you have questions, you may contact the Research Compliance Administrator for the Office of Research at 713-313-4301.

PLEASE NOTE: (1) All subjects must receive a copy of the informed consent document, if applicable. If you are using a consent document that requires participants' signatures, signed copies can be retained for a minimum of 3 years of 5 years for external supported projects. Signed consents from student projects will be retained by the faculty advisor. Faculty is responsible for retaining signed consents for their own projects, however, if the faculty leaves the university, access must be made available to TSU CPHS in the event of an agency audit. (2) Documents submitted to the Office of Research indicate that information obtained is recorded in such a manner that human subjects cannot be identified directly or through identifiers linked to the subject; and the identities of the subjects will not be obtained or published; and any disclosures of the human subjects' responses outside the research will not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation. The exempt status is based on this information. If any part of this understanding is incorrect, the PI is obligated to submit the protocol for review by the CPHS before beginning the respective research project. (3) Research investigators will promptly report to the CPHS any injuries or other unanticipated problems involving risks to subjects and others.

This protocol will expire January 5, 2025

Sincerely,

Marion S. Smith

Marion Smith, PhD, Chair
Institutional Review Board (IRB)

APPENDIX B: REQUEST FOR DATA

Dear *Redacted* Independent School District,

Good afternoon! I hope this message finds you in great spirits. I am reaching out to kindly request your assistance once again, this time for a slightly different but very important purpose. I am currently in the dissertation phase of my educational research, where I'm diving deep into the fascinating world of teacher demographics and their impacts on academic achievements, specifically focusing on distinctions in ELA/Reading.

I'm in need of detailed, ungrouped teacher demographics information, which I understand can be found in the 'Staff Information' report. This data is crucial for a deeper, more nuanced analysis I aim to conduct for my study. Additionally, it would be incredibly helpful if the data could indicate whether the assigned schools have earned any distinctions in Academic Achievement in ELA/Reading.

Could I trouble you for guidance on how to obtain this information, preferably in an Excel or Google Sheets format? Any advice or assistance you could offer in this matter would be immensely appreciated. Thank you so much for considering my request. I look forward to any help you can provide, ensuring my research can proceed smoothly and effectively.

Warm regards,

Kourtney Hines

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