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An Examination of Disproportionality in One School District Using a Response to Intervention Model

Brittney M. Bixby
University of Denver

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Disproportionality in special education has been an ongoing discussion and cause for concern at the district, state, and federal levels for the past 45 years. Due to legislative changes and a shifting attitude in public education away from a "wait to fail" service delivery model, may states now require the use of Response to Intervention (RTI), or a multi-tiered system of support (MTSS) for students who do not meet grade level academic standards or behavioral expectations. This study examined the presence of disproportionality among race/ethnicity, gender, and ELL status for students who received targeted and intensive interventions across two consecutive school years. Descriptive statistics, tests of proportion, and regression analyses were conducted to measure disproportionality within RTI and examine predictors of student outcome at the end of each year. Results indicated that for both school years Other/Multi-racial students were under-represented and in the second year, White/Caucasian students were overrepresented. For both school years, males were significantly overrepresented, females were underrepresented, and English Language Learners were proportionately represented. Hispanic/Latino(a) students who received RTI interventions were about four times more likely to be placed into special education in the first school year than White/Caucasian students and about half as likely to continue RTI interventions for that same year. Gender was a significant predictor in the second school year, with females being about half as likely to be placed in special education than males. Results from this study emphasize the need for providing strong leadership, professional development, and resources to support best practices in RTI implementation for all schools. Implications for future research, limitations to the study, and reflections on current educational practices are also discussed.

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First Advisor
Gloria Miller, Ph.D.

Second Advisor
Cynthia Hazel

Third Advisor
Kathy Green

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USING A RESPONSE TO INTERVENTION MODEL

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Brittney M. Bixby

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Advisor: Gloria Miller, PhD

Abstract

Disproportionality in special education has been an ongoing discussion and cause for concern at the district, state, and federal levels for the past 45 years. Due to legislative changes and a shifting attitude in public education away from a "wait to fail" service delivery model, may states now require the use of Response to Intervention (RTI), or a multi-tiered system of support (MTSS) for students who do not meet grade level academic standards or behavioral expectations. This study examined the presence of disproportionality among race/ethnicity, gender, and ELL status for students who received targeted and intensive interventions across two consecutive school years. Descriptive statistics, tests of proportion, and regression analyses were conducted to measure disproportionality within RTI and examine predictors of student outcome at the end of each year. Results indicated that for both school years Other/Multi-racial students were under-represented and in the second year, White/Caucasian students were overrepresented. For both school years, males were significantly overrepresented, females were underrepresented, and English Language Learners were proportionately represented. Hispanic/Latino(a) students who received RTI interventions were about four times more likely to be placed into special education in the first school year than White/Caucasian students and about half as likely to continue RTI interventions for that same year. Gender was a significant predictor in the second school year, with females being about half as likely to be placed in special education than males. Results from this

study emphasize the need for providing strong leadership, professional development, and resources to support best practices in RTI implementation for all schools. Implications for future research, limitations to the study, and reflections on current educational practices are also discussed.

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Chapter One: Introduction

Disproportionality in special education has been an ongoing discussion and cause for concern at the district, state, and federal levels for the past 45 years, beginning with Dunn's (1968) seminal article on the topic that illuminated the vastly disproportionate numbers of minority and low income children placed in special education. Disproportionality refers to the under or over representation of a group of children receiving specialized services than would be expected for the given population (Hosp, n.d.; National Education Association, 2007). Dunn's article, as well as numerous other research studies on this topic that have followed, have shed light on larger cultural issues of the American past and have caused educators to think critically about how the public school system delivers services to children in both general and special education.

Traditionally, research has focused on the issue of disproportionality in regards to race and ethnicity. These studies have consistently demonstrated that African American students are more likely to be overrepresented in the disability categories of mental retardation and emotional disturbance than other racial groups, American Indians are overrepresented in the learning disability category, and Asian/Pacific Islanders are more likely to be underrepresented in every disability category (Fergus, 2010; Hosp & Reschly, 2003; Hosp & Reschly, 2004, National Education Association, 2007). Additionally, the issue of gender disproportionality has been widely explored, with boys being two times more likely to be placed in special education than girls (Coutinho & Oswald, 2005;

Wehmeyer & Schwartz, 2001). More recently, the study of disproportionality with English Language Learners (ELLs) has become increasingly relevant with the changing national demographics and increase of culturally and linguistically diverse students (Maxwell, 2012; National Education Association, 2007; Zehler et al., 2003). Research on this population has shown mixed results, with both under and over representation for this group within special education nationally (Artiles, Rueda, Salazar, & Higareda, 2002; Linn & Hemmer, 2011; Zehler et al., 2003).

