THE ROLE OF TEACHER PERCEPTIONS OF RESPONSE TO INTERVENTION, RACIAL/ETHNIC ATTITUDES, AND SELF-EFFICACY IN SPECIAL EDUCATION REFERRAL DECISIONS

by

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ABSTRACT

This study is an exploration of the aspects related to the disproportionate representation of minority students in special education. The investigation specifically focused on the relationship between teacher perceptions of Response to Intervention (RTI), teacher racial attitudes, and teacher self-efficacy with respect to their special education referral decisions. Teachers assigned to grades K-5 (*n*=51), from three Florida public school districts, completed an online survey. The survey included reading four vignettes each describing a fictitious 3rd grade, male, Black/African American student and rating the severity of the academic concern, the severity of the behavior concern, and the likelihood that they would refer the student for a special education evaluation. Participants also completed a revised RTI Survey, the Color-Blind Racial Attitudes Scale (CoBRAS), and the Teachers' Sense of Efficacy Scale (TSES).

Spearman's correlation coefficients were calculated as well as an ordinal logistic regression. A statistically significant relationship was found between the *Unawareness of Institutional Discrimination* subscale score of the CoBRAS and the behavior concern for a student described as having mild behavior and academic concerns. A statistically significant relationship was found between the rating of the behavior concern and the *Efficacy in Student Engagement* and *Efficacy in Classroom Management* subscale scores on the TSES for the vignette describing a student with a severe reading concern and a mild behavior concern. The teachers' perceptions of RTI, racial attitudes, and sense of efficacy did not appear to have a statistically significant impact on their rating of the likelihood of referral for any of the students described in the vignettes.

This dissertation is dedicated to Frank and Lilian Dombrova.

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CHAPTER ONE: INTRODUCTION

Introduction

Although it has been over 60 years since the landmark *Brown vs. Board of Education* decision, the disproportionate representation of Black/African American students in special education continues to be one of the most significant signs of inequality in education (Skiba et al., 2008). This is problematic because students in special education tend to have poorer educational and employment outcomes than their non-disabled peers (Sanford et al., 2011). For example, they are less likely to enroll in post-secondary education and have a lower rate of employment than their non-disabled peers.

Black/African American special education students are more likely to be placed in more restrictive environments (Skiba, Poloni-Staudinger, Gallini, Simmons, & Feggins-Azziz, 2006), which means that they have fewer opportunities to participate in academics with their non-disabled peers. Special education students who spend more time in general education classrooms (the least restrictive environment) have better academic performance and higher levels of school satisfaction (McMahon, Keys, Berardi, Crouch, & Coker, 2016), and they are more likely to enroll in post-secondary education (Rojewski, Lee, & Gregg, 2015) than students who are placed in self-contained classrooms.

In the United States, many minority groups (e.g., American Indian or Alaska Native, Black/African American) are more likely to receive special education services than their non-minority peers (U.S. Department of Education, 2017). Specifically, the risk ratio for Black/African American students was higher than 1 for most disability categories outlined within the Individuals with Disabilities Education Act (IDEA). For example, the risk ratio for

Black/African American students in the category of Specific Learning Disability (SLD) was 1.5, indicating that a Black/African American student is 1.5 times more likely to be found eligible for SLD services. What is even more troubling is that the risk scores for Black/African American students in the area of Emotional Behavioral Disability (EBD) was 2.0, and Intellectual Disability (IND) was 2.2 (U.S. Department of Education, 2017). In this study, I explore factors that may be related to the disproportionate representation of Black/African students in special education classes. These factors include teacher perceptions of Response to Intervention (RTI), racial attitudes, and efficacy.

Response to Intervention (RTI)

Response to Intervention (RTI) is a general education initiative that provides students with interventions in academic and/or behavioral areas of need. It is intended to be a preventative model (Greenfield, Rinaldi, Proctor, & Cardarelli, 2010) that delivers academic and/or behavioral support for struggling students before special education is considered. Some schools implementing RTI have reported a decrease in the number of minority students receiving special education services (Naglieri & Crockett, 2005), but the disproportionate representation of minority students in special education remains a significant problem (Skiba et al., 2008).

One of the goals of tiered interventions is to reduce the need for special education referrals. These interventions are intended to improve academic and behavioral areas of concern for general education students. Tier 1 is the general grade level curriculum that all student in general education receive. Students who are not making adequate progress within the Tier 1 general curriculum (e.g., classroom grades and benchmarks) may be considered for Tier 2 interventions. Tier 2 interventions include additional, target instruction to address the area of

need. Students who are not making appropriate progress with Tier 2 interventions may be considered for Tier 3 interventions. Tier 3 interventions are Students who are not making adequate progress when receiving Tier 2 and Tier 3 interventions may be referred for a comprehensive psychoeducational evaluation.

As school systems moved away from the IQ-achievement discrepancy model to identify students with learning disabilities, RTI became an alternative way to identify students with a learning disability (Fuchs, Mock, Morgan, & Young, 2003). Students who were not making adequate progress in Tier 2 and Tier 3 interventions could be considered for special education services.

The initial review of intervention data seems to mostly be the responsibility of the classroom teacher, which suggests that decisions to place students in tiers, and initiate special education referrals, are also largely done by classroom teachers (Hibel, Farkas & Morgan, 2010). Knowing more about teacher perceptions of RTI may shed light on how these perceptions impact their special education referral decisions.

Racial Bias

Racial bias is also a factor that may be related to the disproportionate representation of minority students in special education. The National Council on Disability (2015) points to implicit bias (bias of which one is unaware they hold) as a factor partly responsible for the differences in the risk scores for minority students. Researchers found that many people have an implicit bias in favor of Whites (McConnell & Leibold, 2001; McLalen, Johnson, Dovidio, & Pearson, 2006) and that implicit bias plays a role in special education referral decisions

(Huebner, 1991). Additionally, the implicit racial/ethnic bias of teachers also negatively affects the academic achievement of minority students (Jacoby-Senghor, Sinclair, & Shelton, 2016).

Teacher Efficacy

Researchers have established a connection between teacher self-efficacy, the belief a teacher has in his/her ability to be successful, and student achievement (Allinder, 1995; Ashton, 1984; Goddard, Hoy, & Hoy, 2000; Holzberger, Philipp & Kunter, 2013). Teachers with lower self-efficacy have been found to be more likely to refer students for special education services in some studies (e.g., Podell & Soodak, 1993), but not in others (e.g., Tejeda-Delgado, 2009). As the demands and pressures of teaching have increased, it is possible that teachers who feel less confident in their ability to effectively address academic and behavior issues may be more likely to refer a student for special education services, not necessarily because they have a firm belief that the student has a disability, but possibly because they need help meeting the needs of the student. Special education may be seen as a way to access that support. Teachers' perceptions of RTI, that is, their belief that the interventions will be successful coupled with their belief in their ability to successfully provide quality instruction and effective interventions may impact their inclination to refer students for special education evaluations.

Problem Statement

The problem of racial/ethnic disparity in special education is too complex to be attributed to a single cause (Ferri & Connor, 2005). It may be due, in part, to factors such as inappropriate special education classification, culturally biased psychometric measures, lack of educational opportunities, racial/ethnic bias, or socio-economic status.

Since many special education referrals are initiated by classroom teachers, the purpose of this research was to examine factors that may impact the special education referral decisions of teachers. This research studied how teacher perceptions of the Response to Intervention (RTI) framework, racial/ethnic attitudes, and self-efficacy were related to special education referral decisions, with an overall aim of providing a deeper understanding of the multidimensional problem of racial/ethnic disparity in special education.

Organizational Context

The three districts included in this study serve a student population of approximately 480,000 students, 13% of whom are identified as disabled (Florida Department of Education, 2017). The combined racial/ethnic percentage of the districts is similar to that of the state of Florida, although the participating districts have a lower percentage of White students (-6%) and a higher percentage of Hispanic students (+4%) and Asian students (+2%). The racial/ethnic makeup of disabled students in the participating districts differs more so from the state total than for all students. Compared to the state, the participating districts have fewer disabled White students (-9%), and more disabled Black students (+2%), Hispanic students (+10%), and Asian students (+1%) (See Table 1.1).

Table 1.1: Total Student Population by Race/Ethnicity – Participating Districts Combined

	Race/Ethnicity	State of Florida	Districts Combined
All Students			
	White	39%	33%
	Black	22%	22%
	Hispanic	32%	36%
	Asian	3%	5%
Disabled Students			
	White	39%	30%
	Black	25%	26%
	Hispanic	30%	40%
	Asian	1%	2%

The RTI model, and its implementation, differs from district to district and even from school to school within the same district. Florida uses the Multi-Tiered Systems of Support (MTSS), which is a systematic approach to address academic and behavior concerns. Each tier provides a greater level of support (i.e., interventions) in the area of need. If, after receiving the most intensive intervention services (Tier 3), the student is still not making adequate progress, the MTSS committee may refer the student to the Student Study Team (SST) to determine whether to move forward with an evaluation to determine eligibility for special education services. Special education eligibility is legislated by the Individuals with Disabilities Education Act (IDEA). This federal law regulates state-provided special education and related services to students who are found eligible in one or more of the thirteen IDEA eligibility categories.

It is of concern that minority students are more likely to be found eligible for special education services, especially in the categories of Intellectual Disability (IND) and Emotional Behavioral Disability (EBD). The risk ratios for students being found eligible for special education services in the three participating districts combined indicates that White students have

a risk score of 0.85, while Black students have a risk score of 1.24 (See Table 1.2). This means that Black students are 1.24 times more likely to be eligible for special education services than their White peers. The risk score for Black students being identified as having an IND is 2.21, compared to White students who have a risk score of 0.60. Similarly, with regard to eligibility for EBD, Black students have a risk score of 2.40, whereas the risk score for White students is 0.82. The risk scores for IND and EBD eligibility for Hispanic students is .97 and 0.62 respectively (Florida Department of Education, 2017). The IDEA categories of IND and EBD can result in placement in different classes or even different schools, and they may limit future schooling and career opportunities of the individual.

Table 1.2: Risk Ratio for Students Placed in Special Education – Participating Districts Combined

Disability Category	Race/Ethnicity	State of Florida	Districts Combined
SLD			
	White	0.88	0.75
	Black	1.32	1.47
	Hispanic	1.04	1.24
	Asian	0.28	0.27
EBD			
	White	0.93	0.82
	Black	2.22	2.40
	Hispanic	0.72	0.62
	Asian	0.64	*
IND			
	White	0.78	0.60
	Black	1.99	2.21
	Hispanic	0.72	0.97
	Asian	0.64	0.35
All Disabled			
	White	1.03	0.85
	Black	1.17	1.24
	Hispanic	0.91	1.14
	Asian	0.50	0.48

Note: * indicates that there are fewer that 30 students of a specific race/ethnicity within the disability category.

An additional related problem is that students with disabilities are also more likely to be suspended than their non-disabled peers, and minority students with disabilities are more likely to be suspended than their White disabled peers (See Table 1.3). The discipline risk ratios –the likelihood of being suspended/expelled for more than 10 days– for students with disabilities in Florida is 1.17. The discipline risk score for White disabled students is 0.81, indicating that they are less likely to be suspended compared to the total population including both students with and without disabilities. In contrast, the discipline risk score for Black disabled students is 2.54, denoting that they are considerably more likely to be suspended as compared to the total population including both students with and without disabilities. Hispanic disabled students have a risk score of 0.55, indicating that they also have lower rates of suspension than their Black disabled peers (Florida Department of Education, 2017). Researchers (Balfanz, Herzog, & Mac Iver, 2007; Balfanz, Byrnes, & Fox, 2014) note a strong negative correlation between being suspended – even once– and graduating.

Table 1.3: Risk Ratio for Students Placed in Special Education – State of Florida

Disability Category	Race/Ethnicity	State of Florida
All Disabled		
	White	0.81
	Black	2.45
	Hispanic	0.55
	Asian	*

Note: * indicates that there are fewer that 10 students with disabilities of a specific race/ethnicity suspended or expelled for more than 10 days.

In summary, this is a considerable problem because the education of minority students is greatly impacted by their higher likelihood of being found eligible for special education services. Negative effects include lower academic achievement, higher suspension rates, and an increased risk of not graduating from high school. Understanding factors that impact how teachers make

special education decisions may shed light on the racial/ethnic disproportionality in special education. This may also be an important step in reducing the disproportionality of minority students in special education programs. Addressing the underlying issues would not only improve educational and life-long benefits for the individual student, but it would also have a positive effect on the society to which the individual contributes (Belfield & Levin, 2007).

Conceptual Framework

The problem of the disproportionate representation of minority students in special education programs was explored through the framework of social cognitive theory and implicit social cognition theory. Bandura (1993) noted how cognitive processes affect self-efficacy beliefs. People set their goals based, in part, on their estimation of their skills. Individuals consider the possible outcomes of their efforts, and some visualize success while others visualize failure. Self-doubt interferes with the ability to achieve a goal. Self-beliefs are related to motivation, in that people tend to undertake tasks they believe they can successfully complete. Belief in the ability to be successful is related to the amount of stress and setbacks a person can tolerate. According to Bandura (1993), people who believe that they can manage the stress and setbacks (threats) are able to continue towards the goals, without worrying thoughts of forthcoming failure. Those who do not think that they will be successful may avoid such tasks altogether.

The problem of the disproportionate representation of minority students in special education programs was also explored through the framework of social cognition theory. Bias towards Black/African American students may be explicit or implicit. With explicit bias, the individual knows he/she holds such views and espouses the racial bias. Implicit bias is bias that

is held without the conscious knowledge of the individual. Greenwald and Banaji (1995) describe how implicit social cognition focuses on the implicit aspects of social cognition and how unconscious judgments affect conscious judgments. Past experiences with out-group members, both direct and indirect, play a key role. Greenwald and Banaji (1995) state that there are two categories of implicit social cognition –attitudes and stereotypes. Implicit attitudes are rapid, unconscious thoughts. Implicit attitudes (positive or negative) can be triggered by one thing, but then incorrectly ascribed to something else.

Behavioral interventions or discipline referrals for a minority student may result from explicit or implicit bias. For example, a discipline referral may be the result of a negative implicit attitude when a teacher incorrectly ascribes a negative trait to a minority student because the minority student's appearance or behavior triggers a negative response. For example, the student may use vernacular that the teacher implicitly associates with aggression, and the aggression is incorrectly ascribed to the student. The teacher's implicit bias results in him/her perceiving the student as aggressive.

Implicit stereotypes are unconscious beliefs in a set of traits possessed by members of a certain group (Greenwald & Banaji, 1995). The stereotypes may be a mix of positive or negative traits, and there is an implicit assumption that the person, by virtue of membership in the group, possesses all of them. Teachers may employ implicit stereotypes that result in the belief that a set of characteristics pertains to a student because he/she is a member of a particular group and being a member of a group elicits a judgment based on membership alone. The teacher may implicitly assume a number of stereotypes regarding a student solely because the student is Black

or White. Teachers' implicit bias may impact how they perceive a student's academic performance and behavior and thus how they make special education referral decisions.

Looking through the lens of social cognitive theory, teachers' perceptions of RTI may impact their belief in the viability of the interventions. Those who believe in the RTI approach would be more motivated to implement interventions, try more than one intervention, and conceivably be less likely to make special education referrals. Similarly, teachers who are confident in their ability to deliver effective instruction and behavior management may be less likely to make special education referrals. Teachers exhibiting lower levels of self-efficacy may make more special education referrals because they feel they need support in order to effectively teach and manage the behavior of some students.

Purpose of the Study

This study explored the issue of the disproportionality of minority students in special education. Specifically, the impact of teacher attitudes toward RTI, racial/ethnic attitudes, and self-efficacy on special education referral decisions made by teachers was investigated.

Research Questions

The research questions that guided this dissertation in practice were as follows:

1. What is the relationship between elementary school teachers' perceptions of RTI, racial/ethnic attitudes, and efficacy and their perceptions of male, Black/African American students with differing levels of academic and behavior concerns?
2. What is the relationship between the likelihood of referral for male, Black/African American students with differing levels of academic and behavior concerns and teachers' perceptions of RTI, teachers' racial/ethnic attitudes, and teachers' efficacy beliefs?

Scope and Delimitations

A convenience sample of four public school districts in Florida were contacted to participate in the study, three of which agreed to participate in this research. Twelve elementary schools within each participating school district were selected by the researcher based on the demographics of the schools. The combined demographics of the twelve selected schools was similar to that of their district as a whole. Principals self-selected whether their schools would participate in the study. Individual teachers also self-selected to participate in the study. The study was only available to K-5 classroom teachers who had at least one year of teaching experience.

These delimitations did not allow the researcher to collect information regarding the perceptions and attitudes of teachers in private schools, teachers assigned to grade 6-12 classrooms, or teachers in their first year of teaching. Additionally, the perceptions and attitudes of other educational professionals (e.g., reading specialists, math coaches, paraprofessionals, administrators) were not included in this study.

Assumptions

This study was conducted under the assumption that the participants completed the surveys accurately and honestly. It is also assumed that those completing the surveys understood the terms used within the surveys. Further assumptions included that the measurement instruments appropriately measured the intended constructs and that the methodology, statistical calculations, and interpretation of the data correctly reflected the perceptions and attitudes of those who participated in the study.

Limitations

Limitations of this study include:

1. The data for participating school districts came from the Local Education Agency Profiles from the Florida Department of Education. To protect student privacy, data are not presented for very small student groups, thus the data do not represent all students within the school districts.
2. Although measures were taken to include schools from each district that together were representative of the district in terms of race/ethnicity, percentage of ESE, ELL, and students receiving free or reduced-price lunch, some principals declined or did not respond to the research request. Therefore, the participating schools may not be as representative of the districts as the intended sample the researcher initially requested.
3. The participating school districts are located in one state, which means that results of this research cannot necessarily generalize to other states or to the United States as a whole.

Key Terms and Concepts

IQ-Achievement Discrepancy Model: A model comparing a student's IQ to his/her achievement scores that was used to determine whether a student has a specific learning disability.

Emotional/Behavioral Disability: The Florida Department of Education defines an Emotional/Behavioral Disability as "persistent … and consistent emotional or behavioral responses that adversely affect performance in the educational environment that cannot be attributed to age, culture, gender, or ethnicity" (Florida Department of Education, 2018a).

Implicit Attitudes: Greenwald and Banaji (1995) defined implicit attitudes as "introspectively unidentified (or inaccurately identified) traces of past experience that mediate favorable or unfavorable feeling, thought, or action toward social objects" (p. 8).

Individuals with Disabilities Education Act (IDEA): IDEA is a federal law that states the requirements that schools are to follow regarding the identification, evaluation, eligibility, and educational planning for students with disabilities.

