EFFECTS OF RACE MATCHING ON STUDENTS' SENSE OF BELONGING

AND ACADEMIC ACHIEVEMENT

by

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A DISSERTATION

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DISSERTATION ABSTRACT

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Title: Effects of Race Matching on Students' Sense of Belonging and Academic
Achievement

Race matching has positive effects on students' academic achievement and self-rated sense of belonging. However, when most public-school teachers identify as White, race matching is not always possible at the individual level. The present study extends current research to explore the effects of school-level diversity and race matching. Do the benefits of individualized student-teacher race matching extend to all students when the diversity of a school staff more closely matches the student body? Selected students and staff from elementary and high schools in a large public school in Oregon participated in the study. Utilizing a mixed methods design, quantitative academic achievement data and quantitative sense of belonging data were collected for students in grades 4-5, and qualitative data were collected for staff and 18-year-old students in high school. Statistically significant correlations were found between students' sense of belonging and oral reading fluency scores, and statistically significant differences existed between Latine and White students' academic scores. *Keywords:* race matching, sense of belonging, academic achievement, race, schools

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I would like to dedicate this dissertation to students everywhere. May this work do a little good, lead to some positive changes, or at the very least lead to some conversations and investigations that may lead to improvements for all our students.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION AND LITERATURE SYNTHESIS

In 1954, the Supreme Court set a precedent that racial segregation in schools was unconstitutional in their ruling in *Brown v. Board of Education* (1954). The Court believed they had a moral imperative to act and protect children from experiencing any further psychological or academic harm through the segregation of public schools (Stone, 2012). Over 65 years later, racial discrimination and inequitable outcomes such as disproportionate discipline, elevated dropout rates, and academic achievement gaps still exist for students of color in the United States school system.

Disproportionate Discipline

Disproportionate discipline, when rates of discipline incidences are disproportionately higher for students of a specific race, class, or demographic group as compared to their population size within the school, is one example of racial discrimination and inequitable outcomes within our school system. The overrepresentation of students of color in school disciplinary referrals continues, and research indicates that school factors within educators' control contribute to, and can help alleviate, disproportionalities (Fenning & Rose, 2007).

Elevated Dropout Rates

Nationwide, elevated dropout rates among students who identify as Black, Latine[1], Pacific Islander, or American Indian/Alaska Native reflect racial inequity in

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[1] Note on language choice: For the purposes of this dissertation, the term Latine will be used to describe a population of people represented by this research. This term is a gender-neutral equivalent of the term Latino, similar to Latinx. Participants represented by the term Latine may also identify as Latino, Latinx, Hispano, Hispanic, or Chicano.

United States public schools. In 2018, the dropout rates for students who identified as Latine, Pacific Islander, and American Indian/Alaska Native ranged from 8-9.5%, but the dropout rate for students who identified as White was only 4.2% (Hussar, 2020). To put this in perspective, what these numbers mean is that for every White student who drops out of high school, approximately two Latine, Pacific Islander, or American Indian/Alaska Native student drops out (Hussar, 2020).

Academic Achievement Gaps

Academic achievement gaps, patterns of disparities between different racial groups, have persisted for years, yet little research has established causes or possible solutions (Fram et al., 2007). Evidence of academic achievement gaps include discrepancies in reading and math scores as early as elementary school, and often mirror disproportionalities in high school graduation rates by race.

Review of Previous Research

To achieve equitable outcomes, disproportionate discipline, disproportionate dropout rates, and academic achievement gaps must be eliminated. Race matching is one promising strategy to improve graduation rates and other outcomes for students of color. Race matching (i.e., when a teacher and student share a racial identity) has positive short- and long-term effects on students' sense of belonging and academic outcomes (Dee, 2005; Egalite et al., 2015; Gershenson et al., 2017). Short-term benefits include better performance on standardized tests, more favorable teacher perceptions, and fewer discipline referrals (Bates & Glick, 2013; Egalite & Kisida, 2017; Gershenson et al., 2017). Long-term benefits include improved graduation rates and increased aspirations to attend a four-year college (Gershenson et al., 2017).

2

To uncover more information on race matching and its effects on student achievement and student sense of belonging in an educational context, I utilized peer reviewed journal articles ranging from older publications to recently published articles. I focused on accessing University of Oregon library databases and Google Scholar searches, but also expanded my findings by searching through dissertations. More specifically, I searched for articles in ERIC, APA PsycNet, Academic Search Premier, Education Database, Educational Research Review, and ProQuest Dissertations & Theses A&I. My search terms were "race matching and academic achievement," "race matching in schools," "race matching and sense of belonging" and "sense of belonging and academic achievement."

Academic Benefits of Race Matching

To evaluate the effect of race matching on academic achievement, researchers in a quasi-experimental study created models to control for other factors such as teacher race, quality, experience, and gender (Egalite et al., 2015). The researchers used an administrative dataset provided by the Florida Department of Education which included test scores and demographic data for over 2.9 million students in third through tenth grades enrolled in Florida public schools from the 2001-2002 school year through the 2008-2009 school year. Using this large convenience sample, researchers linked students to 92,000 teachers over seven years. They noted student and teacher race, as well as test scores, and tracked changes in achievement scores at an individual level. Individual students' results were compared over time, further controlling for the effect of extraneous variables. Researchers concluded that race matching has overall positive effects on students' reading and math achievement, with stronger positive effects for Black and

White students at the elementary level, and stronger positive effects for Asian/Pacific Islander students at the secondary level. In addition, researchers found that previously lower performing students benefited most from race matching. Students in this study showed increased achievement with just one race matched teacher, but evidence suggested they may benefit more from multiple years of race matching (Egalite et al., 2015).

A more recent study (Gershenson et al., 2017) confirmed previous findings that race matching provides students with short term benefits (Bates & Glick, 2013; Dee, 2005; Douglas et al., 2008; Egalite et al., 2015) and provided additional evidence that Black students in elementary school who are exposed to at least one Black teacher also experienced long term benefits, including improved graduation rates and a greater likelihood that the student will aspire to attend a four-year college. Researchers evaluated demographic data for students in North Carolina and Tennessee public schools and found that a "teacher's race...is a useful predictor of teachers' abilities to reduce demographic gaps in educational attainment" (Gershenson et al., 2017, p. 2).

More specifically, Black students who are assigned to a Black teacher at least once in their elementary years are more likely to graduate high school and aspire to attend college. These effects were found even stronger for males, and for students from chronically low-income families, as measured by persistent qualification for free or reduced lunch rates. When Black male students had at least one Black teacher, their dropout rates decreased by eight percentage points; they were effectively cut in half (Gershenson et al., 2017). While having multiple Black teachers in elementary school had a stronger impact on students, that impact was not statistically significant, indicating that

students need only one teacher to experience the long-term benefits of race matching (Gershenson et al., 2017)

Social and Emotional Benefits of Race Matching

In addition to academic effects, race matching between students and teachers leads to more favorable teacher perceptions and ratings of students (Dee, 2005). In a quantitative analysis of data from the National Education Longitudinal Study of 1988 to analyze the effects of race and gender matching on teacher's subjective evaluations such as behavior and performance, Dee used teacher survey data and included 24,599 female and male eighth grade students from over one thousand public and private schools across the United States. Four racial categories were analyzed in this study: White, Black, Latine, and Other. Approximately 26 students were randomly selected from each participating school, and two teachers were randomly selected to complete the surveys on those individual students, evaluating their perceptions of the students' classroom performance and personal traits. Evidence indicated that racial and gender dynamics have a large effect on teachers' perceptions of students, which can, in turn, affect students' classroom environment, engagement opportunities, and academic outcomes. A student whose teacher does not share their race is 36% more likely to be seen as disruptive, and 33% more likely to be seen as inattentive, which could lead to behavior referrals, classroom removal, missed instruction, or lost interest in school (Dee, 2005).