When students who are English language learners are staffed into special education, the largest disability categories that they are placed in are specific learning disability, speech/language impairment, and mental retardation (National Education Association, 2007). Disproportionate representation of various groups in special education has been critiqued for a number of reasons, including, but not limited to, the deleterious effects of labeling, segregation of placement, and the presumed ineffectiveness of special education (Cohen, Burns, Riley-Tillman, & Hosp, 2015; Hosp & Reschly, 2003).

This issue of disproportionality was one factor that served as a catalyst for changing the way students were identified for special education services with the reauthorization of the Individuals with Disabilities Education Act of 2004 (IDEA, 2004). When students are serviced through special education, they are typically pulled out of their general education classrooms and taught in a separate environment from their peers. One of the primary components of IDEA is to ensure a free and appropriate public education (FAPE) for all students in the least restrictive environment (LRE), which

includes ensuring that students of different races, cultures, and gender are included in their general education classroom to the maximum extent possible.

IDEA defines the eligibility criteria for 13 different educational disabilities that children can qualify under to receive specialized support. The disability label of "specific learning disability" (SLD) is the most commonly identified educational disability throughout the nation. Out of the nearly 5.7 million school-age students who received special education in the fall of 2011, 36% of those students were identified with a specific learning disability, followed by a speech language impairment (21.4%), other health impaired (11.6%), autism (7.1%), intellectual disability (6.8%), developmental delay (6.1%), and emotional disturbance (5.8%) (National Center for Education Statistics, 2014). Because of the large number of students identified as having a specific learning disability, the changes made to the law in 2004 for identifying a SLD are particularly relevant when considering disproportionality in special education.

When IDEA was reauthorized in 2004, one of the outcomes was that many states changed their definition and process for identifying a specific learning disability (SLD). Prior to this time, it was common practice to use a discrepancy model, in which learning disabilities were identified by determining if there was a significant discrepancy between a student's intellectual ability and academic achievement through the use of standardized assessments as part of the comprehensive evaluation for special education. Critics of this approach were quick to point out that the discrepancy model created a "wait to fail" approach for students who were struggling as well as created a class bias against students from low income households who traditionally did not perform as well on standardized assessments as their higher income counterparts (Fuchs, Mock, Morgan, & Young, 2003).

This system to identify students with learning disabilities was flawed because it focused primarily on referral and placement for special education and did not acknowledge the need for early and effective intervention (Prasse, 2011).

The revisions to IDEA indicated that states were no longer required to use a discrepancy model to identify learning disabilities, and subsequently, more school districts turned to a Response to Intervention (RTI) model that emphasized school-wide screening, data-based decision making, and progressively intensive levels of intervention and progress monitoring. More recently, a pedagogic shift has occurred to broaden the definition of RTI into a multi-tiered system of supports (MTSS), which provides an emphasis on prevention efforts and includes both academic and behavioral supports at varying levels of intensity (Center on Response to Intervention, 2013; Colorado Department of Education, 2014). For the purposes of this document, the term RTI will be used throughout to describe this model of service delivery since the information and data was gathered prior to the development of the MTSS model.

One of the intended consequences of RTI was to directly address the issues of disproportionality for specific groups of students and make both general and special education a more equitable system of support for all students. With the implementation of RTI, schools were required to provide access to early intervention and targeted support within the general education setting for all students who were struggling with areas related to their education (e.g., reading, writing, math, behavior, etc.). This early intervention and support, theoretically, would decrease the number of students of color being unnecessarily staffed into special education. However, because the implementation of RTI is still relatively new, there is little data to support this theory that an RTI model

of service delivery will positively impact the larger cultural issue of disproportionality within educational systems.