Intellectual Disability (IND): The Florida Department of Education (2018b) defines an Intellectual disability "as significantly below average general intellectual and adaptive functions manifested during the developmental period, with significant delays in academic skills". The state defines the *developmental period* as birth to the age of 18.

Least Restrictive Environment (LRE): This term is used in the Individuals with Disabilities Education Act (IDEA) and refers to the requirement to have disabled students be educated alongside their non-disabled peers (in general education classrooms) to the greatest amount appropriate based on the individual needs of the student.

Response to Intervention (RTI): is a general education initiative that aims to identify and provide support to students in the area of academics and/or behavior. It includes providing evidence-based interventions in the targeted areas of need and collecting data to monitor student progress. This multi-tiered approach includes Tier 1, which refers to the curriculum in which all general education students receive instruction. Tier 2 interventions involve targeted instruction in the area of need, and Tier 3 interventions involve even more intensive intervention in the area of need.

Risk Ratio: A measure of the risk that a student within an ethnic/racial group (e.g., White, Black, Hispanic) will be identified as belonging to another group, in this case, and IDEA eligibility category (e.g., SLD, EBD). When calculating the risk scores for students of a specific racial/ethnic group in special education, the numerator is the number of students within the specific racial/ethnic group identified as having a disability divided by the total number of students within that group, multiplied by 100. The denominator for this calculation is the number of students with disabilities in all other racial/ethnic groups (other than the group specified in the numerator) divided by the total number of all other racial/ethnic groups (not including the group specified in the numerator), multiplied by 100 (Florida Department of Education, 2019).

Self-efficacy: Albert Bandura (1991) wrote that self-efficacy can be thought of as, "people's beliefs about their capabilities to exercise control over their own level of functioning and over events that affect their lives" (p. 257).

Special Education: education or services provided to student who qualify as a student with a disability based on the criteria outlined in the Individuals with Disabilities Education Act (IDEA). It is often referred to as Exceptional Student Education within the state of Florida.

Specific Learning Disability: The Florida Department of Education (2018c) defines specific learning disability as a "a disorder in one or more of the basic learning processes involved in understanding or in using language, spoken or written, that may manifest in significant difficulties affecting the ability to listen, speak, read, write, spell, or do mathematics".

CHAPTER TWO: LITERATURE REVIEW

Introduction

In this review of literature, I explain the motivation for the current study of the relationship between special education referrals, teacher perceptions of Response to Intervention (RTI), racial/ethnic attitudes, and teacher self-efficacy. I begin with an examination of some of the historical context of race and education and the extent to which racial/ethnic disparity currently exists in special education. I then summarize research examining issues of RTI implementation and teacher perceptions of RTI. These issues affect the number of special education referrals, especially for minority students. This is compounded by racial/ethnic attitudes, research about which is reviewed next. I conclude this literature review with an examination of research regarding teacher self-efficacy.

Racial/Ethnic Disparity in Education

The disproportionate representation of minority students in special education is a complex and multifaceted problem that is difficult to separate from other segregation and discrimination issues. *Plessy v. Ferguson* in 1896 allowed for segregation in public spaces, so long as the spaces for Blacks and Whites were of comparable quality, and this became known as *separate but equal* (Kauper, 1954). In 1954, *Brown v. Board of Education of Topeka* aimed to ensure that Black students had educational opportunities equal to that of their White peers. The Supreme Court unanimously agreed that *separate but equal* should not apply to the public school system. Although the court found that segregated schools were unconstitutional, no timeline or guidelines for desegregation was provided.

With no clear timeline set by the courts after *Brown v. Board*, progress towards desegregation was slow and often met with strong opposition (Russo, Harris, & Sandidge, 1994). For example, in 1957 nine Black high school students – Little Rock Nine– were prevented from entering a previously all-White high school by the Arkansas National Guard who were sent there by the state Governor (Branton, 1983). The problems were not only in the high schools. In 1960, a then six-year old Ruby Bridges had to be escorted to her first-grade class by U.S. Marshalls (Reece & O'Connell, 2016).

Things were not equal for Black and White students. Black students had higher teacher to student ratios, less access to facilities, and less access to programming (Coleman, 1966). Two years after the Civil Rights Act of 1964, Coleman (1966) wrote a report for the President of the United States and for Congress regarding the educational opportunities for students. This report, often referred to as the Coleman Report, aimed to answer questions about the extent of separation between students of different races, the equality of educational opportunities, student achievement, and the relationship between student achievement and the racial/ethnic demographics of the school. According to Coleman's report, most students were in schools that continued to be racially segregated. Black students were the most likely segregated *minority*, but White students were the most segregated. Coleman (1966) also found that "racial matching" of teachers and students was most common in the South, although overall it was more likely that White teachers taught Black students than that Black teachers taught White students.

This issue of "racial matching" of students and teachers is related to the fact that, post segregation, Black teachers were not hired to teach in White schools, and therefore could only find employment within schools that had a predominately Black student population. Prior to the

desegregation of schools, there were approximately 82,000 Black teachers working in public schools (Hawkins, 1994). Tens of thousands of Black teachers lost their jobs after desegregation (Madkins, 2011).

Coleman (1975) also wrote a report regarding the segregation efforts based on school data from 1968 to 1973 collected by the Department of Health, Education, and Welfare. These data included the racial demographics of the students and teachers at each school. Prior to desegregation efforts, students were assigned to schools based on where they lived and their race. There was a set of schools to which White students were assigned and a set of schools to which Black students were assigned. Sometimes Black students were bussed out of their neighborhoods to attend school. When desegregation efforts began in large cities, some White students were bussed to other schools in an effort to integrate students (Coleman, 1975).

It is important to note that the data collected for this report included 90% of the children in school in 1968, 1970, and 1972. Data were collected from only a sample of schools in 1969, 1971, and 1973. In this report, Coleman noted that desegregation results differed by school type and location. For example, he found that Black children had the least interaction with students of other races and that they were not just segregated from each other, but also from other minority groups. Based on the 1968 data, the segregation in the southern regions of the United States was *within* district segregation, while the segregation in the northern regions of the country was more so a result of White and Black children attending different school districts. Overall, measures of segregation were higher at the elementary level and in large school districts, although segregation in the Southeast regions were similarly high, regardless of the size of the school district.

Another issue that impacted the racial/ethnic demographics of public schools was the exodus of White students. Coleman (1975) also noted this pattern, which is often referred to as "white flight." With regard to public schools, "white flight" involved White students moving to private schools with a predominately White student population. The number of students enrolled in non-Catholic private schools increased significantly during the 1960s, most markedly in the southern regions of the United States (Clotfelter, 1976). Clotfelter (1976) determined that the racial makeup of the school and financial resources to pay for private school tuition were two key factors in "white flight." White students from high income families assigned to schools with a higher percentage of non-White students were most likely to seek out a private school education.

Although there has been some progress, troubling issues remained. The most significant decrease in school segregation was observed between 1968 to approximately 1975, with a less significant decrease after that (Reardon & Owens, 2014). Although we no longer see such headline making cases like Little Rock Nine and Ruby Bridges, issues of segregation in education remain today. Some researchers suggest there has even been a resegregation of sorts since the late 1980s. Orfield and Eaton (1996) referred to existing issues of unequal education as a "quiet reversal" of the desegregation efforts that resulted from *Brown v. Board*. This "quiet reversal" includes several current forms of educational inequality. Ford (2014) noted the racial/ethnic inequality and segregation that results from the underrepresentation of Black and Hispanic students in gifted education programs while others point to racial/ethnic disparity in special education (Ford & Russo, 2016; Grissom & Redding, 2015), and racial/ethnic disparity in discipline rates (Anyon, et al., 2014; Wallace, Goodkind, Wallace, & Bachman, 2008).

Racial Disparity in Special Education

In 1968, the office of Civil Rights began reviewing school and district data that included the demographics of students in special education programs. Dunn (1968) was perhaps the first to address the concern of racial/ethnic disproportionality in special education in his article, *Special Education for the Mildly Retarded—Is Much of it Justifiable?* Dunn notes that homogeneous grouping – also referred to as tracking– tends to be to the determent of lower performing students, who can benefit from being educated alongside their higher performing peers. His seminal paper cited numerous studies (e.g., Smith & Kennedy, 1967; Rubin, Senison, & Betwee, 1966) that suggested that intellectually disabled students, who were then referred to as the *educatable mentally retarded,* did as well (or even better) in general education classrooms as those in special education classrooms. Dunn's criticism of the education system of the day, that included pointed disparagement of the inadequate process that was in place to identify students labelled as *mentally retarded,* and specifically the lack of consideration of the effects of such a label for the teachers, in terms of their expectations of the students, as well as for the students themselves. Dunn explained how education classrooms were more able to meet the needs of special education students because of flexible groupings within the classroom, increased availability of early learning programs for children living in poverty, improved curriculum, teacher training that included meeting the needs of special education students, and the use of technology in the classroom. Aside from the use of some outdated terms, Dunn's (1968) article seems to describe many aspects of education that still apply to U.S. schools today.

In the late 1970s and early 1980s, Blacks were found to be overrepresented in the special education categories. Chinn and Hughes (1987) reviewed the Office of Civil Right (ORC) data

concerning the number of Black students enrolled in special education categories including (what was then referred to as) educatable mentally retarded (EMR), trainable mentally retarded (TMR), seriously emotionally disturbed (SED), learning disabled (LD), speech impaired (SI), and gifted/talented (G/T) for 1978, 1980, 1982, and 1984. There was an increase in the percentage of Black students in each exceptionality category, with the most significant increase (+16%) in the category of EMR and the lowest (+.70%) increase in the category of G/T. A decrease in the percentage of Black students in each category (except G/T) was observed in 1984, although Black students were still overrepresented in the categories of EMR, TMR, and SED and underrepresented in the category of G/T.

Unfortunately, similar trends continued into the 1990s (Artiles & Trent, 1994; Harry, 1994). Black students continued to be overrepresented in all disability categories (U.S. Department of Education, 1992) and at the close of the 1990s, the percentage of Black students in special education was higher than the percentage of Black residents in every disability category except Deaf-Blindness, Other Health Impairments, and Orthopedic Impairments (U.S. Department of Education, 2000).

The first decade of the 21st century saw the reauthorization of the Individuals with Disabilities Education Act (IDEA) in 2004 that contained specific provisions to ensure that states had policies in place to address the racial/ethnic disparities within special education (Skiba et al., 2008). The latest report from 2017, which is based on 2015 data, states that minority students (ages 6-21 years) were more likely to be in special education programs, with Black students having a risk ratio of 1.7. The risk ratio for Black/African American students was more than 1.0 for all special education categories except for, *deaf-blindness* and *orthopedic impairment.* It was

equal to 1.0 for *autism, hearing impairment,* and *speech and language impairment*. Of particular concern is the risk ratio of 2.0 in the category of *emotional disturbance* and 2.2 in the category of *intellectual disability* (U.S. Department of Education, 2017).

Morgan et al. (2015) caused quite a stir in the field with their article published in *Educational Researcher* that stated that, not only were minority students not overrepresented represented in special education, they were *underrepresented*. Morgan et al. made the claim that limitations within the methodology of the empirical research in the area of racial/ethnic disparity in special education accounts for the differences in estimates of disproportionality for minority students. The authors pointed to lack of control for confounding variables like low birth weight and living in poverty, noting that research done by Hibel et al. (2010) and Shifrer, Muller, and Callahan (2011) that included covariate adjustment found estimates of underrepresentation in special education. It should be noted that Hibel et al. used data of kindergarten students (in Fall 1998) to predict the likelihood of the student being placed in special education services, noting the use of elementary students, small sample size, and exclusion of school and per-pupil expenditures as limitations of the study. Shifrer, Muller, and Callahan, on the other hand, used the Educational Longitudinal Study from 2002 focusing on 10th grade students. They concluded that the racial/ethnic disproportionality was the result of socioeconomic status.

Morgan et al. (2015) analyzed a national sample of longitudinal data, (elementary and middle school), adjusted for potentially confounding variables, and used hazard modeling (discrete-time logit regression modelling) to estimate the identification of disabilities over time. The sample included 20,100 kindergarten students and focused on variables of disability category (i.e., learning disability, speech or language impairment, mental retardation, health

impairment, and serious emotional disturbance), racial/ethnic and ethnic categories (i.e., Hispanic, non-Hispanic-Black, non-Hispanic White, and other race/ethnicity), mother's age when child was born, language spoken in the home, child's birth weight, and socioeconomic status. The Social Rating Scale was also completed by the child's teacher in kindergarten, grade 1, 3, and 5 along with academic achievement measures. The authors concluded that their study results found no evidence that minority students (i.e., racial, ethnic, or language) were disproportionately overrepresented within the population of special education students. Furthermore, they stated that their results suggested that minority students, "are less likely than otherwise similar White, English-speaking schoolchildren to be identified as disabled and so are comparatively *underrepresented* in special education" (Morgan et al., 2015, p. 285).

Skiba et al. (2016), among others, responded to the work of Morgan et al. (2015). Skiba et al. found the results put forth by Morgan et al. to be surprisingly different to similar research in the field and stated that Morgan et al. used their results to, "attack the vast mechanism of federal disproportionality policy under the Individuals with Disabilities Education Improvement Act of 2004 (IDEA)" (Skiba et al., 2016, p. 221-222).

Skiba et al. (2016) rejected the findings of Morgan et al. (2015) because of the data set that was used, specifically taking issue with Morgan et al.'s use of *being served in special education* as a dependent variable. They noted that this data was collected from a section of the longitudinal study (1998 ECLS-K) where the special education teacher provided the student's primary disability category. These were "teacher estimates" based on a sample of fewer than 5,000 students compared to actual number of 5,536,150 students receiving special education services for that same school year (Skiba et al., 2016). Skiba et al. noted the significant

difference between the initial results of Morgan et al., before the calculations were done with control variables, and the results of others (e.g., Donovan and Cross, 2002; Parrish, 2002). Morgan et al., also drew criticism for putting Native Americans, Asian Americans, Pacific Islanders, and multiracial students into one category.

Skiba et al. (2016) also took issue with what they saw as Morgan et al.'s (2015) oversimplification of the relationship between educational failure and poverty on the grounds that IDEA categories require more evidence (e.g., adaptive functioning, social emotional rating scales) than just educational failure to meet eligibility requirements. Skiba et al. pointed to the research of Oswald, Coutinho, Best, and Singh (1999) and Skiba et al. (2005) that indicated that African American students were more significantly overrepresented in the category of emotional disability in high-SES districts. Skiba et al. (2016) went on to state that Morgan et. al. did not have the necessary data to conclude that poverty can account for the disproportionate representation of minorities in special education given that socioeconomic status was only a predictive variable within the adjusted model for three of the 20 tests completed.

Cohen, Burns, Riley-Tillman, and Hosp (2015) also responded to both the Morgan et al. (2015) article in *Educational Researcher,* as well as to the *New York Times* op-ed by Morgan and Farkas (2015) providing educational policy recommendations that was released on the same day. Cohen, Burns, Riley-Tillman, and Hosp (2015) noted that being African American cannot easily be separated from other factors impacting African Americans such as the impact of segregation and low expectations, citing the work of Wiggan (2007), in which Wiggan suggested that features of genetic deficiency, social class, the expectations of teachers, and the theory that students develop an oppositional identity in response to feelings of alienation, all play heavily in

the literature in explaining the underachievement of African American students. Wiggan suggested that an alternative explanation for low student achievement may well be a combination of emphasis on standardized tests and the inequality between the education of Black and White students, noting that Black students are expected to perform as well as White students even though they have significantly different educational experiences.

Ford and Russo (2016) were adamant that, research in the field repeatedly indicates that there is a disproportionate number of Black students in special education, a pattern that has existed for over 40 years. Calling the research of Morgan et al. (2015) "flawed," Ford and Russo (2016) noted that Morgan et al. used narrow criteria rather than comprehensive criteria. Similar to Skiba et al.'s (2016) complaint that Morgan et al. put several ethnic categories together under the heading of *Other*, Ford and Russo cited concerns about Morgan et al. putting students of color together, ignoring group differences that result from factors like family income and language.

Aside from the work of Morgan et al. (2015), research in the area of special education indicates that racial disproportionally is significant for Black/African American students. They are often represented in higher numbers than would be expected, based on their overall numbers within the student population.

Response to Intervention

Special education legislation began with the Social Security Disability Act (1956), which led to the Equitable Education Opportunities Act (1974) and the Education for All Handicapped Children Act (EAHCA) in 1975. It is within the EAHCA, that the requirement of a Free Appropriate Public Education (FAPE) was introduced. In 1997, The Education for All

Handicapped Children Act (EAHCA) became known as the Individuals with Disabilities Education Act. Special education decisions are regulated by the Individuals with Disabilities Act (IDEA), which was reauthorized in 2004 (Holdnack & Weiss, 2006).

This reauthorization of IDEA enabled states to move away from the discrepancy model, that previously determined eligibility for services under SLD based on the difference between the student's intellectual ability and his/her academic achievement scores. The discrepancy model was problematic for a number of reasons. It resulted in a disproportionate number of minorities, English Language Learners (ELL), and students living in poverty being identified as having a learning disability (Wixson, 2011). There were also issues regarding the lack of theoretical, statistical, and pragmatic support for the use of the discrepancy model in the identification of learning disabilities (Aaron, 1997; Stanovich, 1991). Instead, states were permitted to use the RTI framework to consider a student's response to intervention in determining eligibility for special education services under the category of Specific Learning Disabled (SLD). One of the goals of RTI was to review the quality of instruction provided and the student's response to research-based interventions within the context of special education eligibility (Wixson, 2011).

RTI and Special Education Eligibility

After the reauthorization of IDEA, two views on the use of RTI in special education eligibility decisions formed (Hale, Kaufman, Naglieri, & Kavale, 2006). One included the use of only RTI data in the determination of eligibility for special education services within the category of Specific Learning Disability (SLD), and the other included RTI data along with psychoeducational evaluations. In a U.S. Department of Education report released by the

National Center for Education Evaluation and Regional Assistance, Gersten et al. (2008b) suggested that all students be screened and monitored for reading difficulties and that students should receive Tier 1 differentiated reading instruction based on the screening and monitoring results. Further recommendations suggested that Tier 2 interventions should be provided for 20-40 minutes three to five per week, with monthly progress monitoring to determine whether Tier 2 interventions are being effective. Should that monitoring data indicate that Tier 2 interventions were not successful, the team should design daily Tier 3 interventions. A similar report regarding math instruction also included recommendations to focus on specific foundational mathematical concepts, word problems, the use of manipulatives, and motivational strategies (Gersten et al., 2009a).