A later study confirmed these findings that teachers' perceptions, ratings, and discipline are influenced more by their own, as well as their students' race, than the students' behavior. Using kindergarten cohort data from the Early Childhood Longitudinal Study, authors examined the assessment of individual children by multiple

teachers over time and evaluated effects based on student and teacher race (Bates &

Glick, 2013). The sample consisted of 21,260 female and male students across the nation

who entered kindergarten between 1998 and 1999. The authors analyzed data from the

same students at four points in time, from kindergarten to fifth grade. Like previous

research, this study concluded that the same students receive different assessments of

their behavior based on differences in teachers' race (Bates & Glick, 2013). Black

students were more likely to be perceived as having problem behaviors than White

students when both had White teachers. However, those same Black students were rated

more positively, and as having fewer behavior problems, by their Black teachers,

indicating that race matching can combat negative racial stereotypes for historically

marginalized students (Bates & Glick, 2013).

To examine the effect of race on teachers' deficit thinking from students'

perspectives, Douglas et al. (2008) utilized retrospective interviews as part of a

qualitative research design, focusing on eight Black students and their experiences with

White teachers. All students were in grades 10-12, enrolled in predominantly White high

schools, had at least one White teacher, a cumulative 2.5 grade point average, and a

common adopted curriculum in their core classes. Data were gathered via the

transcriptions of one-on-one interviews using open-ended questions related specifically to

students' experiences with White teachers. Four themes emerged to inform suggestions

for improving conditions for Black students: students felt that their administration did not

understand or support them; that they were not respected by the teachers due to the color

of their skin; and that their teachers had negative perceptions or stereotypes about them

based on their skin color. Yet, they identified experiencing a sense of belonging at their

schools, a theme that seems contradictory to the previous three (Douglas et al., 2008). Unfortunately, the effects of racial stereotyping and discrimination these students identified are consistent with other findings (Bates & Glick, 2013; Dee, 2005; Douglas et al., 2008).

A similar study evaluated student reports of teachers' perceptions and attitudes on a larger scale (Egalite & Kisida, 2017). Researchers used data from more than 80,000 student surveys to evaluate how racialized and gendered interactions affected students' perceptions. Students in grades four through eight rated whether their teachers cared for them, influenced their effort or motivation, and challenged or encouraged them. The student and teacher samples included Black, Latine, and White participants. Overall, students had more positive perceptions when their teacher shared their same race and gender, and the largest negative effects were found when students had a teacher who did not share their race or gender (Egalite & Kisida, 2017).

Current Context

Systemic racism, fear, and violence continue to plague our society, our schools, and our students. With increasing incidents of police killings of people of color, and movements in support of Black Lives Matter being dismissed by All Lives Matter, more educators are being challenged by their students, their communities, their school districts, or internal imperatives to become antiracist. It is imperative that educators work to investigate the effects on students and schools and listen to those most affected to determine how to improve conditions and reduce academic disparities and disproportionalities.

Minoritized students experience stereotyping and negative perceptions from teachers who do not share their race (Bates & Glick, 2013; Dee, 2005; Douglas et al., 2008), which can lead to disproportionate discipline rates, lower sense of belonging, lower academic achievement, and lower graduation rates. Although race matching can combat these negative effects and increase positive outcomes for students (Bates & Glick, 2013; Dee, 2005; Douglas et al., 2008; Egalite et al., 2015; Gershenson et al., 2017) student and teacher demographics are nowhere close to matching in most public schools. Nationally, most public-school teachers identify as White.

In Oregon, the percentage of teachers of color is increasing, but so is the percentage of students of color, meaning the discrepancy between teachers' and students' race remains unchanged (Oregon Department of Education, 2020). In the 2019-2020 school year, 89% of teachers in Oregon identified as White, yet only 62% of students did (Oregon Department of Education, 2020). In the focal school district, disproportionate representation reflects state and national trends. While most students identify as non-white, most of the school staff identify as White. Specifically, 41% of the student body identifies as Latine, 5% as Multiracial, 2% as Native Hawaiian/ Pacific Islander, and 47% as White; yet only 9% of the teaching staff identify their race as Latine, less than 1% as Multiracial, and 88% as White. Regardless of their racial identity, students attending this district's schools, and most schools in Oregon, will most likely have a White teacher (Oregon Department of Education, 2020).

Present Study

Individual race matching has well established positive effects on academic outcomes (Douglas et al., 2008; Egalite et al., 2015), graduation rates (Gershenson et al.,

8

2017), and student and teacher perceptions (Bates & Glick, 2013; Dee, 2005; Egalite & Kisida, 2017), yet the effects of race matching at a school level on students' sense of belonging and academic outcomes have not been assessed. Most studies have focused on Black and White students and their experience with race matching, some have included Latine students, and fewer published studies focus on the experience of students who identify as Multiracial, Native American, or Native Hawaiian/ Pacific Islander. Further research is needed to determine if the individual effects of race matching can be generalized across multiple demographic groups within a K-12 public school system, and if the overall diversity of a school staff can lead to similar benefits for students.

Promising results from a 2020 study indicate that classroom diversity acts as a moderator for students who do not experience race matching; preventing the decreases in engagement, motivation, and academic achievement that students without race matched teachers experienced in non-diverse classrooms (Rasheed et al.). This finding is especially encouraging for students in districts with less staff diversity, as students without race-matched teachers could still benefit.

Can school level race matching lead to similar increases in student sense of belonging and academic achievement? What strategies can be deployed to support students' success, particularly in areas where race matching is not possible due to lack of teacher diversity? An analysis of race matching across a large K-12 public school system is integral in responding to these questions. Using a mixed methods design, I gathered information about the effects of teacher and student race matching on students' academic achievement and sense of belonging at a school level. With the use of purposive sampling, I compared schools with differing percentages of race matching, focusing

specifically on students who identify as Latine and White, to determine if there are differences in students' sense of belonging and academic achievement. In this study, I answer the following two research questions:

1. Does student and staff race matching at a school or district level lead to a greater sense of belonging and greater levels of academic success for students?
2. What strategies can teachers employ to support students whose races do not match their own?

CHAPTER II

METHODS

In this chapter, I describe: (a) the procedures for conducting the study; (b) the setting of the study; (c) the participants, including both their selection and demographics; and (d) the sources of data and analytic procedures I used for my dissertation.

Research Design

I conducted a mixed methods study with purposive sampling to explore the ways in which students' educational outcomes and sense of belonging are impacted by having a teacher whose race matches their own. I conducted this study in two parts, using a mixed methods approach and two distinct samples within a larger population. Benefits of a mixed methods approach include the ability to integrate "the insights provided by qualitative and quantitative research into a workable solution" that best answers specific research questions using a pluralist approach (Johnson & Onwuegbuzie, 2004, p. 16). Specifically, using a mixed methods approach for this study allowed me to extend upon prior research on race matching by asking students what effect their own and their teachers' race has on their perceived sense of belonging (using qualitative methods) and analyzing students' educational outcomes and self-reported sense of belonging.

By including qualitative interview data, I incorporated student voice and provided additional context to help deepen my understanding of the quantitative outcome data. I utilized this approach to allow for a deeper, more complete understanding of students' sense of belonging and academic achievement, and how these constructs relate to

students' racial identity within one school district in Oregon, focusing on suggestions for future research and practical recommendations.