Questions still remain regarding what best practice looks like for RTI and how it might differ according to the variant needs within each phase of a student's education, including the practical application at the elementary, middle, and high school levels. Implementation of RTI continues to be a struggle for some districts as they determine how to best execute the essential components with fidelity while facing challenging issues pertaining to public education such as funding cuts, buy-in among educators, and professional development opportunities. Research suggests that middle and high schools have more challenges with RTI implementation than elementary schools (Fuchs, Fuchs, & Compton, 2010; Prewett et al., 2012; Vaughn & Fletcher, 2010), which can affect overall fidelity of implementation and effectiveness of the RTI process.

Additionally, the RTI model has a strong emphasis on preventative efforts, which includes identifying and intervening with students at an early age who have academic or behavioral needs. Although it varies between districts and states, programs and resources tend to be more easily accessed at the elementary level, including but not limited to age-appropriate progress monitoring tools, assessments, research-based interventions and curriculum, smaller group sizes, and support staff. Because RTI implementation focuses on early intervention and has higher levels of implementation fidelity at the elementary level, only Kindergarten through 5th grade data was examined for the purposes of this study.

Summary

Disproportionality has historically been a persistent and pervasive issue within special education for the past four decades. It continues to be an important issue and one that has been proven difficult to remediate despite increased public attention and legislative efforts. With changes to federal legislation, such as No Child Left Behind (2001) and IDEA (2004), public education experienced a shift in service delivery to a more research-based, data-driven approach including the use of an RTI model in many schools across the nation. Because of its increasing popularity, RTI has become a prevalent pre-referral process for special education. However, the presence of and possible effects of disproportionality within the RTI model have not been adequately or thoroughly explored in the existing literature.

Although RTI is a much broader system that encompasses the entirety of public education service delivery, its implementation has been largely driven by special education due to the revised SLD requirements for qualification purposes. The strong influence of special education on RTI is not yet fully known, nor is its impact on students fully realized. Because RTI plays an integral role in referral and, subsequently, placement into special education, it is important to examine how disproportionality may or may not play a role in this pre-referral process. Additionally, most of the existing research on disproportionality has focused on the issue only after children have qualified for these specialized services. There is limited current research on the topic of disproportionality prior to special education when students are receiving targeted or intensive interventions as part of the RTI process.

The purpose of this study was to examine if disproportionate representation existed among groups of students who were receiving RTI interventions as well as determine if gender, race/ethnicity, or ELL status had a significant relationship to student outcome (e.g., continue with RTI interventions, special education eligibility, or exited from RTI) within a district using an RTI framework. Addressing this issue was meant to encourage educators to think critically about their pre-referral process and remediate potentially negative effects of disproportionality early on for students prior to placement in special education. Examining this topic can also help to inform future research on the effectiveness of an RTI referral process in regards to reducing disproportionality among specific groups of students.

Research Questions and Hypotheses

This study examined categorical data from an archival data set collected for the academic years 2010-2011 and 2011-2012. The selected school district was identified by the state education agency as being one that implemented the RTI model with a high degree of fidelity when compared to other districts across the state according to district level RTI implementation fidelity rubrics (A. Miller, personal communication, October 20, 2011; Colorado Department of Education, 2011). Specifically, the rubric defined the district's level of RTI implementation in each of the 6 components as either "operationalizing" or "optimizing," which are the two highest levels of implementation possible.

Demographic information on all Kindergarten through 5th grade students in the district who received a targeted and/or intensive intervention as part of the RTI process was recorded. This information included age, grade, gender, race/ethnicity, retention

status, family military status, English Language Learner status, outcome at the end of the school year (e.g., continuing with RTI interventions, special education eligibility, or discontinuation of RTI interventions), and specific referral concern (e.g., reading, writing, math, internalizing behavior, externalizing behavior, and speech) (see Appendix A). This study addressed the following questions:

1. *In a school district known for its RTI implementation fidelity, what are the numbers of children that received interventions in regards to race/ethnicity, gender, and English Language Learner (ELL) status?*

   a. *Do similar results exist for each school year?*

   Hypotheses: The literature states that approximately 15-20% of a school's population will be supported through targeted and intensive interventions within an RTI model; however, there is no indication in the research of what types of students are receiving those interventions in terms of race/ethnicity, gender, and ELL status. The bulk of the research has focused on these groups only after they have been placed into special education; therefore, no hypothesis exists for the number of students receiving interventions for each group.