Preston, Wood, and Stecker (2016), stated concerns about the blurring of general education, specifically concerns about what Fuchs, Fuchs, and Compton (2012), referred to as "special education as accommodation" or "special education lite" (p. 274), where students receive accommodations (e.g., additional time to complete assignments and tests) through a co-teaching model, but do not receive specialized instruction. Reynolds and Shaywitz (2009) expressed concerns regarding the paucity of knowledge about the underlying assumptions of RTI, the difficulty in identifying students with possible learning disabilities based on RTI data, and the debatable effectiveness of the RTI model itself. The authors concluded the research article by expressing fears that RTI may be "a Trojan horse, outwardly appealing but filled with risky, unproven, and in the end, potentially harmful practices" (Shaywitz, 2008, as cited by Reynolds and Shaywitz, 2009).

The RTI model was intended to reduce the number of unnecessary special education referrals and to ensure that students with fewer educational opportunities were not incorrectly classified as learning disabled. Some researchers (Fuchs & Fuchs, 2006; Hoover, 2010) suggested that RTI can help to ensure that students who are referred for special education services are indeed in need of special education services rather than their low academic achievement being attributable to a lack of evidence-based instruction. There seems that there is also a need to ensure that the RTI interventions are culturally appropriate for the students and this is difficult when minority groups are often not included in the research samples when studying the effectiveness of RTI interventions (Klingner & Edwards, 2006). Klingner and Edwards (2006), highlighted the importance of including a thorough assessment of the classroom instruction within the RTI model, which is consistent with the research of Vaughn and Fuchs (2003), who raised concerns about the intensity of interventions and the need for highly trained staff to carry out the intervention.

Intervention fidelity is one of the concerns for RTI implementation. Hawkins, Kroeger, Musti-Rao, Barnett, and Ward (2008), suggested that the way the RTI system is implemented must be monitored for fidelity of the assessments, instruction, and the procedures used to make decisions. They also noted that intervention fidelity was often not included in research about RTI. This is of particular concern when it comes to racial/ethnic disparity in special education services. If the tiered interventions, or for that matter the core curriculum, are not being implemented with fidelity it may appear that children are failing to make adequate progress with interventions, when in fact the interventions are not being implemented completely, consistently,

or correctly. This conceivably links to concerns expressed by Hale, Kaufman, Naglieri, and Kavale (2006) about solely relying on RTI data for SLD eligibility.

The government report, *The Evaluation of Response to Intervention Practices for Elementary School Reading* (Balu et al., 2015), found that most of the schools within the sample had fully implemented RTI. However, they found that schools within the impact sample–the 146 elementary schools that had been implementing RTI for at least three years– had negative results from first grade students just below benchmark who received reading intervention. This may have been caused by errors in the identification of students in need of interventions, the needed reading intervention, and/or in the relationship between the tiered intervention and the core curriculum.

Teacher Perceptions of RTI

Some teachers seem to have inadequate training, misconceptions about RTI, and face many implementation challenges. Greenfield, Rinaldi, Proctor, and Cardarelli (2010) completed a qualitative study that included eight elementary teachers who were part of a year-long RTI implementation. They found that teachers used the RTI data to monitor student progress and used these data to determine whether the students were making progress. Most of these teachers reported that they used the data to plan instruction. However, there seemed to be some challenges regarding the identification of specific interventions and students in need of them, along with misunderstandings about the tiers. In a more recent mixed-methods study in secondary schools, Sanger, Friedli, Brunken, Snow and Ritzman (2012), found that teachers saw numerous challenges in the implementation of RTI (e.g., need for training, RTI seeming to be a

better fit at the elementary level), but were also optimistic in terms of the potential benefits for student achievement.

Many teachers do not seem to fully understand the RTI system they are expected to implement. Castro-Villarreal, Rodriguez and Moore (2014) found that of the respondents (*n*=93), only 19% were able to provide a "good" definition of RTI, while 78% provided a "poor" definition, suggesting that many teachers do not fully understanding the key aspects of RTI. Many teachers pointed to lack of training, time, and resources as barriers to the implementation of RTI. Lack of training appears to be one of the major reasons for negative views of RTI (Castro-Villarreal, Rodriguez and Moore, 2014) and one of the most important factors in the successful implementation of RTI (Kratochwill, Volpiansky, Clements, & Ball, 2007).

There may be a particular problem with cultural differences when implementing RTI. Bineham, Shelby, Pazey, and Yates (2014) conducted survey research with randomly selected elementary and high school teachers, administrators, and support staff (*n*=627) from across the United Sates. They found a disconnect, in that 63% of the participants thought that RTI was appropriate for English Language Learners, but only 35% of the participants considered RTI to be a "culturally sensitive procedure" (Bineham, Shelby, Pazey, & Yates, 2014, p. 244). Approximately a third of the participants indicated that they had not received training in the area of RTI, and participant responses suggested confusions about the roles of each professional in the implementation of RTI.

Overall, much of the research in the area of RTI does not include teacher perceptions of RTI (Castro-Villarreal, Rodriguez and Moore, 2014), and there is a need to further explore the perceptions of educators charged with the implementation of RTI (Werts, Lambert and

Carpenter, 2009). It seems that there is little, if any research looking at the relationship between teachers' perceptions of RTI and their special education referral decisions.

Racial/ethnic Attitudes

Racial/ethnic attitudes may also contribute to the racial/ethnic disparity in special education. Beer and Ochsner (2006) noted that social cognition includes the cognitive processes that people use to encode and decode their social worlds. Specifically, it includes the cognitive processes that individuals use to understand others, themselves, and to understand the sum of their social knowledge. Within social cognition, there is an important distinction to be made between explicit and implicit bias. Explicit bias is deliberate bias that the person is aware that he/she holds, whereas implicit bias is unconscious bias, of which the person is unaware. Most research in the area of bias focuses on explicit bias (Boysen, 2009; Wilson & Scior, 2013). When researchers measure explicit bias, they usually do so through the use of self-reports which are often in the form of questionnaires (Boysen, 2009). Implicit bias is often measured in several ways, including the Implicit Association Test (IAT).

The Implicit Association Test (IAT)

Before the Implicit Association Test (IAT), researchers like Gaertner & McLaughlin (1983) used lexical decision tasks to determine the strength of the association between two words. They found that people responded more quickly when they saw positive words paired with Whites than when they were presented with positive words paired with Blacks, regardless of the participants racial/ethnic prejudice score. Measures of automatic responses like this became a way for researchers to study racial/ethnic bias that did not rely on explicit measures

which were problematic because people may feel compelled to provide a socially acceptable answer, or because they may not even be aware of the views they hold (Ito et. al, 2015).

In 1998, Greenwald, McGhee, and Schwartz presented the IAT noting that it aimed to "measure implicit attitudes by measuring [participants] underlying automatic evaluation" (p. 1464). The IAT measures the time it takes participants to pair one concept with another. First, participants are asked to sort the stimulus into categories (e.g., pictures of Black faces and White faces). Then, participants are asked to indicate whether words (e.g., "laughter", "horrible") are good or bad. Participants are then asked to sort a mix of words and faces into two categories: *bad* or *Black people* and *good* or *White people*. Participants are later asked to sort a mix of words and faces into two similar, but distinctly different categories: *bad* or *White people* and *good* or *Black people*. The IAT measures the response times to associate the stimulus (word or face) with the correct category on the premise that participants will have faster responses to things that they more naturally associate with one another.

The Predicative Validity of the Implicit Association Test (IAT)

In their article that set out to determine the predictive validity of the Implicit Association Test (IAT) and to compare the results of the IAT to that of self-report measures, Greenwald, Poehlman, Uhlmann, and Banaji (2009) noted the importance of considering factors that affect participant responses on self-report measures, noting that self-reports may not measure unconscious attitudes. Another limitation of self-report measures is that it is much easier for a person to respond in a systematic (e.g., socially desirable) way because they are able to think about their answers before they respond (Greenwald, Poehlman, Uhlmann, & Banaji, 2009). As previously discussed, the measurements obtained from the IAT are based on how quickly

individuals respond to each presented pair and the differences between these reaction times. One of the strengths of the IAT is that it is difficult for an individual to purposely alter his/her reaction times.

Predictive validity of the IAT was higher than that of the self-report measures in socially sensitive areas. The authors found that on items deemed to be socially sensitive, in self-report measures there was only moderate predictive validity effect sizes. They also noted that these items had lower predicative validity than items that were considered less socially sensitive. The predictive validity of the IAT related to the White-Black race and other intergroup criterion domains was higher than self-report measures. The authors concluded that the IAT is the best predictive measure when investigating issues of race or other socially sensitive topics. However, they found greater predictive validity of self-report measures for both consumer and political preferences, as well as clinical phenomena (e.g., depression) (Greenwald, Poehlman, Uhlmann, & Banaji, 2009). They concluded that the IAT and self-report measures show predicative validity strength in different areas (criterion measures), and so they should be used together to yield the highest predictive validity.

Criticism of the Implicit Association Test (IAT)

The Implicit Association Test (IAT) has been criticized for having problems with predictive validity and with lack of correlation to behavior. In their meta-analysis including IAT measures, Oswald, Mitchell, Blanton, Jaccard, and Tetlock (2013) responded to some of the findings presented by Greenwald, Poehlman, Uhlmann, and Banaji (2009), questioning the predictive validity of the IAT. They found smaller effect sizes than did Greenwald, Poehlman,

Uhlmann, and Banaji (2009), with regard to the relationship between IAT measures and measures of racial/ethnic discrimination.

Fiedler, Messner and Bluemke (2006) suggested that, given the uses of the IAT, it needed to undergo the same scientific examination as other measures with similar purposes (e.g., intelligence tests). Furthermore, they took issue with the *asymmetry problem* of the IAT that may lead to finding artificially inflated levels of implicit bias towards certain groups, as well as with the premise that an association necessarily equates to an attitude.

Forscher et al. (2017) also completed a meta-analysis of 492 studies and found that, among other things, a change in implicit bias is not likely to change behavior nor do implicit measures strongly correlate to behavior. This suggests that people may engage in behaviors that seem contrary to the bias the implicit measure indicated they hold.

The Impact of Racial Bias in Education

Explicit bias, implicit bias, and racial/ethnic attitudes may have a negative effect on the educational experience of some students. Warikoo, Sinclair, Fei, and Jacoby-Senghor (2016) stated that the slight correlation between explicit attitudes and implicit bias, specifically *implicit racial associations*, may account for the persistence of racial disparity in special education, despite individual and systematic attempts to remedy the problem.

The implicit racial bias of teachers has also been found to negatively affect the academic achievement of minority students. As previously mentioned, researchers have found that many people have an implicit bias in favor of Whites (McConnell & Leibold, 2001; McLalen, Johnson, Dovidio, & Pearson, 2006) and that this implicit bias plays a role in special education decisions (Huebner, 1991). Jacoby-Senghor, Sinclair, and Shelton (2016) completed two studies to

investigate the relationship between teachers' implicit racial/ethnic bias and students' performance. They hypothesized that white teachers feel anxious when interacting with black students and that this anxiety results in less effective teaching. This lower quality instruction would then negatively impact the academic achievement of minority students. In Study 1, adult White participants were always in the teacher role and their implicit bias was measured using a subliminal priming task. The researchers controlled for explicit bias, which was measured by the Attitudes Towards Blacks assessment. The learners were White adults in some pairs, and Black adults in others. Each participant in the teacher role (always White) gave a lesson to the participant in the learner role. After the lesson, there was a discussion period and a test. The lessons were videotaped and coded by individuals who were not privy to the explicit or implicit bias scores of the participants in the teacher role. The videos shown to those doing the coding did not show the learner. The coders rated the anxiety level of the participants in the teacher role. The tests completed by the participants in the learner role were later graded by coders who did not know the explicit bias, implicit bias, or anxiety levels of any of the participants in the teacher role. Results of Study 1 suggested that the teacher participants' implicit bias was negatively correlated with performance of Black students ($t(48) = -1.82$) and that teacher participants' with higher levels of implicit bias also had higher levels of anxiety while teaching the lesson (Jacoby-Senghor, Sinclair, & Shelton, 2016).

Study 2 involved having non-Black participants view the videos of the previously recorded lessons. They then took the same test administrated in Study 1. The intent of Study 2 was to address the assumption that Black learners may have performed worse on the test because of a perception that the teacher participant may show bias towards them (identity threat). The

test performance of the non-Black students was similar to that of Black students in Study 1, when they viewed a video of a cross-race teacher and learner.

One potentially significant educational impact of racial/ethnic bias is that of school discipline. Racial/ethnic disproportionality in suspension and expulsion rates, especially for Black/African American males, exists throughout the United States. Carter, Skiba, Arredondo, and Pollock (2017) noted that Black students often received more severe discipline, for similar infractions, than their White peers. This is significant because not only do suspensions and expulsions keep students from learning in the classroom, they are also associated with higher dropout rates (Balfanz, Byrnes, & Fox, 2014) and higher rates of incarceration, often referred to as the school-to-prison pipeline (McNeal, 2016). This is also connected to special education referrals, since discipline referrals are often what begins an Emotional/Behavioral Disability (E/BD) referral.

Impact of Racial Bias in Special Education Referrals

Harry and Anderson (1994) stressed the impact of student factors like race in special education referrals, especially for Black/African American males. The disproportionate representation of Black/African American students in special education is, as previously discussed, most prevalent in IDEA categories (e.g., SLD, E/BD, IND) that require the subjective judgement of educational professionals as opposed to IDEA categories (e.g., orthopedic impairment, hearing impairment) that require medical information regarding physical characteristics. Since the IDEA categories in which Black/African American students are most overrepresented involve the judgement of educational professionals, such judgements are subject to the possibility of personal bias (Harry & Anderson, 1994).

Teachers may be more likely to refer Black/African American students because they lack the training necessary to understand the educational impact of cultural and socioeconomic differences (Moore, 2002). Furthermore, teachers may mistake these differences for indications of academic and behavioral concerns. Unfortunately, such differences have been considered to be deficits (Harry & Anderson, 1994; Hillard, 1980), while the talents of minority students may go unnoticed. For example, a teacher who speaks Standard American English (SAE) may see students who uses African America English (AAE) as less intelligent than students who use SAE. Additionally, the disconnect between those using SAE and those using AAE may result in miscommunication, misunderstandings, and frustration (Seymour, Abdulkarim, & Johnson, 1999).

Other factors, like the way a student moves, may also negatively impact teacher perceptions of his/her behavior. Neal, McCray, Webb-Johnson & Bridgest (2003) completed a study with 136 middle school teachers. The participants observed video tapes of similar sized male students walking in the hall and into the classroom. The movement style focused on a standard walk (usually associated with Whites) and a stroll (usually associated with Blacks). The video tapes included an African American student demonstrating a standard walk and a stroll as well as a European American student demonstrating a standard walk and a stroll. The teachers then answered questions regarding the achievement and aggression of each student. Teachers rated both African American and European American students demonstrating the stroll to be lower in achievement and higher in aggression than their counterparts demonstrating the standard walk. The authors concluded that teachers are prone to see such cultural difference, like walking style, as indicative of cognitive and behavioral functioning.

Self-Efficacy

Self-efficacy influences how much effort an individual will put forth and how long he/she will stick with a challenging task (Bandura, 1977). Bandura (1993) explained how actions first begin as thoughts that review the possible outcomes of effort and action. People who have high self-efficacy tend to envision their actions leading to a successful outcome, but those with low self-efficacy envision their actions leading to failure. Bandura (1993) noted the importance of not only having an appropriate skill set but also being able to use that skill set under challenging conditions concluding that an individual's thinking may explain significant differences in his/her performance.

Bandura's (1993) thoughts on how social comparison influences self-efficacy are of particular interest with regard to racial/ethnic disparity in special education in terms of how students relate to their peers. Bandura (1993) discusses how, in absence of objective measures of success, individuals compare their performance to the performance of other individuals around them. This social comparison may be problematic when students with fewer educational opportunities and resources compare their performance to students with many educational opportunities and recourses. Further issues may arise when teachers compare the performance of students with different educational opportunities and resources.

Teacher Efficacy

The efficacy of teachers has important educational implications. The earliest reference to *teacher efficacy* was in a study completed by Barfield and Burlingame in 1974 in which teachers indicated their agreement or disagreement with statements (Woolfolk & Hoy, 1990). Results of this study included that teachers with lower efficacy were more likely to view control as

important and were therefore more likely to spend more resources on controlling aspects of their environment (Barfield & Burlingame, 1974). Interestingly, Barfield and Burlingame (1974) also suggested teachers' pupil control ideology (PCI) differed by the socioeconomic status (SES) of the school, which may result in the operating systems of low SES schools to be more punitive in nature than those of higher SES schools.

Berman, McLaughlin, Bass, Pauly, & Zellman (1977) once defined teacher efficacy as "the extent to which the teacher believes he or she has the capacity to affect student performance" (p. 137). Tschannen-Moran, Hoy, and Hoy (1998) explained that self-efficacy focuses on the *perception* an individual has of his/her capabilities and that it is different than their actual capabilities. Based on their (sometimes incorrect) approximations of their skills, people select the activities and resources to put towards those activities. Differences in self-efficacy explains some differences in the overall effectiveness of teachers (Gibson & Dembo, 1984). Self-efficacy may also influence how teachers make special education referral decisions.

Conceptualizing and Measuring Teacher Self-efficacy

Appropriately and effectively measuring teacher self-efficacy has proven to be challenging, although there is much agreement with regard to factors that impact teacher self-efficacy. Teacher efficacy measurements have been heavily influenced by the work of Albert Bandura (1977, 1993). In developing the *Teacher Efficacy* Scale, Gibson and Dembo's (1984) analysis yielded two factors of teacher efficacy. The first was that of personal teaching efficacy, which includes the belief the teacher has that he/she possess the prerequisite skills to positively effect student learning and can be thought of as the amount of ownership the teacher feels for the academic achievement and classroom behavior of his/her students (Gibson & Dembo, 1984).

The second factor was related to external and environmental factors that seemed beyond the control of the teacher. The authors noted that both of these factors correspond to Bandura's conceptions of outcome expectancy and self-efficacy.

The relationship between these two factors, *personal teaching efficacy* and *general teaching efficacy*, is an important one. As Coladarci and Breton (1997) explain, a teacher may believe that certain educational practices may lead to positive educational outcomes but may also believe that he/she does not possess the skills to implement such instructional practices. For example, a teacher may whole-heartedly agree that providing a student with targeted, tiered interventions will lead to significant learning gains but at the same time hold the belief that he/she does not have the necessary training and know-how to implement such interventions. The converse may also hold true. A teacher may believe that he/she has all the necessary training to implement targeted, tiered interventions but also believe that such interventions will have little or no impact on student achievement because of external factors (e.g., student socioeconomic status). Furthermore, a teacher may believe that the interventions would be successful but feel that the amount of effort required to implement the interventions is more than he/she has to give. All of these scenarios are likely to impact the actions of the teacher.