Setting

This study was set within a large, diverse public school district in Oregon serving about 41,000 students. The selected district is one of the largest in Oregon, and the size and demographics of this district are similar to others across the state and nation, including Sacramento City Unified School District in California and Tacoma Public Schools in Washington state. Students in this district identify primarily as students of color (56%) and as White (42%). See Table 1 for the representation of students of color by racial group. There are 90 different languages spoken by students and families within this district, and 33% of students are or were ever identified as English Language Learners. Additionally, 70% of students in this district receive free or reduced-price lunch (a commonly used measure of socioeconomic status), and 17% of students receive Special Education (SPED) services.

Extant quantitative data from the spring of the 2021-2022 school year were included in part one of this study. De-identified demographic and academic data for all students in the selected schools was used for the quantitative analysis. In addition, I used qualitative survey and interview data from the winter of the 2022-2023 school year. Spring data were collected from February through May of 2022 and winter data were collected from March through April of 2023.

Table 1

Percentage of Students of Color Within the Studied District, by Identified Racial Group

Identified Racial Group	Percentage of Students within the Total Population
Latine	45%
Multiracial	5%
Asian	2%
Native Hawaiian/ Pacific Islander	2%
Black	1%
American Indian/ Alaska Native	1%

Participants

Extant data for students in grades 4-5 at all public elementary schools in the focal district were analyzed for part one of this study. Table 2 lists demographics for all participants in part one. For part two of the study, high school staff and 18-year-old students from the larger district sample were invited to participate in individual interviews and focus groups, using the informed consent process. A specific emphasis was placed on recruiting students and staff from diverse cultural backgrounds in all recruitment communication, due to the focus of the research.

High-school students and staff were the focus of the qualitative research to help connect elementary quantitative results to high school students' overall K-12 experiences; I aimed to draw conclusions across the broader system by analyzing elementary students'

academic and sense of belonging scores and 18-year-old students' lived experiences and opinions. 18-year-old high school students were the specific focus of recruitment efforts to ensure that participants were able to determine consent for themselves, rather than their guardians consenting to their participation. Using purposive sampling, relying on recommendations from school staff to gain participants, I recruited two students and one staff member to participate in individual interviews.

Table 2

Sample Demographics, Quantitative Research

Ethnic Group	4th grade	5th grade	Total
Latine	73	169	242
White	42	178	220

Sources of Data

For the quantitative analyses, school-level means and individual student scores were analyzed from the easyCBM passage reading fluency assessment, iReady math assessment, and Panorama surveys. Qualitative measures included individual interview responses. These responses were coded to identify themes and trends, and quotes were included to incorporate participant voice. Questions around sense of belonging included: *Describe how you feel at your current school,* and *can you tell me about a time when you belonged, or didn't belong at school?* These sources of data are described in greater detail below.

Part One: Quantitative Data Collection

For part one of my study, I used two extant sources of quantitative data: student level academic data in the form of easyCBM Passage Reading Fluency (PRF) scores and iReady composite scores, and sense of belonging data in the form of sense of belonging scores on the Panorama Survey to address the following questions:

1. Does students' academic performance differ based on race?

2. Is there a relation between students' perceived sense of belonging and their academic performance?

3. Does students' perceived sense of belonging differ based on (a) race and (b) grade level?

4. Do Latine students attending schools with greater staff racial diversity perform better on academic measures and/or report greater sense of belonging than Latine students attending schools with less staff racial diversity?

Additional information in the extant data set included students' school, identified race, grade level, and language program (bilingual or non-bilingual).

easyCBM

The easyCBM PRF assessment is one of three literacy assessments administered three times each year to all students in grades 1-5 in the school district where my study was set. The complete battery of easyCBM assessments varies per grade level, but for 4th and 5th grade students includes a measure of students' oral reading fluency, called the Passage Reading Fluency (PRF), a measure of students' vocabulary knowledge, and a measure of students' reading comprehension. Although reading comprehension is the

long-term goal for all students, the PRF measures growth in students' progress towards proficient reading, and performance on the easyCBM PRF measure is positively correlated with performance on the other easyCBM measures as well as on largescale assessments of reading (Alonzo, 2016). The PRF measure was selected in lieu of the comprehension or vocabulary assessments because the PRF scores have a wider range, and educators can more easily see individual student growth, even for students scoring in the *far below grade level* range.

In addition, the large number of students identified as language learners and enrolled in bilingual programs in the focal district make the easyCBM PRF an appropriate measure for this study. The PRF is a more accessible assessment for students acquiring English as a second language than either the Vocabulary or Reading Comprehension measures, as students only need to decode and read the words fluently on the PRF measure, rather than understand their meaning. Additionally, students in grades 1 and 2 in a bilingual program take the easyCBM PRF in Spanish three times a year, giving students in bilingual programs the same level of familiarity as English only speakers with the PRF assessment format when they begin taking the PRF in English in grade 3. Although easyCBM does include a Spanish-language vocabulary assessment, it does not include any comprehension measures in Spanish.

On the easyCBM PRF, students' reading fluency is determined by the number of words read correctly within a grade level passage in one minute, and students read one on one with an adult assessor, typically their classroom teacher. Accuracy and reading rate are measured through this assessment; prosody and expression are not. If a student reads all words correctly with no expression or with incorrect expression or punctuation, it does

not affect their score in any way. Conversely, there are no points awarded for reading with correct expression and prosody. There are a variety of PRF passages per grade level, and the passages increase in difficulty with each grade level and benchmark window.

For this study, easyCBM was the academic measure of literacy selected rather than the Oregon Statewide Assessment System (OSAS) state test because of the interest in sense of belonging data at the school level and the testing styles. Specifically, easyCBM PRF is an assessment tool used regularly throughout the year in grades 1-5 with which students are familiar, and it is typically administered one-on-one by the classroom teacher within students' classroom setting. In contrast, students complete the OSAS state test individually, without teacher support, once a year in grades 3-5 only. Thus, as academic achievement and its connection to student sense of belonging within a school is the focus of this study, easyCBM PRF is a more relevant measure.

The easyCBM system has both English and Spanish literacy measures, as well as math measures, but the PRF does not exist in Spanish beyond 2nd grade (Anderson et al., 2014). Students' scores are compared to national percentiles to determine if they are *at*, *above*, or *below* benchmark for their grade level and time of year (fall, winter, and spring benchmarks exist). For this study, I focused exclusively on 4th and 5th grade students' easyCBM English PRF scores from the spring benchmark window.

iReady

iReady is the district-adopted math curriculum at all elementary schools participating in this study. Students take the individual iReady assessment on a computer three times a year in the fall, winter, and spring. Like the easyCBM assessment, iReady is an assessment tool used regularly throughout the year in grades K-8 with which district

students are familiar, and it is typically completed by students individually on computers within their classroom setting. Additionally, iReady is used as a diagnostic tool, and is an adaptive assessment, meaning that each assessment is individualized and adjusts from the grade level baseline based on students' performance on previous questions, providing a more accurate description of students' mathematical skills, rather than solely a score of *meets*, *exceeds*, or *does not meet*, as provided by OSAS (Curriculum Associates, 2019). Additionally, scores on iReady are correlated with scores on statewide assessments such as the OSAS (Curriculum Associates, 2019). Thus, iReady was chosen as the second academic measure of focus rather than the OSAS state assessment.