Tschannen-Moran and Hoy (2001) developed a teacher efficacy measurement scale based on three key factors: efficacy for instructional strategies, efficacy for classroom management, and efficacy for student engagement. Their measure is considered to have strong factor structure and construct validity, and it is often used in educational research. They developed both a short and long form of their scale. Both forms yield a score within each factor as well as an overall score.

Bandura (2006) provided numerous suggestions for the construction of self-efficacy measures, insisting that such measures needed to be designed to measure self-efficacy under specific situational conditions (task demands). The need for specificity of the environmental circumstances requires that measures be amended to each particular domain of functioning in question. Bandura (2006) stresses the importance of phrasing questions to meet the requirements for measuring *perceived* abilities. He highlighted the need to use *can do* phrasing instead of *will do* phrasing. He cautions against confusing measures of, "*self-esteem*, *locus of control*, and *outcome expectancies*" (Bandura, 2006, p. 309) with perceived self-efficacy.

Impact of Teacher Self-efficacy

The educational impact of teacher self-efficacy has been well documented. Teachers with a strong sense of self-efficacy have been found to be more organized, better planned, more confident, and more willing to try different instructional methods (Allinder, 1994). Ashton, Webb, and Doda (1983) completed a study with teachers from 48 high schools and found that there was a significant relationship between teacher efficacy and the academic achievement of students. Additionally, they found that teachers' self-efficacy also related to their behaviors towards students in terms of being attentive, positive, and encouraging.

Mohamadi and Asadzadeh (2012) completed a study with 284 Iranian teachers from 18 different schools. Not only did the researchers find that teacher self-efficacy impacted student achievement, they found that both mastery and vicarious experiences, as well as verbal persuasion increased teacher efficacy. The authors stressed the importance of the link between teacher efficacy and student achievement saying that as teachers' self-efficacy increases, so does their belief in their ability to positively impact the educational experiences of their students even

in the face of challenges. Consequently, Mohamadi and Asadzadeh (2012) suggested that it is a necessity to increase teacher self-efficacy because of the direct relationship it can have on educational outcomes.

Klassen and Tze (2014) conducted a meta-analysis (n = 9,216) to determine the strength of the relationship between the psychological characteristics of teachers, including efficacy, and the effectiveness of their teaching. They found a statistically significant, although small effect, between teacher psychological characteristics and external measures of teaching effectiveness. Kim and Seo's (2018) meta-analysis drew similar conclusions. Their meta-analysis included the review of 16 studies (*n*= 4,130) with overall results that indicated that there is a significant positive correlation between teacher self-efficacy and the academic achievement of their students. They, like Klassen and Tze (2014), found a small effect size.

Teacher Efficacy and Special Education

Teachers with strong self-efficacy may be less likely to make special education referrals. Meijer and Foster (1988) found that teachers with higher self-efficacy scores rated the described academic or behavioral problems as less serious and indicated that were less likely to see a need for a special education referral. Podell and Soodak (1993) completed a similar study, in which participants were asked to complete Gibson and Dembo's (1984) efficacy scale and review a case study. Teachers with high personal efficacy were more likely to determine that a regular education setting was appropriate. The researchers found that the low socioeconomic status (SES) of the student impacted referral decisions. This was not the case for students described as high SES, as teacher efficacy did not seem to be related to placement decisions in these cases. This suggests that when teachers see themselves as incapable of increasing student achievement

and maintaining appropriate classroom management, bias is more likely to inadvertently be a part of the decisions they make about economically disadvantaged children (Podell & Soodak, 1993). This may help to explain some aspects of the racial/ethnic disparity in special education.

Summary

Research results indicate that, in spite of effort to improve the situation, there is still significant racial/ethnic disparity in special education. Although Response to Intervention (RTI) was intended to minimize the problem of racial/ethnic disparity in special education, that has not been the case. The reason for this appears to be that issues unrelated to the academic achievement and cognitive abilities of the students impact special education decisions. These include the role of racial/ethnic bias that may lead teachers to misattribute the educational difficulties of students to cognitive deficits. This is further complicated by teachers with low self-efficacy seeing these educational difficulties as insurmountable deficits, and therefore seeking special education services.

CHAPTER THREE: METHODOLOGY

Introduction

The principal goal of this study was to determine the relationship between teacher perceptions towards RTI, racial/ethnic attitudes, and self-efficacy and special education referral decisions in an effort to explore the larger issue of racial/ethnic disparity in special education placements. Specific instruments were used to measure the independent variables (teacher perceptions of RTI, racial/ethnic attitudes, and self-efficacy), and the researcher wrote vignettes to determine the perception of the academic and behavior concerns described and the likelihood of a special education referral. A small pilot study was conducted to complete a manipulation check of the vignettes.

This chapter further describes the methodology used to answer the research questions presented in Chapter 1. This chapter includes information about the selection of the participants, instrumentation, data collection, and the data analysis.

Study Design

In this non-experimental study, the researcher used a convenience sample of elementary classroom teachers from three different school districts. Teachers self-selected to participate in the study. Primary data was collected through survey measures. Quantitative, within subject data analysis was conducted.

Participants

A convenience sample was drawn from elementary teachers from three Florida public school districts. Although the state and the district oversee charter schools, their management is independent of that of the district in which they reside. Therefore, charter schools were not

included. Center schools, those to which students are assigned (e.g., discipline center schools), were not included.

A total of 36 elementary schools were selected to participate in the study. These schools combined had similar characteristics to their overall district in terms of racial/ethnic demographics, percentage of English Language Learners (ELL), and percentage of exceptional student education students (ESE). As per district policies, school principals were contacted regarding staff participation in the study. A total of 17 elementary schools agreed to participate in the study. See Table 3.1 for sample sizes in each district. The enrollment group refers to the size of the student population within the school district.

Table 3.1: Participants by District

District	Number of Participants	Enrollment Group
District 1	17	Greater than 100,000
District 2	5	Greater than 100,000
District 3	29	40,000 to 100,000

This sample was limited to teachers currently assigned to a K-5 classroom teaching position, with at least one year of teaching experience. Elementary school teachers were chosen because most special education services begin in elementary school, and classroom teachers are often the ones generating special education referrals. Participants were required to have at least one year of teaching experience in order to increase the likelihood that the teacher had been exposed to the RTI and special education services in his/her school.

A total of 68 teachers consented to participant in the online survey. See Table 3.2 for participant characteristics. Of those, a total of 51 participants completed all three survey measures (self-efficacy, attitude towards RTI, and racial/ethnic attitudes). The response rate was approximately 11.7%. This response rate estimate is based on the number of classroom teachers listed on the participating schools' websites and may differ somewhat from the actual number of teachers who received the flyer to participate, given that most flyer were sent to principals and distributed by school staff. Most participants were White (74.51%) and female (94.11%). The percentage of participants from each grade level ranged from 11.76% (4th grade) to 19.61% (3rd grade and also 5th grade). Most participants held a Master's degree (50.98%) followed a Bachelor's degree (45.10%). Most participants had 6-10 years of experience (35.29%) followed by 11-15 years of experience (25.49%).

Table 3.2: Participant Demographics

Teacher Characteristic		Number of Participants (*n*=51)	Percentage of Participants
Female		48	94.11%
Male		2	3.92%
Prefer Not to Answer		1	1.96%
Grade Level Taught	K	9	17.65%
	1	7	13.72%
	2	9	17.65%
	3	10	19.61%
	4	6	11.76%
	5	10	19.61%
Years of Experience	Less than 5 years	3	5.88%
	6-10 years	18	35.29%
	11-15 years	13	25.49%
	16-20 years	11	21.57%
	21-25 years	1	1.96%
	More than 25 years	5	9.80%
Highest Level of Education	Bachelor's Degree	23	45.10%
	Master's Degree	26	50.98%
	Specialist Degree	1	1.96%
	Doctorate Degree	1	1.96%
Ethnicity	American Indian or Alaska Native	0	0.00%
	Asian	1	1.96%
	Black or African American	4	7.84%
	Hispanic or Latin	7	13.72%
	Native Hawaiian or Other Pacific Islander	0	0.00%
	White	38	74.51%
	Prefer Not to Answer	1	1.96%

Materials and Instrumentation

Vignettes

The researcher wrote four vignettes describing academic and behavior concerns for four fictitious, Black/African American, third grade, male student (See Appendix D). The first vignette described Jayden, a student with mild reading and mild behavior concern. The second described Michael, a student with a severe reading concern and a mild behavior concern. The third vignette described Jacob who is a student with a mild reading concern and a significant behavior concern. The fourth vignette described Anthony, a student with a severe reading concern and a severe behavior concern. A manipulation check was completed using two groups of experts in the area of reading and/or behavior before the vignettes were presented to K-5 classroom teachers. This was done to determine whether there were sufficient differences between the vignettes and to establish the whether the concerns described in the vignettes were mild or severe. After reading each vignette, the teacher participants were asked to answer the following questions using a 7-point rating scale that ranged from "no concern" (1) to "significant concern" (7) for the questions regarding reading and behavior and "not at all likely to refer" (1) to " very likely to refer" (7) for the question regarding special education referral :

1. How would you rate the severity of the reading concerns described in this vignette?
2. How would you rate the severity of the behavior concerns described in this vignette?
3. How likely would you be to refer this student for a special education evaluation?

Perceptions of RTI

A modified version of The RTI Survey (Castro-Villarreal, Rodriguez, & Moore, 2014) was used to measure perceptions and attitudes towards RTI (see Appendix A). The original measure,

developed by Castro-Villarreal, includes 54 Likert scale questions and six free response questions to measure six areas. These areas include *Knowledge and Understanding of RTI*, *Training in RTI*, *Resources and Supports*, *Time Needed*, *Perceptions of RTI*, and *Likeability of Personnel Involved in RTI*.

The questions were developed based on literature in the field and were reviewed by individuals who were both academics and licensed specialists in School Psychology, followed by revisions, a second review, and a small pilot study. According to Castro-Villarreal, Rodriguez, and Moore (2014), although further analyses of the Likert items was being conducted, reliability and validity data for this measure was not available. The themes yielded through the open response questions were consistent with key RTI features identified by other researchers (Fuchs & Fuchs, 2005; Sanger, Friedli, Brunken, Snow, & Ritzman, 2012; Hazelkorn, Bucholz, Goodman, Duffy, & Brady, 2011).

For the present study, The RTI Survey was shortened to 23 Likert scale questions. These questions addressed five categories of issues regarding RTI: *Knowledge and Understanding of RTI*, *Training in RTI*, *Resources and Supports*, *Time Needed*, and *Perceptions of RTI*. Similar questions were removed in order to make the survey less onerous on the participants, while still collecting key information. Items regarding *Likeability of Personnel Involved in RTI* were removed because they asked about specific people; staff vary from school to school, and some teachers who are new to the school may not know RTI staff well enough to respond to the questions. None of the free response questions were included on the Revised RTI Survey. Some of the free response questions were not used because they addressed school or classroom specifics (e.g., number of students served, personnel involved, barriers to RTI in their

classrooms). The others were not used because they addressed teacher suggestions for RTI improvement, or aspects of RTI knowledge and/or training that are also addressed in the Likert scale questions. One question was reworded from *RTI is helpful for referring to Special Education* to *RTI data are helpful when determining whether to refer a student for a special education evaluation* in order to clarify the aspect of RTI and special education in question. This revised version of the RTI Survey uses only a total score to measure perceptions of RTI. Sample items are provided in Table 3.3.

Table 3.3: Revised RTI Survey Sample Items

RTI Issue Category	Sample Item
Knowledge and Understanding of RTI	I understand the RTI tiered system.
Training in RTI	The RTI training provided by my school or district was sufficient.
Resources and Supports Time Needed	My school provides me with enough resources to implement RTI effectively.
Perceptions of RTI	RTI has led to positive academic changes for all students.

Racial/Ethnic Attitudes

The Color-Blind Racial Attitudes Scale (CoBRAS; Neville, Lilly, Duran, Lee, & Browne, 2000) was used to measure racial/ethnic attitudes (see Appendix B). This instrument includes 20, six-point Likert-type questions to measure three factors: *Unawareness of Racial Privilege*, *Institutional Discrimination*, and *Blatant Racial Issues*. This measure yields a score for each of the factors and a total score.

The first factor, *Unawareness of Racial Privilege*, includes items like "Race is very important in determining who is successful and who is not*"*. Items like *"*English should be the

only official language in the U.S*".* are included within the *Institutional Discrimination* factor. The third factor, *Blatant Racial Issues,* includes items like "Racism is a major problem in the U.S*".* Neville, Lilly, Duran, Lee, & Browne (2000) examined the reliability and validity of the COBRAS.

A principal components analysis was first used to determine how items loaded on each factor, followed by measures of internal consistency for each factor. The alpha coefficients on the three factors measured by this instrument ranged from .76 to .83, and the total score had a Cronbach's alpha of .91 (Neville, Lilly, Duran, Lee, & Browne, 2000).

Their second study further explored the factor structure determined in the first study as well as validity of the instrument. Although the second study confirmed a three-factor model found in the first study, the three factors were strongly correlated with each other ($.42 < r < .54$). The reliability of the CoBRAS was .86. Concurrent validity was established by correlating the factors of the CoBRAS with Global Belief in a Just World Scale (GBJWS) and the Multidimensional Belief in a Just World Scale (MBJWS), for which correlations ranged from .39 to .61. Discriminant validity was supported by finding no strong associations between the CoBRAS and the Marlowe-Crowne Social Desirability Scale (MCSDS). The criterion-related validity of the CoBRAS was explored using the group difference method. This revealed statistically significant results when comparing racial groups and sex.

Their third study revealed a two-week test-retest reliability coefficient of .68 for the CoBRAS. The fourth study examined the concurrent validity further by comparing the CoBRAS to other measures of racial/ethnic attitudes such as the Quick Discrimination Index (QDI) and The Modern Racism Scale (MRS). All of these measures were strongly correlated with the

CoBRAS. Correlations ranged from -.25 to -.83 between the CoBRAS and the QDI and .36 to .55 between the CoBRAS and the MRS. The fifth study was used to determine the sensitivity of the CoBRAS with regard to a multicultural training intervention. A statistically significant difference (p=.03) was found between the total score on the CoBRAS pretest and the total score on the CoBRAS posttest after the multicultural training intervention.

Teacher Efficacy

To measure teacher efficacy, participants completed Tschannen-Moran and Hoy's (2001) Ohio State Teacher Efficacy Scale (OSTES) which is also referred to as the Teachers' Sense of Efficacy Scale (short form). This measure includes three factors: *engagement, instruction,* and *classroom management* (see Appendix C). The short form consists of 12 questions that are measured on a nine-point Likert type scale. Sample items are provided in Table 3.4. A score for each factor, is calculated using the unweighted means of the items that are included within each factor, and a total score is calculated using the unweighted means of all items.

Table 3.4: Teachers' Sense of Efficacy Scale (short form) Sample Items

Subscale	Sample Item
Efficacy in Student Engagement	How much can you do to motivate students who show low interest in school work?
Efficacy in Instructional Strategies	How much can you use a variety of assessment strategies?
Efficacy in Classroom Management	How much can you do to control disruptive behavior in the classroom?

Tschannen-Moran and Hoy (2001) completed separate psychometric studies on the TSES and determined that each subscale had good internal consistencies, ranging from 0.72 to 0.82.

The reliability for all 18 items of the scale was 0.95. A factor analysis indicated that factor loadings for individual items ranged between 0.48 and 0.70 on the target construct of efficacy. Additionally, the short form yielded an alpha coefficients of .90 (Tschannen-Moran & Hoy, 2001).

Likelihood of Special Education Referral

To measure the likelihood of referring the student for a special education evaluation, the researcher wrote four vignettes for this study because no other vignettes that include all required features were available. Each vignette included a paragraph description of a fictional 3rd grade, Black/African American, male student. Each vignette described aspects of the student's reading and externalized behaviors. The participants were asked: *How likely would you be to refer this student for a special education evaluation?* Note that a special education referral may be for academics, behavior, or for both.

Vignette Pilot Study

Content area experts self-selected to participate by responding to an email sent by the researcher to professional contacts in the field, alumni from a school psychology program, academics at universities in Florida who specialized in reading, and a group of professionals within a social media group. Communication between raters regarding the vignettes was possible but not probable.

The content area experts were randomly assigned to one of two groups in order to have groups that were similar in composition based on the primary expertise of the reviewers. A manipulation check was completed by having 49 individuals review the vignettes and rate the severity of the academic and the behavior problem described. The vignettes were reviewed by

practicing school psychologists, licensed mental health counselors, certified school counselors, reading specialists, and special education teachers (See Table 3.5). Additional qualifications, reported as "Other", were one behavior analyst and one Licensed Marriage and Family Therapist. One participant identified an addition qualification did not report the qualification.

Table 3.5: Pilot Study Participant Qualifications

Qualification		Group 1 *n*= 20	Group 2 *n*= 29
Area of Certification or Licensure	Exceptional Education Teacher	2	2
	Reading Specialist	1	5
	Certified School Counselor	2	2
	Licensed Mental Health Counselor	3	3
	School Psychologist	17	18
	Other	0	3
Highest Level of Education	Master's Degree	5	4
	Specialist Degree	14	13
	Doctorate Degree	5	12

Note: Some participants hold certification or licensure in more than one area.

The vignettes were first reviewed by a total of 20 professionals most of whom held certification and/or licensure in school psychology (*n*=17). School psychologists rated the significance of both the academic and behavioral concern, exceptional education teachers and reading specialists rated the significance of the academic concern only, and certified school counselors and licensed mental health counselors rated the significance of the behavior concern only.

A Kolmogorov-Smirnov test was run to determine normality of the data sets for each vignette. Since normality was violated for some of the data sets, a Wilcoxon sign rank was completed to compare the intended rating of each vignette to the median rankings given by the professionals in Group 1. This statistical measure was used to determine whether the median of

the sample (Group 1) was equal to the hypothesized median rating of either 2 (mild concern) or 6 (severe concern).

A statistically significant difference between the hypothesized median and the Group 1 median was found for the severity of Jacob's academic concern, Michael's academic concern, Jayden's academic concern, and Jayden's behavior concern. No statistically significant difference was found between the hypothesized median and the Group 1 median for the severity of Anthony's academic concern, Jacob's behavior concern, Michael's behavior concern, or Anthony's behavior concern. The greatest variance was observed for Jacob's academic concern (2.568) and Michael's academic concern (2.134). The least variance was observed for Jacob's behavior concern (.537) and Anthony's behavior (.600) (See Table 3.6).