The iReady assessment is created by the publishers of the iReady curriculum, and regular online work within an individualized learning pathway is also part of the curricular plan (Curriculum Associates, 2019). Students' performance is measured by the grade-level common core state standards, organized into four domains: Number and Operations, Algebra and Algebraic Thinking, Measurement and Data, and Geometry (Curriculum Associates, 2019). After completing the diagnostic assessment, students receive a score in each of the four domains, a composite score, and a scale rating of *on grade level*, *one grade level below*, or *two or more grade levels below*.

Panorama

As it is used in the district where this study is set, the term *Panorama* encompasses a series of surveys for staff, students and school community members created by Panorama Education. For this study, I analyzed students' sense of belonging composite score on the Elementary Supports survey. Students take this survey

individually on a computer, and they typically receive support in reading the questions aloud or explaining key terms from their classroom teacher or school counselor.

All students in the sampled district in grades 4-12 are supposed to take the *Panorama Elementary Supports* survey one to two times a year. It is optional for students in 3rd grade. The total survey typically takes students about 15 minutes to complete. Scores are compiled from related questions in each section of the survey and are assigned numeric values, ranging from 1 to 5, with 1 being the lowest, or least favorable response, and 5 being the highest, or most favorable response. For example, if a student scores a 5 in the *challenging feelings* domain, they "almost never", or "once in a while" struggle with those emotions, while a 1 signifies that they "almost always" or "frequently" experience those challenging feelings (Panorama Education, 2019). Similarly, a score of 5 in the *positive feelings* or *supportive relationships* domains signifies that a student has identified lots of positive feelings and supportive relationships, and a score of 1 signifies a lack of those feelings and relationships. Four questions contribute to the composite *Sense of Belonging* score:

- How well do people at your school understand you as a person?

- How much support do the adults at your school give you?

- How much respect do students at your school show you?

- Overall, how much do you feel like you belong at your school?

These questions were pared down from the Panorama Equity and Inclusion survey for students in grades 6-12 (Panorama Education, 2019). The original survey was created in partnership with the Harvard Graduate School of Education and its intent is to "help schools and districts track the progress of equity initiatives through the lens of student

experience, identify areas for celebration and improvement, and signal the importance of equity and inclusion to students, educators, families, and community members" (Panorama Education, 2019, p. 2). The survey was created with feedback from educational practitioners and relied on a review of survey design literature and an adherence to best practices such as phrasing items as questions and labeling all response options with words rather than numbers (Panorama Education, 2019).

The pilot sample included data from over 11,000 students at 22 public middle and high schools from six different school districts in three different regions in the United States and included males and females, English language learners, students receiving free or reduced-price lunch, and students who identified as White (33%), Latine (31%), Asian (20%), and Black (11%) (Panorama Education, 2019). An exploratory factor analysis was conducted three times, and after each round, questions were eliminated (Panorama Education, 2019).

The survey was evaluated for reliability, structural validity and convergent/discriminant validity, and strong evidence was found for all, including statistically significant correlations among items and statistically significant p-values for the factor analysis (Panorama Education, 2019). For the purposes of my study, this is a useful measure of students' sense of belonging because of its reliability and validity evidence, its routine administration to students in the sampled district, and its familiarity to students and staff.

Table 3

Assessment Measures Used Within the Studied District, by Grade Level

Measure Name	Construct Measured	Grade Levels in Which the Measure is Used
easyCBM PRF	Oral Reading Fluency	1-5
iReady	Math	K-8
Panorama	Sense of Belonging	4-12

Description of Quantitative Analyses

The dependent variable, academic performance, was measured by students' scores on the easyCBM PRF and iReady math assessments from the spring benchmark of the 2021-2022 school year. The independent variable, students' sense of belonging, was measured by a student survey in which students responded to questions surrounding their challenging feelings, positive feelings, and supportive relationships. Summed scores from related questions were used to create a composite score.

To respond to the question, does students' academic performance differ based on race, I used an Independent Samples *T*-Test to analyze if statistically significant differences existed by race for students in the specific sample, evidence of academic disproportionality in the focal district.

To answer the next two questions and determine if students' sense of belonging is related to academic performance, I conducted a correlation analysis using easyCBM PRF, iReady, and Panorama *Sense of Belonging* scores to determine if relations exist between sense of belonging and academic achievement, and if those relations differ for students in

different racial groups, in different grade levels, or based on school staff racial diversity. Additionally, I conducted Independent Samples T-Tests to determine if statistically significant differences existed in students' sense of belonging scores based on race and grade level.

To respond to the last question regarding students' performance based on the racial diversity in their schools, I used data from Oregon State School Report Cards from the 2021-2022 school year to create a numeric variable to represent racial representation for Latine students for the schools in the sample. In these analyses, the focus was on Latine students, as the majority of staff at all schools in this sample identify as White; thus, there is not a lack of representation for White students in any of the district's schools.

To determine if Latine students attending schools with more race matching experience greater sense of belonging and/or perform better on academic measures than Latine students attending schools with less race matching, I created a variable that I termed *representation.* School ratio scores were calculated by dividing the percentage of staff identifying as Latine by the percentage of students identifying as Latine, multiplying that number by 100, and rounding to the nearest whole number to eliminate decimals. The higher the percentage of staff identifying as Latine, the greater the *representation* score for that school. For example, a school with 20% of their students identifying as Latine but 0% of their staff identifying as Latine would have a representation score of 0 ([0/29] *100 = 0), and a school with 82% of their students identifying as Latine and 29% of their staff identifying as Latine would have a representation score of 35 ([29/82] * 100 = 35). Once I calculated the *representation* scores for each school, I added this calculated

variable to the individual student data in SPSS and ran correlations to determine if statistically significant relations existed for students' average academic performance based on their school's *representation* score. This analysis used school-level averages for all variables.

The rationale for creating scores using a ratio is that Latine students in schools with less Latine staff are less likely to experience race matching in their school than students in schools with more Latine staff, thus their representation score is lower. Schools with higher percentages of Latine students but the same percentage of Latine staff would have a lower representation score than schools with a lower percentage of Latine students and the same percentage of Latine staff, because students are less likely to have a race-matched teacher at the school with more Latine students as students are typically assigned to one classroom teacher per year at the elementary school level.

Part Two: Qualitative Data Collection

Part two of my study, which focused on the question: *What strategies can teachers employ to support students whose races do not match their own?* Relied on qualitative methods. I conducted individual in-person interviews at the student and staff level to further explore the possible relation between race matching, and/or other factors and sense of belonging as well as academic performance. District staff and high school students ages 18 and older were included in part two of the study. I selected this demographic because developmentally older students should be able to give responses that could more readily be coded, analyzed, and compared with adult staff member responses. I thought they would likely have a deeper understanding than younger students of the concepts *sense of belonging* and *racial identity*, and would be able to reflect on the

entirety of their experiences as a student at all grade levels, rather than just at elementary or middle schools. Additionally, students aged 18 and older at the high school level can decide for themselves whether to give consent to participate in the study, rather than consent being signed by adult guardians. It was important to me that participating students themselves, not their parents or guardians, provide consent to participate because while parents and other guardians have important information around students' school experiences, they are not the ones showing up to school each and every day. I wanted to hear directly from the students about their own school experiences and recommendations.

By intentionally differentiating the samples in part one and part two of the study, analyzing extant quantitative data at elementary school and qualitative data at high school, my intention was to gain a better understanding of the K-12 system from the students' and staff's perspective, thus allowing me to provide recommendations both for future research and to the district in supporting their students at all levels.