Table 3.6: Statistics Summary for Group 1 of the Pilot Study

	Group 1									
	Academics *n*=20					Behavior *n*=22				
Vignette	H Mdn	Min.	Max.	Mdn (SD)	p	H Mdn	Min.	Max.	Mdn (SD)	p
Jayden	2	3	7	5 (0.933)	.001	2	1	5	3 (1.006)	.000
Jacob	2	1	7	3 (1.603)	.001	6	4	7	6 (.733)	.248
Michael	6	2	7	4 (1.461)	.001	2	1	5	2 (1.008)	.073
Anthony	6	3	7	5.5 (1.191)	.058	6	5	7	6 (.774)	.405

The results were used to revise each vignette. The survey given to Group 1 displayed the vignette and then the two questions regarding the severity of the academic concern and the severity of the behavior concern, which did not allow the reviewers to refer back to the vignette when answering the questions. The researcher edited the Qualtrics survey to display the vignette and the two questions on one screen. The revised vignettes and questions were sent via email to a second set of different of reviewers (Group 2).

There were 29 reviewers in Group 2, most of whom were school psychologists (*n*=18). Group 2 contained more Reading Specialists (*n*=5) and more reviewers with doctoral degrees (*n*=12) than Group 1 (See Table 3.7). As with Group 1, the Kolmogorov-Smirnov test indicated that normality was violated for some of the data sets. Therefore, the Wilcoxon signed rank test was used to determine whether the median of the sample (Group 2) was equal to the hypothesized median rating of either 2 (mild concern) or 6 (severe concern).

Table 3.7: Statistics Summary for Group 2 of the Pilot Study

	Group 2									
	Academics *n*= 24					Behavior *n*= 24				
Vignette	H Mdn	Min.	Max.	Mdn (SD)	p	H Mdn	Min.	Max.	Mdn (SD)	p
Jayden	2	1	5	4 (1.167)	.000	2	2	5	3 (.908)	.000
Jacob	2	1	7	3 (1.719)	.001	6	5	7	6 (.761)	.285
Michael	6	3	7	5.5 (1.100)	.079	2	1	5	2 (1.060)	.742
Anthony	6	4	7	6 (.941)	.371	6	3	7	6 (1.140)	.629

Note: For Anthony, Academic *n*=23 and Behavior *n*=23. One reviewer did not respond to that vignette.

The most agreement among the reviewers was found for Jacob's behavior concern (range of 2) and then for Anthony's academic concern and Jayden's behavior concern (both a range of 3). No statistically significant difference was found between the hypothesized median and the Group 2 median for the academic and behavior concern for Michael's vignette, for Anthony's vignette, or for Jacob's behavior concern.

A statistically significant difference was found for Jayden's vignette and for Jacob's behavior concern. The Group 2 median for Jayden's academic concern was 4, with 70.8% of reviewers rating it a 1 and 4 and no reviewers rating it a 6 or 7. For Jayden's behavior concern, the mode was 3, with a cumulative percentage of 66.7% of reviewers scoring the vignette a 2 or a 3.

Although there was a statistically significant difference between the hypothesized median and the Group 2 median for Jacob's academic concern, the Group 2 median was 3, suggesting that on the 7-point scale, it was still considered to be a mild concern. The percentage of reviewers rating the academic concern a 1, 2, 3, or 4 was 75.0%.

Although a statistically significant difference between the hypothesized median and the Group 2 median was found with two of the academic concerns and one of the behavior concerns, these vignettes still fall within the mild rating on the 7-point scale. The medians of the hypothesized mild and severe concerns do differ as expected according to the responses from the Group 2 reviewers, suggesting that there are The feedback provided by some reviewers suggested that some may have interpreted the academic concern as performance in school, rather than the severity of just the student's reading difficulty. Therefore, to clearly delineate between academic concerns and the impact of behavior on academic performance, the question on the survey was changed to "How would you rate the severity of the reading concerns described in this vignette?"

Statistical Analysis of the Vignette Responses

Vignette Descriptive and Inferential Statistics

A comparison of the vignette medians for the teacher and expert group (Group 2) ratings indicated that the teachers and experts had similar ratings for the severity of the academic concerns presented. The vignettes described the academic concerns and behavior concerns for four fictitious, 3rd grade, male, Black/African American students. The vignette about Jayden represents a student with a mild academic and mild behavior concern. The vignette describing Jacob represents a student with a mild academic concern and a severe behavior concern, while

Michael represents a student with a severe academic concern and a mild behavior concern. The vignette about Anthony represents a student with a severe academic concern as well as a severe behavior concern. Please note that for Anthony, Expert Group 2, *n*=23 because one reviewer did not respond to that vignette. Teachers and Expert Group 2 had the same or a similar median score for the academic concern for both of the vignettes that described students with mild behavioral problems (Jayden and Michael). However, the expert group rated the severity of the academic concern for the student with a mild academic problem and severe behavioral problem (Jacob) somewhat higher than that of the teacher group. The teacher group rated the severity of the academic concern of the student with severe academic and behavioral problems (Anthony) somewhat higher than did the expert group (See Table 3.8).

The median of the teacher ratings of the behavior concern was higher than that of the expert group for all four vignettes, indicating that the teachers viewed the severity of the behavior concern presented as more severe than did the expert group (See Table 3.9).

Table 3.8: Statistics Summary of Teacher Participants and Expert Group 2 Ratings of the Academic Concern

	Severity of the Academic Concern					
	Teacher Participants			Expert Group 2		
Vignette	Min.	Max.	Mdn	Min.	Max.	Mdn
Jayden	2	7	4	1	5	4
Jacob	1	7	2	1	7	3
Michael	2	7	6	3	7	5.5
Anthony	3	7	7	4	7	6

Note. For Teacher Participants, *n*=51. For Experts Group 2, *n*=24. Jayden represents a student with a mild academic and mild behavior concern. Jacob represents a student with a mild academic concern and a severe behavior concern. Michael represents a student with a severe academic concern and a mild behavior concern. Anthony represents a student with a severe academic concern and a severe behavior concern.

Table 3.9: Descriptive Statistics Summary of Teacher Participants and Expert Group 2 Ratings of the Behavior Concern

	Severity of the Behavior Concern					
	Teacher Participants			Expert Group 2		
Vignette	Min.	Max.	Mdn	Min.	Max.	Mdn
Jayden	2	7	5	2	5	3
Jacob	4	7	7	5	7	6
Michael	1	6	3	1	5	2
Anthony	4	7	7	3	7	6

Note. For Teacher Participants, n=51. For Experts Group 2, n=24. Jayden represents a student with a mild academic and mild behavior concern. Jacob represents a student with a mild academic concern and a severe behavior concern. Michael represents a student with a severe academic concern and a mild behavior concern. Anthony represents a student with a severe academic concern and a severe behavior concern.

Vignette Inferential Statistics

A comparison of the medians of the ratings of each vignette, for both the teacher participants and the expert group, was calculated using the Mann-Whitney U test, since the dependent variable was ordinal level data.

The results indicated that there were no statistically significant differences between the teacher and expert ratings of the academic concern for Jayden or Michael, both of whom had a mild behavior concern. A statistically significant difference was found for the academic concern for Jacob and Anthony, both of whom had a severe behavior concern (See Table 3.10). Jacob had a mild academic concern and Anthony had a severe academic concern. The results

suggested that the experts rated Jacob's academic concern as being significantly more severe than did the teacher participants. Teachers rated Anthony's academic concern as being significantly more severe than did the experts.

The Mann-Whitney U test was also used to calculate the relationship between the teacher and expert ratings of the behavior concerns. The results indicated a statistically significant difference in the ratings of the vignettes describing Jayden, Jacob, and Michael, although only the vignette describing Jacob included a severe behavior concern. No statistically significant difference was found between the teacher and expert ratings of the vignette describing Anthony's behavior (severe academic concern, severe behavior concern). These results suggested that the teacher ratings of the severity of the behavior concerns were significantly higher that the experts for all of the vignettes, except for the one describing Anthony.

Table 3.10: Mann Whitney U Results for Teacher Ratings and Expert Group 2 Ratings of the Academic and Behavior Concern

	Severity of the Academic Concern			Severity of the Behavior Concern		
Vignette	*U*	*Z*	*p*	*U*	*Z*	*p*
Jayden	594	-.211	.833	357.5	-2.761	.006
Jacob	424.5	-2.184	.029	404	-3.084	.015
Michael	569	-.508	.611	332	-2.422	.002
Anthony	357	-2.727	.006	441	-1.849	.064

Note. For Teacher Participants, *n*=51. For Experts Group 2, *n*=24. Jayden represents a student with a mild academic and mild behavior concern. Jacob represents a student with a mild academic concern and a severe behavior concern. Michael represents a student with a severe academic concern and a mild behavior concern. Anthony represents a student with a severe academic concern and a severe behavior concern.

Statistical Analysis of Research Study Instruments

Analysis of the instruments used in this study was completed in order to determine internal consistency of the instruments and to better understand teachers' perceptions of the severity of the academic and behavior concerns described in the vignettes. Some researchers (Angelle &

DeHart, 2011; Spear-Swerling, Brucker & Alfano, 2005), have found that teacher perceptions may differ by factors such as years of teaching experience and level of education. Therefore, a Kruskal-Wallis H test was used to determine the relationship between the grade level taught, years of teaching experience, highest level of education and the teacher ratings of the vignettes.

Statistical Analysis of the Teacher Ratings of Vignettes

The Kruskal-Wallis H test showed that there was no statistically significant difference in the ratings of the severity of the academic concern for Jayden, Michael, Jacob, or Anthony based on grade level taught. Additionally, no statistically significant difference was found for the likelihood of referral based on the grade taught by the responding teacher (See Table 3.11).

Table 3.11: Medians and Chi Squares for Teacher Ratings of the Vignettes by Grade Level Taught

	Vignette	Medians by Grade Level Taught						χ^2	*p*
		K	1	2	3	4	5		
Academic Concern	Jayden	4.11	3.86	4.11	3.40	3.76	3.10	6.792	.237
	Jacob	3.78	2.86	2.22	2.20	3.17	2.20	4.482	.482
	Michael	6.11	5.57	5.56	5.70	6.00	5.30	3.159	.676
	Anthony	6.67	6.86	6.00	6.90	6.33	5.80	7.820	.166
Behavior Concern	Jayden	4.33	3.86	3.86	4.10	4.67	4.30	2.330	.802
	Jacob	6.67	6.57	6.22	6.40	6.83	6.50	3.011	.698
	Michael	4.67	2.71	3.78	2.90	3.50	2.60	5.252	.386
	Anthony	6.67	6.57	6.00	6.40	6.17	6.20	2.664	.752
Likelihood of Referral	Jayden	2.56	2.00	3.00	2.80	4.33	3.10	7.908	.161
	Jacob	5.56	4.29	4.33	5.10	6.67	5.20	10.181	.070
	Michael	4.67	5.14	4.56	5.10	4.00	4.80	2.112	.833
	Anthony	5.56	6.29	5.44	6.70	6.83	6.60	6.423	.267

Note. Kindergarten *n*=9, First Grade *n*=7, Second Grade *n*= 9, Third Grade *n*=10, Fourth Grade *n*= 6, and Fifth Grade *n*=10. *df*=5

A Kruskal-Wallis H was also run to determine whether any statistically significant differences existed between the ratings of the vignettes and years of teaching experience or highest level of education. All participants were required to have at least one year of teaching experience to participate in the study. Teachers self-reported their years of teaching experience as less than 5 years, 6 to 10 years, 11 to 15 years, 16 to 20 years, 21 to 25 years, and more than 25 years. Teacher education was self-reported as Bachelor's Degree, Master's Degree, Specialist Degree, or Doctorate degree. No statistically significant differences were found between the ratings of the academic concern, the behavior concern, or the likelihood of special education referral based on the number of years of teaching experience or based on the highest level of education of the teacher participants (See Table 3.12 and Table 3.13). It should be noted that the relatively small number of degrees of freedom within some of the teacher characteristic categories (See Table 3.2) may have impacted the results of the Kruskal-Wallis H test.

Table 3.12: Inferential Statistics for Teacher Ratings of the Vignettes by Years of Teaching Experience

	Vignette	Medians by Years of Teaching Experience						χ^2	*p*
		<5	6-10	11-15	16-20	21-25	>25		
Academic Concern	Jayden	5.00	3.33	3.32	4.36	4.00	3.80	9.397	.094
	Jacob	2.67	2.28	2.62	3.09	2.00	3.60	1.049	.130
	Michael	6.67	5.50	5.69	6.09	2.00	5.60	8.521	.959
	Anthony	6.67	6.22	6.46	6.64	7.00	6.20	3.663	.599
Behavior Concern	Jayden	4.67	4.00	4.38	4.91	2.00	4.40	5.347	.375
	Jacob	7.00	6.50	6.54	6.55	7.00	6.00	2.565	.767
	Michael	4.00	2.89	3.23	3.00	1.00	3.00	6.593	.253
	Anthony	6.33	6.00	6.62	6.36	7.00	6.60	5.431	.366
Likelihood of Referral	Jayden	4.67	2.89	5.69	3.36	3.00	2.60	6.149	.292
	Jacob	3.00	5.83	4.92	4.27	6.00	6.00	9.175	.102
	Michael	6.00	4.44	4.69	5.18	2.00	4.80	5.095	.404
	Anthony	5.67	6.39	6.46	6.00	6.00	5.80	2.394	.792

Note. Less Than 5 Years *n*=3, 10 years *n*= 18, 11-15 years *n*= 13, 16-20 years *n*=11, 21-25 years *n*= 1, and More Than 25 Years *n*=5. *df*=5

Table 3.13: Inferential Statistics for Teacher Ratings of the Vignettes by Highest Level of Education

	Vignette	Medians by Highest Level of Education				χ^2	*p*
		Bachelor's Degree	Master's Degree	Specialist Degree	Doctorate Degree		
Academic Concern	Jayden	3.74	3.62	5.00	3.00	1.962	.580
	Jacob	2.83	2.65	1.00	2.00	2.681	.444
	Michael	5.56	5.73	4.00	7.00	4.147	.246
	Anthony	6.35	6.42	7.00	7.00	1.082	.781
Behavior Concern	Jayden	4.35	4.19	6.00	6.00	3.380	.337
	Jacob	6.43	6.54	7.00	7.00	1.181	.758
	Michael	3.13	2.92	4.00	3.00	2.745	.433
	Anthony	6.22	6.38	7.00	7.00	1.472	.689
Likelihood of Referral	Jayden	2.87	2.81	5.00	5.00	3.678	.298
	Jacob	4.96	5.15	7.00	7.00	2.857	.414
	Michael	4.74	4.73	3.00	7.00	3.092	.378
	Anthony	6.26	6.12	7.00	7.00	1.152	.765

Note. Bachelor's Degree *n*=23, Master's Degree *n*=26, Specialist Degree *n*=1, Doctorate Degree *n*=1. *df*=3

Statistical Analysis of the Revised RTI Survey

Given that a revised version of The RTI Survey (Castro-Villarreal, Rodriguez, & Moore, 2014) was used and that the developers of this instrument did not provide reliability statistics or a specific scoring method, the researcher conducted statistical tests to determine the underlying structure and the internal consistency of the revised RTI Survey.

Despite a relatively small sample size (*n*=51), exploratory factor analysis was completed using principal factor component analysis. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .718, which suggested that the sample size (*n*=51) was adequate. Bartlett's Test of Sphericity indicated a significance of *p*=<.001, which means that at least two questions were

highly correlated. A calculation using Spearman's rho indicated some correlation for all items, with correlation coefficients ranging from r_s= -.529 to r_s= .771 and statistical significance ranging from *p*= <.001 to *p*= .997.

Given the correlation of the items within the revised RTI Survey, a direct oblique rotation method was used for the exploratory factor analysis. The Component Correlation Matrix indicated weak correlation among the components with correlations ranging from -.348 to .261. Therefore, it was assumed that the components were orthogonal rather than oblique and a Varimax rotation method was employed.

The original RTI Survey developer indicated that the questions were based on six categories of issues regarding RTI support in the literature on this topic. The exploratory factor analysis results indicated that the first component had an eigenvalue of 8.262 and accounted for 35.920% of the variance. Although six factors were extracted, the remaining five components have eigenvalues ranging from 1.131 to 1.946, with eigenvalues for the remaining components ranging from .996 to .061. Although Kaiser's rule suggests including all components with eigenvalues higher than 1.0, these values are not much higher than 1.0. Interpretation of the scree plot also indicates that one component accounts for a significant amount of the variance.

The component matrix results indicated that 10 of the 23 survey items loaded onto a single factor with coefficients higher than .3. The remaining 13 items loaded onto two or more components, with some questions loading on as many as four factors.

Cronbach's alpha was calculated after accounting for reverse scored items. The revised RTI Survey has a strong α coefficient of .856, suggesting that the internal consistency of the revised RTI Survey is strong.

The statistical analysis of the revised RTI Survey suggested that the construct of perceptions of RTI is unidimensional and should be treated as a single factor, rather than more than one factor. Therefore, a total score for the revised RTI Survey was used in the statistical analysis.

A summary of the descriptive statistics is presented in Table 3.14. The Shapiro-Wilk test for each grade level taught, teaching experience, and highest level of education indicated that normality was violated. Therefore, a Kruskal-Wallis H test was used to determine whether any statistically significant differences existed between the Revised RTI Survey Total score and grade level taught, years of teaching experience, or highest level of education. No statistically significant differences were found.

Table 3.14: Descriptive Statistics Summary for the Revised RTI Survey

	n	Min.	Max.	Mean	SD
Revised RTI Survey	51	44.00	97.00	70.04	12.96

Statistical Analysis of the Color-Blind Racial Attitudes Scale (CoBRAS)

Using the sample of teachers for this study, the CoBRAS had a strong Cronbach's alpha of .870, suggesting that the internal consistency of the instrument was strong. The *Unawareness of Racial Privilege* ($\alpha = .823$) *Unawareness of Institutional Racism* ($\alpha = .700$), and *Unawareness of Blatant Racism* ($\alpha = .737$) subscales also had a high levels of internal consistency.

Descriptive statistics for the CoBRAS are presented in Table 3.15. Comparison of the subscales showed that the largest range was found between scores on the *Unawareness of Racial Privilege* subscale.

Table 3.15: Descriptive Statistics Summary for the Color-Blind Racial Attitudes Scale (CoBRAS)

	n	Min.	Max.	Mean	SD
Unawareness of Racial Privilege	51	10	42	27.90	7.93
Unawareness of Institutional Discrimination	51	7	33	19.62	5.88
Unawareness of Blatant Racial Issues	51	6	31	14.49	4.98

A Kruskal-Wallis H test was used to determine whether any statistically significant differences existed between the CoBRAS subscales and grade level taught, years of teaching experience, or highest level of education. No statistically significant differences were found.

Statistical Analysis of the Teachers' Sense of Efficacy Scale (TSES)

The Teachers' Sense of Efficacy Scale (TSES) was used to measure teacher efficacy. This scale includes three subscales; *Efficacy in Student Engagement*, *Efficacy in Instructional Strategies*, and *Efficacy in Classroom Management*. A calculation using Spearman's rho indicated some correlation for all items, with correlation coefficients ranging from r_s= -.006 to r_s= .969 and statistical significance ranging from p= <.001 to p= .778.

Cronbach's alpha indicated that the Teachers' Sense of Efficacy Scale had a strong coefficient of .86, suggesting that the internal consistency of the instrument was strong. The *Efficacy in Student Engagement* (α = .788) and *Efficacy in Classroom Management* (α = .832) subscales also had a strong internal consistency However, the *Efficacy in Instructional*

Strategies subscale had lower α coefficient of .648, which is questionable by some standards (e.g., Nunnally & Bernstein, 1994).

Descriptive statistics for the TSES are presented in Table 3.16. Comparison of the subscales within the TSES showed that the largest range of scores was observed within the *Efficacy in Student Engagement* subscale. The distribution for the subscales was relatively normal, with skewness ranging from -.300 to .167. The kurtosis of the subscales, which ranged from -.894 to .532 also suggests a relatively normal distribution. The skewness (.224) and kurtosis (-.350) for the TSES Total Score also suggest a relatively normal distribution of scores.

Table 3.16: Descriptive Statistics Summary for The Teachers' Sense of Efficacy Scale (TSES)

	N	Min.	Max.	Mean	SD
Efficacy in Student Engagement	51	14	34	26.745	4.216
Efficacy in Instructional Strategies	51	21	36	28.569	3.711
Efficacy in Classroom Management	51	18	36	28.765	4.44
TSES Total Score	51	62	106	84.078	10.166

A Kruskal-Wallis H test was used to determine whether any statistically significant differences existed between the TSES subscales and grade level taught, years of teaching experience, or highest level of education. A statistically significant difference (p=.042) was found between the grade level taught and the Efficacy in Instructional Strategies subscale score.

Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. This post hoc analysis revealed statistically significant differences in TSES Efficacy in Instructional Strategies subscale scores, between the 1st grade teachers (mean rank=13.14) and the 5th grade teachers (mean rank=36.25), p=.022, but not between any other grade levels. No statistically significant differences were found between the TSES subscale scores or total score and the years of teaching experience or the highest level of education.

Procedure

Teachers at participating schools received an invitation to participate in the research study. Teachers who agreed to participate in the study were asked to first read and respond to the vignettes and then to complete the Teachers' Sense of Self-Efficacy Scale, the RTI Survey, and then the CoBRAS in that order. Participants completed an anonymous online survey that included the vignettes, the revised RTI Survey, the Color-Blind Racial Attitudes Scale (CoBRAS), and the Teachers' Sense of Efficacy Scale (TSES).

Participants read the four fictional vignettes describing aspects of a student's reading and classroom behaviors. They then answered questions regarding their perceptions of the severity of the academic and behavior concerns. The vignettes described: (a) a mild academic concern along with a mild behavioral concern, (b) a significant academic concern with a mild behavioral concern, (c) a significant academic concern with a significant behavioral concern, and (d) a mild academic concern with a significant behavioral concern.

After reading each vignette, the participants were asked to answer the following 7-point scale questions:

1. How would you rate the severity of the reading concerns described in this vignette?
2. How would you rate the severity of the behavior concerns described in this vignette?
3. How likely would you be to refer this student for a special education evaluation?

The participants then completed the Teachers' Sense of Efficacy Scale (short form), the RTI Survey, the CoBRAS, and demographic questions. All measures were completed online using Qualtrics.

Demographic information including gender, ethnicity, grade assignment, years of teaching experience, highest level of education, and school zip code was also collected. Participants were asked to complete the questions regarding the vignettes first, in order to avoid cuing the participants to view the vignettes within a particular contextual framework (Tourangeau & Rasinski, 1988), in this case, within the context of RTI, racial/ethnic attitudes, and self-efficacy.

CHAPTER FOUR: RESULTS

Introduction

The researcher aimed to investigate the relationship between teacher perceptions towards RTI, racial/ethnic attitudes, and self-efficacy and special education referral decisions. In this chapter, the results of the data analysis completed to answer the two previously stated research questions will be presented. The data analysis of the survey instruments are presented first, followed by the correlation and regression analysis completed to answer the research questions.

Data Analysis for Research Questions

Research Question 1

What is the relationship between elementary school teachers' perceptions of RTI, attitudes towards race, and efficacy and their perceptions of male, Black/African American students with differing levels of academic and behavior concerns?

To answer the first research question, a series of two-tailed Spearman's rank-order correlations were computed to determine the relationships between teachers' perceptions of academic and behavioral concerns and their perceptions of RTI, racial/ethnic attitudes, and their sense of efficacy and their rating of the severity of the academic and behavior concern described in the vignettes.

Revised RTI Survey

Correlations between the RTI Total Score and the rating of the academic concern ranged from r_S =.009 to r_S=.135 among the four vignettes describing students with varying academic and behavioral problems. However, none of the correlations were statistically significant.

Correlations between the RTI Total Score and the rating of the behavior concern ranged from r_S =.076 to r_S=.254 but were not statistically significant (See Table 4.1).

Table 4.1: Spearman's Correlation Coefficients for RTI Total Score and Rating of the Academic and Behavior Concern

		Jayden	Jacob	Michael	Anthony
Academic Concern	*r*	.135	.009	.035	.118
	p	.345	.949	.809	.408
Behavior Concern	*r*	.216	.076	.230	.254
	p	.127	.596	.105	.072

Note. Jayden represents a student with a mild academic and mild behavior concern. Jacob represents a student with a mild academic concern and a severe behavior concern. Michael represents a student with a severe academic concern and a mild behavior concern. Anthony represents a student with a severe academic concern and a severe behavior concern.

Color-Blind Racial Attitudes Survey (COBRAS)

Correlations between each of the three CoBRAS subscales and the rating of the academic concern ranged from r_S =.-.141 to r_S=.214 among the four vignettes but were not statistically significant (See Table 4.2).

Table 4.2: Spearman's Correlation Coefficients for CoBRAS Subscale Scores and Rating of the Academic Concern

CoBRAS Subscale		Jayden	Jacob	Michael	Anthony
Unawareness of Racial Privilege	*r*	-.123	.161	-.044	-.141
	p	.388	.260	.757	.325
Unawareness of Institutional Discrimination	*r*	.186	.214	.038	-.045
	p	.191	.132	.793	.752
Unawareness of Blatant Racial Issues	Correlation Coefficient	.021	.037	-.012	-.019
	p	.881	.799	.935	.893

Note. Jayden represents a student with a mild academic and mild behavior concern. Jacob represents a student with a mild academic concern and a severe behavior concern. Michael represents a student with a severe academic concern and a mild behavior concern. Anthony represents a student with a severe academic concern and a severe behavior concern.

Correlations between each of the three CoBRAS subscales and the rating of the behavior concern for each type of student are presented in Table 4.3. None of the correlations between the CoBRAS subscale scores were significant except between *Unawareness of Institutional Discrimination* and the behavior concern for Jayden, which yielded a moderate, statistically significant, positive correlation. For Jayden, who displayed a mild academic and a mild behavior concern, teachers who lacked awareness of institutional discrimination viewed him as having a more severe behavior problem.

Table 4.3: Spearman's Correlation Coefficients for CoBRAS Subscale Scores and Rating of the Behavior Concern

CoBRAS Subscale		Jayden	Jacob	Michael	Anthony
Unawareness of Racial Privilege	*r*	-.129	-.208	-.025	.006
	p	.336	.860	.143	.969
Unawareness of Institutional Discrimination	*r*	.365**	.214	.214	.086
	p	.008	.131	.132	.547
Unawareness of Blatant Racial Issues	*r*	.069	-.164	.215	-.095
	p	.628	.250	.130	.508

Note. ** indicates $p<.01$. Jayden represents a student with a mild academic and mild behavior concern. Jacob represents a student with a mild academic concern and a severe behavior concern. Michael represents a student with a severe academic concern and a mild behavior concern. Anthony represents a student with a severe academic concern and a severe behavior concern.

Teachers' Sense of Efficacy Scale (TSES)

Spearman's rank-order correlation was again completed to determine the relationship between teachers' efficacy, as measured by the Teachers' Sense of Efficacy Scale (TSES), and their perception of the severity of the academic concern and the behavior concern. Correlations between each of the three TSES subscales and the rating of the academic concern ranged from r_S =-.148 to r_S=.111 but were not statistically significant (See Table 4.4).

Table 4.4: Spearman's Correlation Coefficients for TSES Subscale Scores and Rating of the Academic Concern

TSES Subscale		Jayden	Jacob	Michael	Anthony
Efficacy in Student Engagement	*r*	-.109	-.088	-.058	-.104
	p	.447	.541	.685	.468
Efficacy in Instructional Strategies	*r*	-.011	.111	.054	-.148
	p	.941	.438	.708	.300
Efficacy in Classroom Management	*r*	-.004	.048	-.089	-.046
	p	.978	.737	.534	.749

Note. Jayden represents a student with a mild academic and mild behavior concern. Jacob represents a student with a mild academic concern and a severe behavior concern. Michael represents a student with a severe academic concern and a mild behavior concern. Anthony represents a student with a severe academic concern and a severe behavior concern.

Only two of the 12 correlations that tested the relationships between teacher efficacy and behavioral concerns were statistically significant. There were moderate, negative correlations between the rating of the behavior concern and both the *Efficacy in Student Engagement* and *Efficacy in Classroom Management* for Michael, who had a severe academic concern and a mild behavior concern (See Table 4.5). This suggests that teachers who had lower scores on the

Efficacy in Student Engagement and *Efficacy in Classroom Management* subscales were more likely to see Michael's behavior concern as more severe than those teachers with higher scores on the *Efficacy in Student Engagement* and *Efficacy in Classroom Management* scales.

Table 4.5: Spearman's Correlation Coefficients for TSES Subscale Scores and Rating of the Behavior Concern

TSES Subscale		Jayden	Jacob	Michael	Anthony
Efficacy in Student Engagement	*r*	-.025	-.117	-.357*	.054
	p	.863	.414	.010	.704
Efficacy in Instructional Strategies	*r*	.137	.-209	-.108	-.008
	p	.339	.141	.449	.953
Efficacy in Classroom Management	*r*	-.052	-.121	-.406**	-.220
	p	.716	.398	.003	.121

Note. *indicates $p<.05$ and ** indicates $p<.01$. Jayden represents a student with a mild academic and mild behavior concern. Jacob represents a student with a mild academic concern and a severe behavior concern. Michael represents a student with a severe academic concern and a mild behavior concern. Anthony represents a student with a severe academic concern and a severe behavior concern.

Research Question 2

What is the relationship between the likelihood of referral for male, Black/African American students with differing levels of academic and behavior concerns and teachers' perceptions of RTI, teachers' racial/ethnic attitudes, and teachers' efficacy beliefs?

The dependent variable in this study aimed to measure the likelihood of referral on a seven-point, ordinal scale. Therefore, an ordinal logistic regression was the most appropriate statistical test to examine Research Question 2. The Polytomous Universal Model (PLUM) along with the

General Linear Model (GENLIN) within SPSS were used to complete the ordinal logistic regression.

Statistical Assumptions for Ordinal Logistic Regression

Before completing the inferential statistics for Research Question 2, assumptions for an ordinal logistic regression were tested. Ordinal logistic regression requires that the dependent variable be at the ordinal level, there is one or more continuous, ordinal, or categorical independent variables, there is no multicollinearity, and that there are proportional odds.

The dependent and independent variables in this study met the assumptions. Multicollinearity was tested by calculating and reviewing the Tolerance and variance inflation factor (VIF) values. Following the recommendations of Pituch and Steven (2016), multicollinearity of the predictor variables was checked to ascertain whether the variance inflation factor (VIF) values were below 10 and tolerance scores were above 0.2 (See Table 4.6). All of the predictors for all four models met these criteria, indicating that there was no multicollinearity.

Table 4.6: Collinearity Statistics

	Tolerance	VIF
RTI Total Score	.748	1.337
Unawareness of Racial Privilege	.494	2.023
Unawareness of Institutional Discrimination	.704	1.420
Unawareness of Blatant Racial Issues	.428	2.337
Efficacy in Student Engagement	.323	3.098
Efficacy in Instructional Strategies	.789	1.267
Efficacy in Classroom Management	.347	2.878

The proportional odds assumption was tested by completing a test of parallel lines, which compared the proportional odds model to the cumulative odds model. As evidenced by the results of the full likelihood ratio test, the assumption of proportional odds was met for the dependent variables of the likelihood of referral for Jayden, Jacob, and Anthony. None of the Chi square values for these three conditions were statically significant, indicating that the predictors had the same effect on the likelihood of referral regardless of the cut-point for the dependent variable. (i.e., the predictors had the same effect when comparing ratings above two to those below two as when comparing ratings above three to those below three).

However, there was a statistically significant difference between the proportional odds model and the cumulative odds model for the likelihood of referral for Michael (p <.001) (See Table 4.7). Although O'Connell (2006) suggests that the test of proportion odds tends to be too

liberal (i.e., reports violations of this assumption when none may actually exist), the inferential test results from Michael's vignette should still be interpreted with caution.

Table 4.7: Test of Parallel Lines for the Dependent Variables

Vignette	-2 Log Likelihood	LLR χ^2	*p*
Jayden	163.340	8.514	1.000
Jacob	129.863	42.730	.173
Michael	105.348	76.449	<.001
Anthony	81.206	26.107	.202

Note. The LLR χ^2 is the log likelihood ratio that compares the full model to the null model.

Also, in order to determine whether there were any unusual and influential data points, Cook's distance was calculated. Cook's Distance values for the models, which were all <1.0, indicated that single cases were not excessively influencing the models. Thus, individual cases were unlikely to be biasing the models.

Covariate Patterns and Model Fit. An assessment of cell size was conducted by reviewing the number of cells with zero frequencies. Given that the independent variables were all interval variables, it was likely that cell sizes would be inadequate. Although there was no missing data within the model, there were a high number of cells with zero frequencies, indicating that there were many missing covariate patterns. There were 51 covariate patterns and 51 cell patterns for the models that were tested. These two values were the same because each covariate pattern had only one case. The large number of cells with zero frequency and the small frequency reduces the accuracy of the overall goodness-of-fit measures (Norusis, 2012). Therefore, the deviance goodness-of-fit was not reported.

Ordinal Logistic Regression Results

The ordinal logistic regression procedure was run for each dependent variable. The likelihood of referral (for each vignette) was entered as the dependent variable, and the subscale scores of the Teacher Sense of Efficacy Scale (TSES), subscale scores of the Color-Blind Racial Attitudes Scale (CoBRAS), and the RTI Total score were entered as covariates. In order to have the PLUM and GENLIN results match, the Fisher method was used for the parameter estimation when running GENLIN.

Overall Model Fit. A number of statistical tests were completed in order to determine the general fit of the proposed ordinal regression model. The Nagelkerke Pseudo R-Square values for each dependent variable suggested that the model accounted for 7.0% to 13.4% of the variance. These are pseudo R^2 values though, so the interpretation of the results is less certain than that of R^2 values (Smith & McKenna (2013). The final model did not significantly predict the dependent variable for any of the four vignettes, indicating that teachers' perceptions of RTI, racial/ethnic attitudes, and sense of efficacy did not have a statistically significant impact on their rating of the likelihood of referral. These results are presented in Table 4.8.

Table 4.8: Nagelkerke Pseudo R-Square Values

Dependent Variable	-2 Log Likelihood (Final)	$\chi 2$	df	*p*
Likelihood of Referral for Jayden	171.855	7.080	7	.421
Likelihood of Referral for Jacob	172.593	3.569	7	.828
Likelihood of Referral for Michael	181.797	4.924	7	.669
Likelihood of Referral for Anthony	107.313	5.420	7	.609

Note. Jayden represents a student with a mild academic and mild behavior concern. Jacob represents a student with a mild academic concern and a severe behavior concern. Michael represents a student with a severe academic concern and a mild behavior concern. Anthony represents a student with a severe academic concern and a severe behavior concern.

Results for Dependent Variable 1

How likely would you be to refer this student (Jayden) for a special education evaluation?

Parameter Estimates

The first dependent variable was the likelihood of special education referral for the vignette describing Jayden. This vignette described a student with a mild academic concern and a mild behavior concern. No statistically significant differences were found between the ratings of the likelihood of referral and any of the predictor variables. (See Table 4.9).

Table 4.9: Parameter Estimates for the Likelihood of Special Education Referral for Jayden (Mild Academic Concern, Mild Behavior Concern)

Parameter	Hypothesis Test			Effect Size		
	Wald Chi-Square	*df*	*p*	*OR*	95% Confidence Interval	
Efficacy in Student Engagement	.492	1	.483	1.077	.875	1.325
Efficacy in Instructional Strategies	2.154	1	.142	1.122	.962	1.308
Efficacy in Classroom Management	2.430	1	.119	.858	.708	1.040
Unawareness of Racial Privilege	.440	1	.507	.970	.887	1.061
Unawareness of Institutional Discrimination	3.304	1	.069	1.100	.993	1.219
Unawareness of Blatant Racial Issues	.072	1	.788	1.021	.877	1.188
Perceptions of RTI Total	.176	1	.675	.991	.947	1.036

Prediction and Model Fit

A classification table was generated in order to compare the observed and predicted categories of the dependent variable (see Table 4.10). This information helps to determine how well the ordinal regression model was able to predict the categories within the dependent variable. The model correctly predicted 58.3% of the cases in category 1 (not at all likely to

refer) and 41.7% of the case in category 2. The model did not predict any scores to be within category 3. Those scores that were a 3 were predicted to be a 1 or a 2. The model correctly predicted 28.6% of the category 5 responses. Overall the model correctly predicted 14 of the 51 responses, approximately 27%, for the likelihood of referral for Jayden.

Table 4.10: Comparison of the Observed and Predicted Categories of The Dependent Variable (Jayden - Mild Academic Concern, Mild Behavior Concern)

		Predicted Response Category Count (Percentage)			
		1	2	4	5
How likely would you be to refer this student (Jayden) for a special education evaluation?	1 (not at all likely to refer)	7 (58.3%)	2 (16.7%)	0 (0.0%)	3 (25.0%)
	2	5 (41.7%)	5 (41.7%)	2 (16.7%)	0 (0.0%)
	3	3 (33.3%)	5 (55.6%)	1 (11.1%)	0 (0.0%)
	4	2 (25.0%)	5 (62.5%)	0 (0.0%)	1 (12.5%)
	5	0 (0.0%)	3 (42.9%)	2 (28.6%)	2 (28.6%)
	6	0 (0.0%)	1 (50.0%)	1 (50.0%)	0 (0.0%)
	7 (Extremely likely to refer)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)

Dependent Variable 2

How likely would you be to refer this student (Jacob) for a special education evaluation?