In conducting this study, I used purposive, maximum variation sampling by asking teachers, counselors, and administrators for their help in inviting participation from Latine students and staff (Rai & Thapa, 2004). I asked specifically for recommendations of 18-year-old students who represent multiple demographic groups, had spent the majority of their K-12 career enrolled in public schools, and might be willing to participate. I was able to recruit three participants via snowball sampling, as one teacher at one high school connected me with a student and a staff member, and a co-worker connected me with another student. I interviewed two students from one high school: one student who identified as Asian, and one student who identified as White. I interviewed one staff member from the same high school whose race will not be

disclosed to protect their privacy. Six other participants considered participation, but ultimately did not complete interviews.

Meaningful inclusion of student and staff voices was essential to my research. As a White woman, also with a position of authority within the district where this study was set, I am aware of the ways in which my own biases and cultural experiences could affect my interpretation of the data. Through partnering with students and school staff during my study, I hoped to make recommendations that authentically represent what our students say they need to feel a strong sense of belonging and experience academic success at their schools. Students and staff were asked questions about sense of belonging and its definition, and how they feel their race does or does not contribute to their experience of belonging and success in school. A complete list of interview questions is provided in Appendix A.

Qualitative Instruments

For part one of this study, I relied on academic and sense of belonging measures as described earlier. For part two of this study, I conducted semi-structured in-person interviews. Semi structured interviews best fit the research questions for this study because they focus participants' attention on "a particular situation or phenomenon they have experienced," while still asking the same questions of all participants, allowing for comparison and analysis across items (McIntosh & Morse, 2015). In this study, utilizing the semi structured interview approach allowed me to place questions in a particular order and focus participants' responses on their experienced sense of belonging both overall, and as connected with their racial identity. It also allowed me to ask follow-up questions for further clarification, and to compare participants' responses and analyze

trends. Due to limited participation, I was unable to compare responses between racial groups. However, I did compare students' and staff responses, analyze trends, and note differences.

I did not conduct any student or staff focus groups. All students and staff were offered a choice to participate either individually in an interview or in a focus group setting. Providing this choice was intended to enhance participants' comfort level by offering them a choice to have a trusted person or people with them, or have their responses remain more confidential by meeting only with the researcher. All participants selected an individual interview.

Data Collection Procedures and Data Analysis Plan

For part one of my study, I used extant quantitative academic, demographic, and sense of belonging data from all fourth and fifth grader students within the studied district. I ran descriptive statistics on their easyCBM PRF scores, iReady composite scores, and sense of belonging scores from the Panorama Survey. Then I ran correlations between students' sense of belonging and academic data, organized by grade and student racial groups. This analysis was used to respond to the research questions in part one regarding the relation between sense of belonging and academic achievement, and if those relations differ for students in different racial groups, in different grade levels, or based on school staff racial diversity.

For part two, I worked with school staff to try to recruit participants from all comprehensive high schools, gained informed consent, and conducted interviews to gather qualitative data. I used coding methods outlined by Miles and Huberman (1994) to complete the qualitative analysis and respond to the research question: *What strategies*

can teachers employ to support students whose races do not match their own?

Specifically, I identified codewords that would bring up the most salient and relevant

quotes and themes from the research that I could use in analyzing my qualitative results.

Codewords pre-identified were "*race*," "*belong*," and "*teachers*." Additional codewords

identified as clusters and themes during data analysis included *"bias," "connection," and*

"friends." These codewords aided in "noting relationships between variables" and

"building a logical chain of evidence" (Miles & Huberman, 1994, p. 246). This approach

helped me not only to identify trends, but also to incorporate quotes and feedback from

interviews that related a sense of belonging with academic performance or provided

information on strategies staff can use to support all students, including those whose race

does not match their own.

CHAPTER III

RESULTS

In this chapter, I first present the results of the quantitative phase of my study, organized by research question, and then the results of the qualitative phase.

Part One: Results of Quantitative Data Analysis

Students in the sample included fourth and fifth graders at 42 public K-5 elementary schools within the sampled district who completed all three relevant assessments during the spring 2022 benchmark window. Scores for 5,219 students were originally received from the district, and all data that lacked testing information were eliminated. For example, if students completed the easyCBM literacy assessment and the iReady math assessment, but they did not complete the Panorama survey, their scores were removed. Most cases that were eliminated were missing the Panorama sense of belonging data, reducing the sample size by 4,664. See Table 4 for a visual representation of the missing values.

Table 4

Assessment Completion Rates

Assessment Name	Number (and %) of Students Who Completed the Assessment
easyCBM PRF	5,219 (100%)
iReady Math	5,155 (99%)
Panorama	555 (11%)

Next, I retained only the values for students who identified as "Hispanic/Latino" in the ethnicity category (coding them as members of the "Latine" student group), and students who identified as "Not Hispanic/ Latino" in the ethnicity category and "White" in the race column (coding them as members of the "White" student group). This step further narrowed my sample to 471 students. Last, I removed nine students whose scores were connected to an online program or charter school, as students could come from any combination of the 42 residence schools to participate in those programs, making it impossible for me to link their scores to a particular school in a meaningful way. This step narrowed the final sample to 462 total students; all 42 district elementary schools were represented in the final quantitative sample.

Question One: Does students' academic performance differ based on race?

I ran Independent Sample *T*-Tests to compare Latine and White students' academic scores (see Table 5). There was a statistically significant difference in Latine students' easyCBM scores (*M*=102.07, *SD*=45.57) and White students' (*M*=128.91, *SD*=50.49); *t*(465)= -6.04, *p*=.293, with Latine students scoring an average of 26.84 correct words per minute less than White students. There was also a statistically significant difference in Latine students' iReady math scores (*M*=431.5, *SD*=33.49) and White students' (*M*=453, *SD*=29.54); *t*(460)= -7.39, *p*=.365, with Latine students scoring an average of 21.8 points lower than White students. In the focal district, students' academic performance did differ by race, with Latine students scoring significantly lower on both reading and math measures.

Table 5

Independent Samples T-Test Group Statistics, Academic Scores

Group, Measure	*n*	*M*	*SD*
Latine, easyCBM	242	102.07	45.57
White, easyCBM	225	128.91	50.49
Latine, iReady	242	431.5	33.49
White, iReady	220	453.3	29.54

Question Two: Is there a relation between students' perceived sense of belonging and their academic performance?

In responding to this question, I calculated descriptive statistics and ran correlations between easyCBM PRF scores, iReady math scores, and Panorama Sense of Belonging scores for all 462 students in grades four and five. The mean easyCBM reading fluency score was 115 correct words per minute (*SD*=49.79), with a minimum of 0 words read correctly and a maximum of 245 words read correctly. The mean iReady Math score was 441.88 (*SD*=33.46), with a minimum of 292 and a maximum of 537. The average Panorama Sense of Belonging score was 3.24 (SD=0.52), with a minimum of 1.75 and a maximum of 4.5 (see Table 6).

There was a statistically significant positive correlation of 0.10 between students' sense of belonging and oral reading fluency scores ($p < 0.05$). However, I found no statistically significant correlation between students' math scores and their sense of belonging scores.

Table 6

Descriptive Statistics and Correlations for easyCBM, iReady & Panorama scores

Variable	*N*	*M*	Confidence Intervals Lower	Upper	*SD*	Sense of Belonging (Panorama)
easyCBM PRF	467	115	.01	.19	49.79	**.10***
iReady math	462	441.88	-.10	.08	33.46	-.01
Panorama	462	3.24	1.75	4.5	0.52	--

* Correlation is significant at the 0.05 level (2-tailed)

To determine if the identified relations differed for students in different racial groups and in different grade levels, I ran an additional correlational analysis between easyCBM PRF scores, iReady math scores, and Panorama Sense of Belonging scores, organized by groups. When analyzing relations by race, a statistically significant positive relation existed for Latine students between sense of belonging and reading fluency ($R =$ .22), significant at the .01 level. For White students, there was no statistically significant relation between sense of belonging and either academic measure.