Parameter Estimates

The second dependent variable was the likelihood of special education referral for the vignette describing Jacob. This vignette described a student with a mild academic concern and a

severe behavior concern. No statistically significant differences were found between the ratings of the likelihood of referral and any of the predictor variables (See Table 4.11).

Table 4.11: Parameter Estimates for the Likelihood of Special Education Referral for Jacob (Mild Academic Concern, Severe Behavior Concern)

Parameter	Hypothesis Test			Effect Size		
	Wald Chi-Square	*df*	*p*	*OR*	95% Confidence Interval	
Efficacy in Student Engagement	1.598	1	.206	.701	1.080	.870
Efficacy in Instructional Strategies	.586	1	.444	.911	1.237	1.062
Efficacy in Classroom Management	.356	1	.551	.876	1.283	1.060
Unawareness of Racial Privilege	.007	1	.935	.918	1.097	.935
Unawareness of Institutional Discrimination	1.140	1	.286	.955	1.171	1.057
Unawareness of Blatant Racial Issues	.820	1	.365	.799	1.086	.932
Perceptions of RTI Total	.896	1	.344	.935	1.024	.979

Prediction and Model Fit

The classification table (See Table 4.12) indicated that the model correctly predicted 0% of the cases in category 2 and 100% of the cases for category 7 (extremely likely to refer). It did

not predict any scores to be within category 1, 3, 4, 5, or 6. Overall the model correctly predicted 18 of the 51 responses, approximately 35%, for the likelihood of referral for Jacob.

Table 4.12: Comparison of the Observed and Predicted Categories of The Dependent Variable (Jacob - Mild Academic Concern, Severe Behavior Concern)

		Predicted Response Category Count (Percentage)	
		2	7
How likely would you be to refer this student (Jacob) for a special education evaluation?	1 (not at all likely to refer)	0 (0.00%)	2 (100.0%)
	2	0 (0.00%)	6 (100.0%)
	3	0 (0.00%)	2 (100.0%)
	4	1 (14.3%)	6 (85.7%)
	5	1 (12.5%)	7 (87.7%)
	6	0 (0.00%)	8 (100.0%)
	7 (Extremely likely to refer)	0 (0.00%)	18 (100.0%)

Dependent Variable 3

How likely would you be to refer this student (Michael) for a special education evaluation?

Parameter Estimates

The third dependent variable was the likelihood of special education referral for the vignette describing Michael. This vignette described a student with a severe academic concern and a mild behavior concern. No statistically significant differences were found between the ratings of the likelihood of referral and any of the predictor variables (See Table 4.13).

Table 4.13: Parameter Estimates for the Likelihood of Special Education Referral for Michael (Severe Academic Concern, Mild Behavior Concern)

Parameter	Hypothesis Test			Effect Size		
	Wald Chi-Square	*df*	*p*	*OR*	95% Confidence Interval	
Efficacy in Student Engagement	.460	1	.498	.931	.756	1.145
Efficacy in Instructional Strategies	1.125	1	.289	1.085	.933	1.260
Efficacy in Classroom Management	.144	1	.704	.964	.799	1.163
Unawareness of Racial Privilege	.477	1	.490	.969	.888	1.059
Unawareness of Institutional Discrimination	.208	1	.648	.977	.884	1.079
Unawareness of Blatant Racial Issues	1.637	1	.201	1.105	.948	1.289
Perceptions of RTI Total	.282	1	.596	.988	.945	1.033

Prediction and Model Fit

The classification table (See Table 4.14), indicated that the model correctly predicted 0% the cases in category 2, 64.3% of the cases in category 6, and 22% of the cases for category 7 (extremely likely to refer). The model did not predict any scores to be within category 1, 3, 4, or 5. Overall the model correctly predicted 11 of the 51 responses, approximately 22%, for the likelihood of referral for Michael.

Table 4.14: Comparison of the Observed and Predicted Categories of The Dependent Variable (Michael - Severe Academic Concern, Mild Behavior Concern)

		Predicted Response Category Count (Percentage)		
		2	6	7
How likely would you be to refer this student (Michael) for a special education evaluation?	1 (not at all likely to refer)	0 (0.0%)	2 (100.0%)	0 (0.0%)
	2	0 (0.0%)	7 (100%)	0 (0.0%)
	3	0 (0.0%)	5 (100%)	0 (0.0%)
	4	1 (16.7%)	5 (83.3%)	0 (0.0%)
	5	1 (12.5%)	7 (87.5%)	0 (0.0%)
	6	4 (28.6%)	9 (64.3%)	1 (7.1%)
	7 (Extremely likely to refer)	0 (0.0%)	7 (77.8%)	2 (22.2%)

Dependent Variable 4

How likely would you be to refer this student (Anthony) for a special education evaluation?

Parameter Estimates

The fourth dependent variable was the likelihood of special education referral for the vignette describing Anthony. This vignette described a student with a severe academic concern and a severe behavior concern. No statistically significant differences were found between the ratings of the likelihood of referral and any of the predictor variables (See Table 4.15).

Table 4.15: Parameter Estimates for the Likelihood of Special Education Referral for Anthony (Severe Academic Concern, Severe Behavior Concern)

Parameter	Hypothesis Test			Effect Size		
	Wald Chi-Square	*df*	*p*	*OR*	95% Confidence Interval	
Efficacy in Student Engagement	1.445	1	.229	1.159	.911	1.473
Efficacy in Instructional Strategies	1.271	1	.260	1.105	.929	1.316
Efficacy in Classroom Management	2.392	1	.122	.835	.664	1.049
Unawareness of Racial Privilege	1.678	1	.195	.934	.843	1.035
Unawareness of Institutional Discrimination	1.102	1	.294	1.067	.945	1.205
Unawareness of Blatant Racial Issues	.775	1	.379	1.082	.908	1.289

Perceptions of RTI Total	.615	1	.433	.930	.930	1.032

Prediction and Model Fit

A classification table indicated that the model correctly predicted 0% of the cases in category 6, and 100% of the cases in category 7 (extremely likely to refer). The model did not predict any scores to be within category 1, 2, 3, 4, or 5. Overall the model correctly predicted 32 of the 51 responses, approximately 63%, for the likelihood of referral for Anthony (See Table 4.16).

Table 4.16: Comparison of the Observed and Predicted Categories of The Dependent Variable (Anthony - Severe Academic Concern, Severe Behavior Concern)

		Predicted Response Category Count (Percentage)	
		6	7
How likely would you be to refer this student (Anthony) for a special education evaluation?	1 (not at all likely to refer)	0 (0.00%)	2 (100.0%)
	4	1 (25.0%)	3 (75.0%)
	5	0 (0.00%)	3 (100.0%)
	6	0 (0.00%)	10 (100.0%)
	7 (Extremely likely to refer)	0 (0.00%)	32 (100.0%)

Chapter Summary

There were no statistically significant relationships between teachers' perceptions of academic concerns and their perceptions of RTI, attitudes towards race, or their teaching efficacy. No statistically significant relationships were found between the teachers' perceptions of the behavior concerns and their perception of RTI. A statistically significant relationship was found between the *Unawareness of Institutional Discrimination* subscale score and the behavior concern for Jayden. This suggests that when presented with a student with mild behavioral and academic concerns, teachers who lacked awareness of institutional discrimination viewed the student as having a more severe behavior problem. Moderate, negative correlations were found between the rating of the behavior concern and the *Efficacy in Student Engagement* and *Efficacy in Classroom Management* subscales for the vignette describing Michael. This indicated that teachers who had lower scores on the *Efficacy in Student Engagement* and *Efficacy in Classroom Management* scales were more likely to rate Michael's behavior concern as more severe than those teachers with higher scores on the *Efficacy in Student Engagement* and *Efficacy in Classroom Management* scales.

The teachers' perceptions of RTI, racial/ethnic attitudes, and sense of efficacy did not have a statistically significant impact on their rating of the likelihood of referral for any of the vignettes. Additionally, no statistically significant differences were found between the ratings of the likelihood of referral and the parameter estimates for any of the dependent variables.

CHAPTER FIVE: DISCUSSION

Introduction

The purpose of this study was to explore the issue of racial/ethnic disproportionality in special education referrals. This chapter includes a discussion of the research findings, the limitations of the study, and recommendations for future research.

Summary of the Study

Relationships between teacher perceptions of RTI, racial/ethnic attitudes, and self-efficacy, and special education referral decisions were investigated in this study. The researcher wrote four vignettes describing the academic and behavior concerns of four fictitious, Black/African American, 3rd grade, male students. The vignettes described one student with a mild academic concern and a mild behavior concern, one student with a mild academic concern and a severe behavior concern, one student with a severe academic concern and mild behavior concern, and one student with a severe academic concern and a severe behavior concern.

A small pilot study with experts in the area of reading and/or behavior was conducted to validate the severity of the academic and behavior concern described in the vignettes. An anonymous online survey was completed by K-5 classroom teachers from three Florida public school districts. Teachers read each vignette and rated the severity of the academic concern, the severity of the behavior concern, and the likelihood that they would refer the student for a special education evaluation. Teachers also completed the revised RTI Survey, the Color-Blind Racial Attitudes Scale (CoBRAS), and the Teachers' Sense of Efficacy Scale (TSES). The study and data analyses that followed were driven by two research questions.

Discussion of Results for Research Question 1

Research Question 1

What is the relationship between elementary school teachers' perceptions of RTI, attitudes towards race, and efficacy and their perceptions of male Black/African American students with differing levels of academic and behavior concerns?

The vignettes included a description of Jayden who represented a student with a mild academic and mild behavior concern. Jacob represented a student with a mild academic concern and a severe behavior concern. Michael represented a student with a severe academic concern and a mild behavior concern, and Anthony represented a student with a severe academic concern and a severe behavior concern. A series of correlations were calculated to determine the relationship between the teachers' scores on the revised RTI Survey, the Color-Blind Racial Attitudes Scale (CoBRAS), and the Teacher Sense of Efficacy Scale (TSES) and their rating of the academic and behavior concern described in each vignette.

No relationships were found between teachers' perceptions of RTI, teachers' racial/ethnic attitudes, or teachers' efficacy and their rating of the severity of the academic concern. No relationships were found between teacher perceptions of RTI and their rating of the academic or the behavior concern described in the vignettes.

A relationship was found between teachers' unawareness of institutional discrimination and the behavior concern for Jayden (mild academic concern, mild behavior concern). This result suggests that, for this student, teachers who had less awareness of institutional discrimination viewed the student as having a more severe behavior problem. The behavior concerns described in Jayden's vignette included behaviors like playing with items in his desk,

taping his pencil or his fingers on his desk, and needing reminders to stay on task. While these behaviors may be annoying to others, they would not likely warrant intervention beyond Tier 1 classroom management. It is also important to note that teacher ratings of the severity of the behavior concern described in the vignette about Jayden (mild academic concern, mild behavior concern) were significantly higher than the expert ratings of the severity of the behavior concern. In the context of implicit social cognition (Greenwald & Banaji, 1995), teachers with lower awareness of institutional discrimination may have rated Jayden's behavior concern as more significant if implicit aspects of social cognition resulted in unconscious judgments affecting their judgment of the severity of the academic and behavior concern. A low score in the area of racial/ethnic attitudes may mean lower awareness of the implicit effect unconscious racial/ethnic stereotypes can have on one's decisions, and that may possibly suggest higher levels of implicit bias in judgments about factors impacted by those stereotypes, such as severity of behavior problems, and the likelihood of those behavior problems being successfully remediated by Tier 1 behavior management.

Differences between explicit and implicit bias may explain why a relationship between the other CoBRAS subscales (*Unawareness of Blatant Racial Issues* and *Unawareness of Racial Privilege)* and the rating of the severity of the academic and behavior concern was not found. Cameron, Brown-Iannuzzi and Payne (2012), as cited by Warikoo, Sinclair, Fei, and Jacoby-Senghor (2016), found that there is not a strong correlation between explicit and implicit bias. This suggests that a person can still have implicit biases even though he/she does not express explicit biases. That would mean that there might be more (implicit) bias than the CoBRAS

scores indicate. Specifically, this explains why an explicit bias measure like the *Unawareness of Blatant Racial Issues* subscale may not fully capture racial/ethnic bias.

Teachers who had lower efficacy in the area of student engagement and classroom management were more likely to rate Michael's mild behavior concern as more severe. Michael's behaviors included leaving his assigned area to talk to friends. Although potentially disruptive to learning, the behavior would not likely require intervention beyond Tier 1 classroom management, especially given that the vignette also indicates that Michael (severe academic concern, mild behavior concern) is compliant when asked to return to his area. However, the teacher ratings of the behavior concern for the vignette describing Michael were significantly higher than the expert ratings.

Bandura's (1993) efficacy theory is consistent with this finding. Teachers with lower student engagement efficacy scores may have a lower estimation of their ability to engage a student like Michael (severe academic concern, mild behavior concern), who has a severe reading concern and likes to socialize, in educational tasks. This may be why they rated the behavior concern as being more severe than did teachers with higher student engagement efficacy. Moreover, teachers with lower classroom management efficacy may believe that they do not have the skills to effectively address Michael's behaviors. Considering that Michael's vignette also described a severe reading concern, teachers with lower student engagement efficacy and classroom management efficacy may see Michael's behavior concerns as more significant, given the perception of the need for increased focus and effort (on the part of the teacher and the student) that would likely be required in order to remediate Michael's reading deficit.

It is of interest that relationships were found between the rating of the behavior concern for Michael (severe academic concern, mild behavior concern) and student engagement efficacy and classroom management efficacy, but no relationship was found between the rating of the behavior concern for Michael and instructional strategies efficacy. This may be because initial teacher training and further professional development tend to be focused on instructional strategies rather than behavioral strategies. Researchers like Tschannen-Moran and Hoy (2001) noted that teachers' sense of efficacy may vary based on the situation and the subject matter. This may be exacerbated by the fact that teachers receive more training in instructional strategies than they do in classroom management (Begeny & Martens, 2006). It is possible that significant correlations were found in the area of student engagement and classroom management, but not instructional strategies, because teachers have more training in instructional strategies and higher self-efficacy in the area of instructional strategies than they do in the areas of student engagement and classroom management.

Furthermore, there is an issue of the use of teacher self-reports of efficacy and actual classroom practice. A disadvantage of self-report measures is that they are not as objective as information gathered through classroom observation (Muijs, 2006). It is conceivable that other significant correlations were not found between the ratings of the academic and behavior concern described in the vignettes and the subscale scores on the TSES because of the subjective nature of the self-report measure. Poulou, Reddy, and Dudek (2019) found that teachers reported higher self-efficacy ratings in the area of *Efficacy in Classroom Management* (also measured by the TSES) than was noted through observation measures. The researchers stated that, although

teachers reported high levels of efficacy with regard to classroom management strategies, the teachers did not seem to actually employ such classroom management strategies.

It is also important to acknowledge that reading a vignette about a child is obviously not the same as working with the child on a daily basis. Zee, de Jong, and Koomen (2016) found that the externalized behaviors of students negatively impacted the self-efficacy of teachers. They also found, as did Sutherland and Oswald (2005), that the externalizing behaviors of students negatively impacted teacher efficacy in the area of delivery of instruction.

Perhaps abstract descriptions of the child as Black/African American are not as likely to activate any implicit biases that might be present, as would personal interaction with such a child. So, if there is a relationship between perceived efficacy and the success of students that is moderated by racial/ethnic attitudes (i.e., teachers are less likely to think that their student engagement strategies, instructional strategies, and classroom management skills will be successful with Black/African American students with externalizing behaviors), the effect of this implicit bias might not be elicited by an abstract description.

While there were no significant differences between the teacher and expert ratings of the academic concerns presented in the vignettes, analysis showed that the teacher ratings of the severity of the behavior concerns were significantly higher for all of the vignettes, except Anthony, who represented a severe academic concern and a severe behavior concern. This may be an indication that teachers need support to address behavior concerns in the classroom. Borg and Riding (1991) noted that student behavioral issues are a common cause of teacher stress. Since students spend significantly more time with teachers than they do other professional in the expert group rating the behavioral concern (e.g., school psychologists, licensed mental health

counselors), teachers may rate the behavior concerns as being more severe because their consideration of the behavior concern is from the perspective of having to deal with the behavior problem for the vast majority of the school day. Furthermore, professionals in the expert group who rated the severity of the behavior concern likely have considerably more training and experience dealing with behavior concerns than do classroom teachers.

Discussion of Results for Research Question 2

Research Question 2

What is the relationship between the likelihood of referral for male Black/African American students with differing levels of academic and behavior concerns, and teachers' perceptions of RTI, teachers' racial/ethnic attitudes, and teachers' efficacy beliefs?

The results suggested that teachers' perceptions of RTI, racial/ethnic attitudes, and self-efficacy did not have an impact on their rating of the likelihood of referral for any of the vignettes.

Discussion of Results for Dependent Variable 1

How likely would you be to refer this student (Jayden) for a special education evaluation?

Teachers' perceptions of RTI, racial/ethnic attitudes, and sense of efficacy did not impact the teachers' rating of the likelihood of referral for Jayden. The classification table indicated that the model correctly predicted approximately 27% of the teachers' ratings for the likelihood of referral for Jayden. Overall the model predicted that teachers' ratings would be lower. Although the overall model was not able to predict the likelihood of referral to a statistically significant degree, the prediction was more consistent with the intended low likelihood of referral given the mild academic and mild behavior concern in the vignette describing Jayden.

Discussion of Results for Dependent Variable 2

How likely would you be to refer this student (Jacob) for a special education evaluation?

Based on the parameter estimates, the teachers' perceptions of RTI, racial/ethnic attitudes, and sense of efficacy did not have a significant effect on the teachers' rating of the likelihood of referral for Jacob, who had a mild academic concern and a significant behavioral concern.

The model correctly predicted approximately 35% of the teachers' responses for the likelihood of referral for Jacob. The classification table indicated an overall higher rating for the likelihood of referral than was observed in the data set. This is more consistent with the intended likelihood of referral, given that the vignette for Jacob included a significant behavior concern including behaviors such as kicking the furniture, knocking over chairs, cursing, screaming, throwing objects, and making verbal threats to students, teachers, and staff.

A significant difference was found between the teacher and expert rating of the academic concern for Jacob. Although Jacob's academic concern was intended to be mild, experts rated Jacob's academic concern as being significantly more severe than did the teachers. Given that teachers had a lower rating of the intended mild academic concern than the experts, this may explain why the teacher rated the likelihood of referral as lower than the model predicted.