When further analyzing relations by race and grade levels, fourth grade Latine students exhibited statistically significant positive correlations between sense of belonging and reading scores ($R = .38$), and between sense of belonging and math scores ($R = .39$), both significant at the 0.01 level. In contrast, for fifth grade Latine students, no statistically significant relations existed between sense of belonging and either academic measure.

Similar to the results found when analyzing all White students, there were no statistically significant results found between sense of belonging and either academic measure for White fourth or fifth grade students. See Table 7 for more specific information, including confidence intervals.

Table 7

Correlations Between Academic Measures and Sense of Belonging Scores, Organized by Race & Grade Level

Sample	*n*	Sense of Belonging & easyCBM	Confidence Intervals		Sense of Belonging & iReady	Confidence Intervals	
			Lower	Upper		Lower	Upper
All Latine	242	**.22****	.09	.34	.1	-.03	.22
4ᵗʰ grade Latine	73	**.38****	.16	.56	**.39****	.18	.57
5ᵗʰ grade Latine	169	.12	-.03	.27	-.07	-.22	.08
All White	220	.04	-.09	.17	-.08	-.21	.06
4ᵗʰ grade White	42	.18	-.13	.45	.12	-.19	.41
5ᵗʰ grade White	178	.00	-.14	.15	-.13	-.27	.02

** Correlation is significant at the 0.01 level (2-tailed)

Question Three: Does students' perceived sense of belonging differ based on (a) race and (b) grade level?

I ran Independent Sample *t*-Tests to compare Latine and White students' sense of belonging scores, and fourth and fifth grade students' sense of belonging scores (see Table 8). There was not a statistically significant difference between Latine students'

sense of belonging scores (*M*=3.28, *SD*=0.50) and White students' (*M*=3.2, *SD*=0.54); *t*(465) = -0.398, *p*=.345. There was also not a statistically significant difference between fourth grade students' sense of belonging scores (*M*=3.22, *SD*=0.55) and fifth grade students' (*M*=3.25, *SD*=0.52); *t*(465)= 1.5, *p*=.067.

Table 8

Independent Samples t-Test Group Statistics, Sense of Belonging Scores

Group	*n*	*M*	*SD*
Latine	242	3.28	.50
White	225	3.20	.54
4th grade	116	3.22	.55
5th grade	351	3.25	.52
Total	467	3.24	.52

Question Four: Do Latine students attending schools with greater staff racial diversity perform better on academic measures and/ or report greater sense of belonging than Latine students attending schools with less staff racial diversity?

To determine if students attending schools with more Latine staff perform better on academic and/or sense of belonging measures than students attending schools with less race matching, I conducted a school level analysis and ran correlations to determine if statistically significant relations existed for students' academic scores and/or Panorama Sense of Belonging scores based on *representation.* As mentioned previously, the *representation* variable is a ratio score that reflects how closely a school's Latine staff percentage matches a school's Latine student percentage. All schools in the sample had a

greater or equal percentage of White staff than White students. Thus, for this analysis, only Latine students' scores were included, and correlation analyses were conducted at the school level between Latine students' mean scores on iReady, easyCBM PRF, and Panorama assessments and each school's *representation* score. Of the 42 schools in this sample, only 36 had Latine students' scores represented, thus only those 36 schools were included in this final correlation analysis. There were no statistically significant correlations found between students' school *representation* and any academic or sense of belonging measure (see Table 9).

Table 9

School-Level Correlations for easyCBM, iReady, Panorama & Representation

Variable	*n*	*Representation*	Confidence Intervals	
			Lower	Upper
PRF	36	.09	-.25	.41
iReady	36	.09	-.25	.40
Panorama	36	.06	-.28	.38

Part Two: Results of Qualitative Data Analysis

In total, three participants agreed to participate in individual interviews, which were conducted in person at one high school. The two student participants self-identified as Asian and White; the staff member's racial identity will not be shared due to limited staff participation and IRB requirements to protect participant identity. Trends identified were consistent across the two student and one staff member interviews.

Sense of Belonging

Both students defined a sense of belonging as feeling comfortable, safe, having connections with others, and actively participating in school and school activities. One participant summarized the term generally as, "I …feel like I fit in" here. The staff participant echoed students' sentiments and defined belonging as "do you feel welcomed where you are in the environment, and do you feel purpose in your environment?"

All participants mentioned that a student's sense of belonging often varies based on classroom, activity, or peer group. For example, both the staff member and one of the students specifically mentioned how students act differently in different classes based on their relationship with the teacher or the subject, and in different settings such as sports teams or clubs. The staff member also mentioned noticing students' differing behavior in different classes or settings, similar to how the students described a differing sense of belonging in different classes, clubs, or groups.

One student participant shared how their sense of belonging is shaped more by a specific activity than the school in general: "and then there's sports. I feel like I belong more to … my golf team… than …at school, because …I belong to the golf team." All participants made specific mention of how they themselves, or students in general, feel more comfortable and experience a greater sense of belonging in specific classes, clubs, or teams and that their behavior changes based on that comfort level. Participating in clubs, sports, or activities was mentioned by all three participants as a school goal specifically promoted by school staff.

Both the staff member and the students mentioned students' physical presence, attitude, and participation as indicators of a positive sense of belonging. For example, the

staff member and one of the students both mentioned that students show they belong by choosing to attend classes or not, and the staff member added that "we have an open lunch, and so they could easily just leave campus, but a lot of them choose to eat with us…in our classrooms, that's one way that I've noticed" students demonstrate belonging. The staff participant elaborated, sharing examples of when students want to see their teachers, thank them when they graduate, or just say thank you, "I feel like that shows huge sense of belonging." A student participant noted that they remain in contact with one of the teachers who "really stood out to me" adding that "he wrote me a letter [of] recommendation for my colleges" and "I want to invite him to my graduation."

Both student participants mentioned specific teachers by name and how they helped them feel a sense of belonging. For example, one participant shared, "it's little things…that teachers do that recognize you as an individual, not a number that I think build(s) the connection first with the teacher, and then if you have the connection with the school, it just builds and you just feel at home here." Another student described how a teacher changed their opinion of, and success in, a subject area they had previously struggled with because this teacher's style of teaching was more "hands-on," adding that they earned an A in that class and now act as a Teacher's Assistant for the teacher.

Both students and the staff member discussed examples of how and when students do not feel a connection to the teacher and how that affects their sense of belonging in the environment. The staff participant explained it as students having a "willingness to listen to you or…do what you ask [of] them" or not. One student participant shared, "I've seen teachers that will jump to conclusions when kids are of a different race…there's a lot of systematic bias against students" and described a class in which only four of the enrolled

24 students consistently attended class because the teacher "ostracized" students based on their differing beliefs. They also shared, "I have a really good friend who really doesn't believe she belongs in a lot of classes because of the racial biases against her," concluding that "the implicit bias that people have can really affect sense of belonging because it's difficult to build a connection with your teachers, and that's one of the key things in having a sense of belonging at school."

Academic Success

All participants mentioned relationships between staff members and students, including staff members showing that they care about students, being flexible, and differentiating expectations and support as critical to academic success. When asked about how teachers can support students' academic success, one student participant explained, "it's just based on how they teach it. So not because of their background and stuff. It's just like if they can teach it well to me, I'll listen, and if they don't, I'm gonna struggle all year." They discussed the importance of teachers paying individual attention to certain students, ensuring all have equal voice in the classroom and equal opportunities to participate, not just those who feel more comfortable talking in class. They described how some students who are more reserved or less confident can feel dissuaded from participating when certain students always talk first or the most, noting that some students need "a little push" from teachers to participate in class and feel that their input matters. They explained how when teachers have the same expectations of all students, it "kind of takes away…treat all students the same, because…we're not really all the same."

Both students gave examples of how specific teachers differentiated, or did not differentiate, expectations and support. One student participant shared that their favorite

teachers were the ones who pushed them to do better, or provided more challenging work when class material came more easily to them. Another student explained that some teachers appear to think all students strive to earn As, and how that can be dismissive or offensive, as some students work hard to earn a C and are proud of passing that class. Rather, they prefer it when teachers ask students their individual goals for the class and support them in reaching those.

Suggestions from Participants

When asked about which strategies teachers can employ to support students whose races do not match their own, one student discussed implicit bias at length, suggesting that all teachers go through bias trainings to work towards, "making those classrooms an open space for everyone." They also mentioned, "having those open conversations, reading those loads of books on bias," and most importantly, "having conversations with students of color on, like, how can I help you succeed?" reiterating their belief about the importance of having open conversations. They also added that we are all human, and we all have implicit bias, so they appreciate when teachers recognize "when [they] do have moments where [their] implicit bias shows, taking that time to reflect on [themselves] and go, okay, why is that happening? And then, how can I address that moving forward?" The staff participant agreed that "there's room for improvement," adding "I think there are students who don't feel recognized, especially in the LGBTQ community" and suggested including more representative texts within course curriculum to enhance inclusion of students' different experiences.

All participants discussed the importance of connections and positive relationships between students and teachers, and among students. One student participant

identified connections with teachers as "one of the key things in having a sense of belonging at school" and the other mentioned friends, having them at school or not, as a key factor in feeling connected to a school or classroom, and in describing how they reflect on their K-12 school experience. The staff participant described how students need to know that "teachers want a relationship with them, and that they have…some kind of community within the school." They elaborated to provide a specific example, describing how one group of students within the school is "like an in-group. It's definitely just them, and they feel safe with each other, and they speak a language that only they know, and then they have a teacher [who] …speaks their language, and it's kind of like…that, you know, niche group." As an outsider of that group, the teacher reflected that what those students "don't notice is…our willingness to recognize that they're different, but not in…a bad way, and I think our school could definitely do better or have better trainings or like recognition of that."

Despite the small sample size, the two students and one staff member who agreed to participate in interviews provided useful feedback that did, in fact, help deepen my understanding of the topic.

CHAPTER IV

DISCUSSION

I begin this chapter by discussing the limitations of my study, then connecting my findings to prior research. I end by discussing implications for practice and the need for future research.

Limitations

I made conscious decisions to address threats to validity in the design of my study, including not recruiting from my own workplace or school level, and not using my position of power to recruit former students or staff, addressing social desirability bias, selection bias, and experimenter effects. However, my position as a leader in the district, as a White woman, and as an unknown researcher to those I was attempting to recruit likely influenced participants' willingness to participate in interviews or focus groups.

Hence, participation was the biggest limitation in this study; both in the quantitative and qualitative phases. When cleaning the quantitative data, samples were reduced dramatically from the initial 5,219 students in my dataset to a rather disappointing 462 total participating students remaining. This loss of data comes directly from lack of participation with the Panorama survey, with merely 11% of students in the sample completing the required assessment. As the Panorama survey measures belonging, one of the focal points of my study, it was disheartening as a researcher and as a district leader, to discover how few teachers had administered what should have been a required assessment. The fact that the vast majority of fourth and fifth-grade teachers in the district *did* have their students complete both easyCBM and iReady but *not* the

Panorama indicates that systemically, less importance is placed on listening to students' voices and opinions than on measuring their academic prowess. The patterns in the gaps in data suggest that district-wide, the majority of fourth and fifth-grade teachers opted to have their students skip the Panorama survey, although at least one teacher in each school administered the survey because all elementary schools in the district were represented in the dataset, albeit poorly.

For the qualitative sample, I was only able to conduct interviews with three participants: two students and one staff member, all from the same high school. Five additional staff members and one additional student expressed interest in participating, but the student was only 17 years old, and the staff members were unable to confirm a date and time to participate due to work or personal commitments.

Additionally, the focus of the quantitative data was on students that identify as Latine and White, and although a specific emphasis was placed on recruiting students who identify as Latine, only two students participated in this study, none of whom self-identify as Latine. This further limits the generalizability of results due to such a small sample size and limited representation of students and staff with diverse identities, as was the primary objective. Thus, it is difficult to make connections between the qualitative and quantitative results, as had been my intention.

Despite these very real limitations, my study still provides some interesting findings.

Key Takeaways

Does student and staff race matching at a school or district level lead to a greater sense of belonging and greater levels of academic success? Further research is needed to

confidently answer this question. Although this study does indicate that academic disproportionalities still exist by race, with Latine students in this sample scoring significantly lower on both reading and math measures than White students, and provides evidence that sense of belonging is positively correlated with academic performance, which could indicate that if schools work to increase students' self-reported sense of belonging, they may also see an increase in students' academic achievement, my sample was too small to provide a robust answer.

There were statistically significant positive correlations between students' increased sense of belonging and improved reading fluency scores for all students, supporting prior survey research conducted with Latine students that improved sense of belonging is linked to improved academic scores (Dee, 2005), and in line with participants' comments around teacher connectedness and individual variations in teachers' perceptions influencing students' willingness to participate in and attend class, as well as their overall success in school. Additionally, the easyCBM PRF assessment is conducted individually, typically by a student's classroom teacher, which could help explain the correlation between sense of belonging and performance. If students feel more comfortable with their teacher, and at ease in their school or classroom environment, then they may be likely to perform better on a reading assessment administered one-on-one by their classroom teacher, such as the easyCBM PRF.

An additional statistically significant correlation was found for fourth grade Latine students between sense of belonging and math, supporting prior research that these effects may be stronger for students of color than for White students (Bates & Glick, 2013). Student comments further affirmed this study's findings, sharing that teachers'

implicit bias can lead to negative racial stereotypes for historically marginalized students, preventing them from feeling connected to or welcomed in certain classrooms within their school (Bates & Glick, 2013). This finding could indicate that Latine students'— particularly fourth grade Latine students'— academic scores are more affected by their perceived sense of belonging than other student groups. However, it is important to note that these could be spurious correlations. With such a small sample size and inconsistent findings of a relation between reading and math performance and sense of belonging and between these relations, when sorted by grade level and demographic group, the likelihood of spurious correlations must be considered. Further research with larger samples is needed to help determine the implications of these findings.

Students and staff members all discussed sense of belonging being affected by participation in smaller groups or school communities in which students share common interests or experiences, and the staff member described how a group of students who share the same racial identity and language as a teacher at the school seem to experience greater belonging in that setting. This could be further evidence to indicate that classroom or school diversity acts as a moderator for students who do not experience race matching; preventing the decreases in engagement, motivation, and academic achievement that students without race matched teachers experience in non-diverse classrooms (Rasheed et al., 2020) by providing students a safe space within the larger school community.