Discussion of Results for Dependent Variable 3

How likely would you be to refer this student (Michael) for a special education evaluation?

Based on the parameter estimates, the teachers' perceptions of RTI, racial/ethnic attitudes, and sense of efficacy did not have a statistically significant effect on the teachers'

rating of the likelihood of special education referral for Michael, who has a severe academic concern and a mild behavior concern.

The classification table indicated that the model correctly predicted approximately 22% of the responses for the likelihood of referral for Michael (severe academic concern, mild behavior concern). The vignette described a severe reading problem including difficulty decoding and blending sounds, struggling with sight words, and difficulty with reading comprehension. Overall, the model predicted higher likelihood of referral ratings than were observed in the data. Overall, the model predicted higher likelihood of referral ratings than were observed in the data. Teacher and expert ratings of the academic concerns were very similar with medians. As previously mentioned in this chapter, the teachers' rating of the behavior concern described in this vignette were significantly higher than that of the experts. Since the teacher ratings matched the intended rating of the academic concern, and the teacher ratings of the behavior concern were somewhat higher than intended, it was surprising that the likelihood of referral was not higher for Michael. This lower likelihood of referral may be because teachers felt confident, as evidenced by the lack of a relationship between the rating of the academic and behavior concern and the instructional strategies efficacy, that they could address the academic concerns within the general education classroom.

Discussion of Results for Dependent Variable 4

How likely would you be to refer this student (Anthony) for a special education evaluation?

Based on the parameter estimates, teachers' perceptions of RTI, racial/ethnic attitudes, and sense of efficacy did not have a significant effect on the teachers' rating of the likelihood of referral for Anthony, whose vignette described both a severe academic concern and a severe

behavior concern. The classification table indicated that the model correctly predicted approximately 63% of the responses regarding the likelihood of referral for Anthony. The reading issues included difficulty with short vowel sounds, difficulty reading sight words, and difficulty with basic comprehension questions even when the passage is read aloud. The behavior concerns included pushing, kicking, spitting, property damage, and stealing. The model only predicted scores of 6 or 7 (extremely likely to refer) for this vignette. Given the severity of the concerns, it was unexpected that 3.9% of the responses were 1 (not at all likely to refer) 7.8% of the responses were 4, which was the next lowest rating for this vignette.

Limitations

Sample

The limitations of this study are largely related to the participant sample and study methodology. The sample size (n=51) may not have been sufficient to truly capture the relationship between the perceptions of RTI, racial/ethnic attitudes, and efficacy and the likelihood of special education referral. The sample was largely White females, therefore it may be difficult to generalize these results to male teachers. A sample including more males and more minority teachers may have provided additional information and found different results. Additionally, a study with a large enough sample size, may make it possible to reduce self-selection bias through the use of statistical procedures that estimate that data that would have been provided by non-responders (Heckman, 1979). Dalla Valle (2016) noted that those who respond to a survey are different than those who choose not to respond to the survey, and those who do choose to respond usually have some common characteristics. It is possible that some teachers who self-selected to complete a survey regarding the racial/ethnic disparity of minority

students in special education are more aware of issues surrounding racial/ethnic privilege and do not hold blatantly racist views.

One school district declined to participate in the research study. Some principals did not respond to the research request, some school principals who responded declined to have their school participate, and the teacher response rate was low even within participating schools. This lack of participation may be an indication of the many demands on the time of educators. Given that this study included what is, for many, the sensitive topic of race, some may have decided not to participate for this reason. DiAngelo (2011) noted that, what she refers to as *White Fragility*, can cause people to have an emotional reaction (e.g., anger, guilt) to racial/ethnic related stress that may lead them to avoid such situations.

The teacher survey included an open response question that asked "Is there anything you would like to share with the researcher?" There were 12 responses, five of which were *No* or something similar to that. Of the other seven responses, six of the responses were about race and one response was about special education. Three responses were from teachers indicating that they had Black/African American or biracial children. One response expressed a need for additional training to meet the needs of the diverse student population. One teacher responded, "Attitude much bigger indicator of success than skin color!!" Another stated, "I believe socio-economic status and family support… has much more to do with success, not race." Given that the survey did not include information about the teachers' children or educational success factors, it seems possible that this sort of response may be the result of other emotions related to race beyond those triggered by the vignettes or the CoBRAS.

Research Instruments

This study included vignettes written by the researcher. Although a pilot study was conducted to help establish the validity of the vignettes, the vignettes included only a small bit of the information a teacher actually has when making a decision to refer a student for a special education evaluation. The vignettes did not include information about the child's appearance (aside for indicating that the child was Black/African American), social developmental history, specific performance on benchmark assessments, or information about response to any previously implemented intervention. It may be that a brief mention of *Black/African American* does not activate implicit biases, or makes them easier to keep in check, as much as the personal experience in seeing the child's behavior (e.g. in a video vignette). This is further supported by research indicating bias related to speech patterns (Seymour, Abdulkarim, & Johnson, 1999) and walking style (Neal, McCray, Webb-Johnson & Bridgest, 2003). Also, the vignettes used in the pilot study were the same as those used with the teacher participants, which means that the vignettes included information about race. It is possible that bias among the content area experts might also have played a role.

Although the statistical analysis indicated strong internal consistency, the revised RTI Survey has not been validated. The Color-Blind Racial Attitudes Scale (CoBRAS) is a measure of explicit bias. The use of a measure of implicit bias in addition to the CoBRAS may have provided a more complete picture of both explicit and implicit racial/ethnic attitudes. Issues regarding the inaccuracy of the self-report measures like those used in this study may have also impacted the results.

Implications for Practice and Recommendations for Future Research

The disproportionate representation of Black/African American students in special education is a multifaceted problem and one that is unlikely to be solved by a single solution that fails to appreciate all aspects of the problem. The findings of this research study may help those in education shine a light on the problem the racial/ethnic disproportionality in special education. Most importantly, the educational system and those who work in it need to be committed to addressing the intricacies surrounding the issue of disproportionate representation of Black/African American students in special education. The recommendations for practice and future research are presented for each area of this research study.

Response to Intervention (RTI)

There is little research in the area of teacher perceptions of RTI (Castro-Villarreal, Rodriguez and Moore, 2014). However, it is conceivable that teachers with positive perceptions of RTI may be less likely to refer a student for special education unnecessarily. Such teachers may be more likely to try more than one intervention and may also monitor data longer than those teachers who have negative perceptions of RTI. Additionally, teachers may have positive perceptions of RTI, but negative experiences with RTI within their schools. For example, a teacher may strongly believe in the RTI process, but work in a school with a poor system for tiering students and implementing interventions. These lived experiences may impact their special education referral decisions more than their perceptions of RTI itself. RTI can differ greatly from school to school and even from grade level to grade level within the same school. These differences in factors like the amount of staff, the training of the staff, the school RTI schedule, and number of students in need of RTI may impact how teachers view RTI.

Given the consistent, ongoing issues with racial/ethnic disparity in special education, RTI alone does not seem to be a sufficient remedy. It seems that implementation issues may make it the case that it does not function as it should to reduce special education referrals. It is hard to be certain about this though because minority groups are not usually included in the RTI research (Klingner & Edwards, 2006). One issue regarding implementation is that interventions are sometimes done by paraprofessionals with varying degrees of training. There is now a new mandate (Florida House Bill 7069) that requires that all people delivering Tier 3 reading interventions will need to be reading endorsed. Such a training mandate may help to improve the quality and fidelity of intervention implementation delivered by teachers and paraprofessionals, which will in turn reduce the number of special education referrals.

RTI was intended to reduce the necessity for special education referrals by providing academic and behavioral interventions to students in need of such support. In order to better understand the relationship between teacher perceptions of RTI and special education referral decisions, researchers need to include classroom teachers in research about the implementation of RTI at the classroom and school level. Research regarding how race impacts the tiering decisions within RTI could help provide suggestions for specific procedures to help ensure that tiering decisions are data based, but also take into consideration factors –other than a learning disability –that may make it appear that a child is not making adequate progress (e.g., incorrect intervention, lack of fidelity of the intervention).

Racial Bias

Results of this study indicated that some aspects of racial/ethnic attitudes impacted the rating of a mild behavior problem described in one vignette. That is, teachers with lower

awareness of institutional racism rated the behavioral concern as being more severe than teachers with higher awareness of institutional racism. Teachers need to be aware of the potential impact of implicit racial/ethnic bias. This requires the acknowledgement that all people hold such biases, they may affect the decisions people make, and that attentiveness to the conceivable impact of such bias can help to minimize its affect. Measures like blind review of data used in other fields (e.g., anonymous grading) may help minimize bias, but it is not possible given the student teacher relationship in elementary school. Therefore, future research in this area can help to develop training for teachers, RTI teams, and those involved in special education referrals to help minimize the negative impact of implicit bias on special education referral decisions. Such research may also help to develop detailed protocols to check for explicit and implicit bias within the special education referral (including RTI) process to make consistent, culturally sensitive, data-based decisions.

Efficacy

Results from this study suggested that lower levels of efficacy in the areas of student engagement and classroom management resulted in rating a mild behavior concern as more severe for one of the vignettes. Districts and schools should consider professional development in the areas of student engagement and classroom management, especially professional development that includes student engagement and classroom management within the context of race and cultural differences. This professional development may strengthen Tier 1 behavior management, thus reducing the need for Tier 2 and Tier 3 interventions, which would also reduce special education referrals in the area of behavior.

A teacher's sense of efficacy in areas like student engagement, instructional strategies, and classroom management may be increasingly difficult for teachers teaching a diverse group of students. Future research needs to address teaching efficacy as it relates to teaching minority students. Such research may be used to develop training programs and professional development to support teachers in meeting the needs of all of their students.

Conclusion

The goal of this study was to explore the problem of racial/ethnic disproportionality in special education and add to the research literature by examining the relationship between teacher perceptions of RTI, racial/ethnic attitudes, and sense of efficacy and their rating of academic concerns, behavior concerns, and likelihood of referral for 3rd grade Black/African American male students. The information presented in this study may further meaningful conversations about the educational impact of race that leads to further action to address racial/ethnic disproportionality in special education.

APPENDIX A

MODIFIED RTI SURVEY

Modified RTI Survey

Please answer the following questions regarding MTSS/RTI.

Measurement Scale: Strongly agree, Somewhat agree, Neither agree nor disagree , Somewhat disagree, Strongly disagree

1. The RTI training provided by my school or district was sufficient.
2. I am confused about the RTI model in my school.
3. The paperwork associated with RTI is unmanageable.
4. RTI is helpful for General Education students.
5. Overall, I have had sufficient training in progress monitoring.
6. I understand the purpose of RTI.
7. RTI monopolizes instructional time.
8. Consultants are not available to help me with progress monitoring.
9. Roles in RTI are clearly defined at my school.
10. RTI has led to positive academic changes for all students.
11. I understand the RTI tiered system.
12. I have enough time to implement RTI effectively.
13. My school provides me with enough resources to implement RTI effectively.
14. RTI is needed in the schools.
15. I feel confident in my ability to implement interventions in the classroom
16. Lack of time negatively influences intervention quality.
17. More staff is needed to implement RTI effectively.
18. RTI data are helpful when determining whether to refer a student for a special education evaluation.
19. I have enough time during the school day to collect progress monitoring data.
20. I feel supported by school administration with RTI implementation.
21. Increased organization would improve RTI in my school.
22. I feel supported by staff with RTI implementation.
23. Data collection and progress monitoring related to RTI are feasible in the classroom.

APPENDIX B

THE COLOR-BLIND RACIAL ATTITUDES SCALE (CoBRAS)

Measurement Scale: 1 Strongly Disagree to 6 Strongly Agree

1. Everyone who works hard, no matter what race they are, has an equal chance to become rich.
2. Race plays a major role in the type of social services (such as type of health care or day care) that people receive in the U.S.
3. It is important that people begin to think of themselves as American and not African American, Mexican American, or Italian American.
4. Due to racial discrimination, programs such as affirmative action are necessary to help create equality.
5. Racism is a major problem in the U.S.
6. Race is very important in deterring who is successful and who is not.
7. Racism may have been a problem in the past, but it is not an important problem today.
8. Racial and ethnic minorities do not have the same opportunities as White people in the U.S.
9. White people in the U.S. are discriminated against because of the color their skin.
10. Talking about racial issues causes unnecessary tension.
11. It is important for political leaders to talk about racism to help work through or solve society's problems.
12. White people in the U.S. have certain advantages because of the color of their skin.
13. Immigrants should try to fit into the culture and adopt the values of the U.S.
14. English should be the only official language of the U.S.
15. White people are more to blame for racial discrimination in the U.S. than racial and ethnic minorities.
16. Social policies, such as affirmative action, discriminate unfairly against White people.
17. It is important for public schools to teach about history and contributions or racial and ethnic minorities.
18. Racial and ethnic minorities in the U.S. have certain advantages because of the color of their skin.
19. Race problems in the U.S. are rare, isolated situations.
20. Race plays an important role in who gets sent to prison.

APPENDIX C

TEACHERS' SENSE OF EFFICACY SCALE (SHORT FORM)

Directions: Please respond to each of the questions by considering the combination of your ***current*** ability, resources, and opportunity to do each of the following in your present position.

Measurement scale: 1 - Nothing at all, 2, 3 - Very Little, 4, 5- Some Degree, 6, 7 – Quite a Bit, 8, 9- A Great Deal

1. How much can you do to control disruptive behavior in the classroom?
2. How much can you do to motivate students who show low interest in school work?
3. How much can you do to get students to believe they can do well in school work?
4. How much can you do to help your students value learning?
5. To what extent can you craft good questions for your students?
6. How much can you do to get children to follow classroom rules?
7. How much can you do to calm a student who is disruptive or noisy?
8. How well can you establish a classroom management system with each group of students?
9. How much can you use a variety of assessment strategies?
10. To what extent can you provide an alternative explanation or example when students are confused?
11. How much can you assist families in helping their children do well in school?
12. How well can you implement alternative teaching strategies in your classroom?

APPENDIX D

VIGNETTES

Jayden

Jayden is a Black/African American boy who is in 3rd grade this year. He loves going to the library to check out books, but he needs your help to choose an appropriate book that is on his level. He often wants to check out I Spy books, or books that he has already read. During instruction, Jayden often misses important information because he is playing with items in his desk. He taps his pencil or his fingers on his desk until you or another student ask him to stop. He will stop when asked but starts up again a few seconds later. Jayden is a fluent oral reader, although he reads with little expression. He's often in a rush when he reads aloud, so when he gets to a word he doesn't know, he just guesses and keeps on reading. During a test, he needs reminders to stay on task. He is usually able to correctly answer most comprehension multiple choice questions. Sometimes his work is unfinished. He often needs extra time to complete class assignments and tests.

Jacob

Almost every day, Jacob, a Black/African American male, 3rd grade student tells you he doesn't like to read. When presented with a reading assignment, especially independent work, Jacob will generally refuse to work. Several times a week, he tears up his reading worksheets. He often shouts or purposely sings inappropriate songs loudly in class, which prevents other students from completing their work. He often rushes through texts and doesn't seem motivated to learn. Jacob is a fluent oral reader. Although he needs a lot of encouragement to read, he can easily answer comprehension questions when the information can be found directly within the text. He has a little difficulty with comprehension questions that require him to make an inference. Occasionally, Jacob is very conversational, using advanced vocabulary. About three times a week, Jacob has an outburst, during which he kicks the furniture, knocks over chairs, curses loudly, and screams. When asked to go to a place to calm down, Jacob usually becomes even more upset and begins throwing nearby objects and making verbal threats to students, teachers, and staff.

Michael

Michael is a Black/African American student in 3rd grade. He loves to socialize, and he is well liked by his peers. At times, he leaves his assigned area so that he can talk to his friends. When you ask him to return to his seat, he sighs and then goes back to his desk. He knows all of his letter names and sounds. When reading, Michael decodes each letter and then attempts to blend the sounds. His vocabulary knowledge seems age appropriate and similar to others in his class. Michael struggles with sight words, although you often see him practicing with note cards while he waits in carline. A few times a day, you remind Michael to stay in his assigned spot in line, but then notice that he has moved to a different spot when you weren't looking. Michael will attempt to read the passage and tries to answer the multiple choice reading comprehension questions, but most are incorrect. He leaves written response questions blank.

Anthony

Anthony is a Black/African American male, who is in 3rd grade. He is often irritable and angry. He constantly interrupts others and blurts out unrelated comments while you are teaching. Anthony's reads very slowly and makes many errors. He struggles to answer simple questions about story elements like identifying the characters, setting, and sequence of events of stories read aloud to him. Anthony will sometimes put forth good effort when you work with him one-on-one. During such times, you have noted that Anthony has difficulty identifying sight words and that he doesn't know all of his short vowel sounds. When he works on reading tests or assignments, he gets frustrated very easily. When frustrated, Anthony will throw everything on to the floor and refuse to continue working. He is quick to lose his temper when he doesn't get his way, especially when he doesn't get to be first in line or when he loses a game. He has kicked and spit at students in class and has pushed students off of playground equipment. He often calls his peers hurtful names. He has purposely destroyed the art work and projects of others. It is difficult to find a place for Anthony to sit in the classroom because he has so much difficulty getting along with his peers and some children are afraid of him. This morning, you saw him take a small ornament off your desk. You were able to approach him just as he was about to slip it into his pocket. He told you it was his and that he brought it from home.

APPENDIX E

INSTITUTIONAL REVIEW BOARD APPLICATION AND APPROVAL

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Determination of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Kristine M Cash**

Date: **August 03, 2018**

Dear Researcher:

On 08/03/2018, the IRB reviewed the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Project Title:	THE ROLE OF TEACHER PERCEPTIONS TOWARDS RESPONSE TO INTERVENTION, RACIAL ATTITUDES, AND SELF-EFFICACY IN SPECIAL EDUCATION REFERRAL DECISIONS
Investigator:	Kristine M Cash
IRB Number:	SBE-18-14235
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

This letter is signed by:

Signature applied by Gillian Morien on 08/03/2018 10:00:24 AM EDT

Designated Reviewer

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Determination of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Kristine M Cash**

Date: **August 20, 2018**

Dear Researcher:

On , the IRB reviewed the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination, Category 2
Modification Type:	Additional school districts added to recruitment, revised survey, revised protocol and explanation of research.
Project Title:	THE ROLE OF TEACHER PERCEPTIONS TOWARDS RESPONSE TO INTERVENTION, RACIAL ATTITUDES, AND SELF-EFFICACY IN SPECIAL EDUCATION REFERRAL DECISIONS
Investigator:	Kristine M Cash
IRB Number:	SBE-18-14235
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

This letter is signed by:

Signature applied by Renea C Carver on 08/20/2018 06:47:22 PM EDT

Designated Reviewer

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