Although I found no statistically significant differences in students' sense of belonging by racial group or due to school level race-matching via the *representation* variable, students and staff participating in this study agreed that positive relationships between students and staff affect participation, sense of belonging, and academic success,

and prior research indicates that race-matching at the individual level has positive short- and long-term effects on students' sense of belonging and academic outcomes (Dee, 2005; Egalite et al., 2015; Gershenson et al., 2017). Thus, further research with a larger sample may uncover more information on the potential benefits of school-level race matching that support increasing staff diversity, or other factors or strategies in addition to race-matching may be identified that teachers can employ to support students from all backgrounds. For example, school experiences appear to be shaped by relationships with teachers and peers. These connections, or lack thereof, appear to influence students' memories of their overall experience, and their perceived sense of belonging, both their own and other students.' Future researchers may uncover more information about strategies in addition to race-matching that all teachers can work to employ.

Implications for Practice

What strategies can teachers employ to support students whose races do not match their own? This study's findings indicate that racial disproportionalities still exist between Latine and White students, with Latine students scoring significantly lower in reading and math measures, even in schools with higher levels of race matching. This finding indicates that further interventions are needed in addition to race matching to improve the academic success students of color experience in schools.

Suggestions from participants included a focus on relationships, encouraging teachers to learn more about students' different experiences, backgrounds, and beliefs, and to have open, honest conversations. For example, they shared that when mistakes are made, teachers should self-reflect, learn from the situation, and work together with their students to create an inclusive environment that fosters a sense of belonging and

academic success. Additionally, one student urged educators to find out about their students' personal goals, both for academics and in life, and to support them in achieving those goals, rather than assuming all students strive for As or to go to college after high school.

Personally and professionally, I am disappointed by the lack of participation in the Panorama survey and would urge educators to place the same level of importance on this, and other types of climate assessments, as on academic measures. An essential part of improving school experiences for our students is to take time to listen to what they want and need. If we deny our students the opportunity to give input and share their feelings, while simultaneously ensuring they demonstrate what they know on a myriad of academic measures, we are sending a clear message with our actions that contradicts our messages of care for their wellbeing.

Anti-bias instruction, self-reflection, and training on how to celebrate and represent students' differences in curriculum and instruction were also mentioned as promising strategies to improve students' sense of belonging and academic success. In a previous study conducted in a similar way, data were gathered via the transcriptions of one-on-one interviews using open-ended questions related specifically to Black high school students' experiences with White teachers (Douglas et al., 2008). Although the Douglas et al. study included eight participants, and mine included only two, similar themes emerged that add to the research around teacher perceptions and belonging. In both studies, students identified feeling a sense of belonging at their school or within a specific school-sponsored group, and students from both studies discussed the impact of

teachers' negative perceptions or bias in favor of White students, at the expense of students of color.

Through these conversations, it appears that students are talking about race, and that they appear willing and interested in having these conversations. Staff may feel hesitant to initiate these conversations for fear of repercussions through potentially offending students, or because race is a controversial topic in our society. Educators, their actions, and their relationships with students matter; students and staff clearly tell us they do, as do the data. We need to listen to students and to their experiences to inform curriculum, teaching practices, and other systemic school structures.

Future Research

These interviews were both enlightening and intriguing. Further participation and exploration of this topic is needed to evaluate how schools and districts can support teachers and students in having the types of open conversations they may be wanting to have yet are unsure how to approach. I would encourage schools or districts to consider funding data collection with students individually or create structures to support staff in engaging in student focus groups. One strategy that may increase participation and enhance students' feelings of safety would be to hire a person who identifies as the same racial group as the students of interest, or whom specific groups of students already know and trust, to lead focus groups at schools. These staff members could be identified by simply asking the students who their favorite teachers are, whom they trust, and whom they feel most comfortable talking to about sensitive issues. This brings to mind equity audits, and may be a more practical and cost-effective way to regularly analyze the health of a school system by questioning students about their sense of belonging, and what

additional supports they may need to enhance their academic and overall school experiences.

APPENDIX A

INTERVIEW QUESTIONS

Student Interview:

Personal Experience: This first set of questions pertains to your personal experience in school:

- Talk to me about your school experience K-12.

- Are there specific memories that come to mind when I ask you to reflect on your K-12 experience?

- Is there an adult from your school experience that stands out in your memory? Can you tell me about them?

- Describe how you feel at your current school.

- If you could describe a perfect school what would that be like? What would it look and feel like?

Sense of belonging: This set of questions pertains to your personal experience in school and your opinions about belonging.

- Have you heard the term "sense of belonging?" What does that term mean to you?

- In what ways do you personally, or do you see other students, express a sense of belonging? What would make others think that someone belongs at school?

- Can you tell me about a time when you felt that you belonged, or that you didn't belong at school? What made you feel that way?

- What do you believe are key factors that help students feel that they belong in school? In your opinion, what types of behaviors or actions make students feel that they belong in school?

- What things can make students feel that they do not belong?

Sense of belonging and identity: This set of questions pertains to your experiences and opinions regarding sense of belonging and identity.

- How do you personally identify racially or culturally?

- Do you believe that your personal racial and cultural identity influences your sense of belonging in your classroom or at the school? Why or why not?

- Tell me about the racial and cultural identity of the teachers you have had in your K-12 experience.

- In your opinion, did your teachers' and/ or other students' racial and cultural identities influence or not influence your sense of belonging in your classroom or at the school?

- Thinking specifically about racial and cultural identity, how can teachers show that they value, honor, and respect students' differing identities?

Academic:

For these questions, think about all adults, teachers and staff at the schools you have attended.

- What things do schools, teachers, or school staff do to help you succeed academically? What things can schools and teachers do to help you do well in school?

- What adult actions do you believe most strongly affect students' academic achievement/ success?

- In your opinion, what can teachers do to support students of color and their success in school?
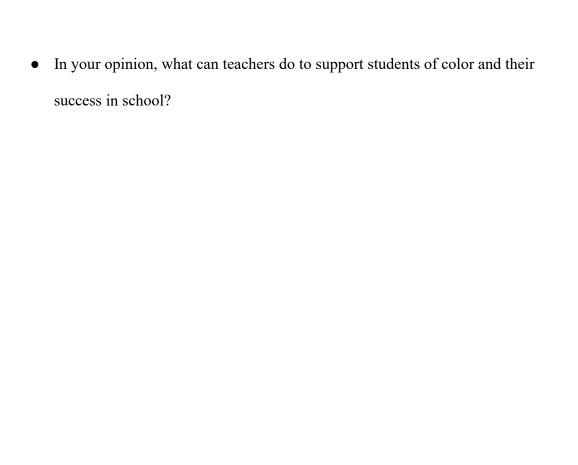
Staff Focus Group: Focus on promising practices for increasing sense of belonging & questions that establish a link between sense of belonging and academic achievement.

Sense of belonging:

- Have you heard the term "sense of belonging?" What does that term mean to you?

- In what ways do you think that students express a sense of belonging?

- In your experience, what behaviors indicate that a student feels that they belong in a classroom or a school? How does that differ from when students do not feel that they belong in a classroom or a school?

- What are those key factors that help students feel that they belong?

- In your opinion, does student racial and cultural diversity, as well as staff racial and cultural identity, influence students' sense of belonging within the school? Why or why not?

- Thinking specifically about racial and cultural identity, how can teachers show that they value, honor, and respect students' differing identities?

Academic Achievement:

- In your experience, do you believe that sense of belonging and academic success are connected? Why or why not?

- What things do schools, teachers, or other school staff do to help students succeed academically?

- What adult actions do you believe most strongly affect students' academic achievement and success?

- In your opinion, what can teachers do to support students of color and their success in school?

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