2. *Are there statistically significant differences in the percentage of students receiving interventions for each group (race/ethnicity, gender, and ELL status) compared to their overall percentage in the elementary school district population for 2010-11 and 2011-12?*

   Hypotheses:

   HO1: Race/ethnicity. Given the extensive literature on disproportionality in the public school system over the years, it was hypothesized that there would be a

significantly higher percentage of African American students receiving interventions when compared to the percentage of African American students in the school or district. Additionally, it was hypothesized that there would be a higher percentage of students of color receiving interventions when compared to their total percentage in the school or district and when compared to the percentage of White students receiving interventions. These differences were hypothesized to appear across both school years given that there were no major changes to the RTI process across the district or within the schools between these two years.

HO2: Gender. Based on the current literature on disproportionality in regards to gender within special education, it was hypothesized that there would be a significantly higher percentage of males receiving interventions when compared to their percentage in the school and district population and a lower percentage of females represented within the group of students receiving interventions for both school years.

HO3: ELL status. Current research has shown mixed results for ELL students in terms of over and under representation within special education and there is very limited research for this group's representation within an RTI model; therefore, no hypothesis existed for the percentage of ELL students receiving interventions when compared to their percentage in the total school and district population.

3. *Was race/ethnicity, gender, and/or English Language Learner status a significant predictor of student outcomes at the end of the school years 2010-11 and 2011-12?*

Hypotheses: Based on the research for disproportionality in special education, it was believed that race/ethnicity and gender would serve as significant predictors for special education eligibility at the end of the school year. No hypothesis existed for ELL status as a predictor of special education outcome. Additionally, due to the lack of sufficient research for the other two outcomes, no hypothesis existed for race/ethnicity, gender, and ELL status being predictive of either continuing with or exiting from receiving RTI interventions.

Defining Study Terms

The following terms are commonly used throughout this paper and are defined below:

- *Data-Based Decision Making* occurs at all levels of RTI implementation and refers to the process of using data, often screening and progress monitoring data, to make decisions regarding educational needs and interventions (National Center on Response to Intervention, 2010).

- *Disproportionality* is the under- or overrepresentation of a particular group represented within a social system or construct when compared to other groups (National Education Association, 2007). In the field of education, disproportionality refers to the under or over representation of a group of children receiving specialized services than would be expected for the given population (Hosp, n.d.; National Education Association, 2007).

- *English Language Learner (ELL)* is a term used to describe students whose primary language is something other than English and who have limited English proficiency (Center for Public Education, 2007).

- *Ethnicity* is defined as identification with a particular race or large group of people who share similar customs, religion, and/or origin similar to one's own (Merriam-Webster, n.d.).

- *Evidence-based Practices* are educational practices and strategies that have been supported through research as effective for improving outcomes for students in a given population (Forman & Burke, 2007).

- *Gender* is used interchangeably with the other common term "sex" to define whether an individual is a male or female as identified by their parents to the school district.

- *General Education* consists of the standard curriculum and teaching practices that are provided to all students (Norlin, Kline, & Slater, 2007).

- *Implementation fidelity* is the extent to which an intervention or program is executed in the appropriate way, including the consistency, precision, and accuracy of implementation (Hennessey & Rumrill, 2003; Moncher & Prinz, 1991)

- *Multi-level Prevention System* refers to the framework of RTI in which there are three "levels" (primary, secondary, and tertiary) of prevention that provide a continuum of support. Primary prevention meets the needs of most students through high quality, core instruction. Secondary prevention provides more targeted support to students with learning or behavioral concerns, and tertiary prevention includes individualized intervention for students who require more support than what secondary prevention can provide (National Center on Response to Intervention, 2010; Reschly, 2007).

- *Problem Solving Teams* consist of a multidisciplinary group of educators (i.e., teachers, psychologists, counselors, administrators, etc.) that meet regularly to provide assistance with student academic and behavioral challenges using a structured and research-based approach known as a "problem-solving model" (Schwanz & Barbour, 2005; Wright, 2010).

- *Progress Monitoring* is the process of quantifying how a student or group of students is responding to interventions. Curriculum based measurements are commonly used as a convenient and quick way to monitor student growth in a specific area of concern (Center on Response to Intervention, 2013; Shinn, 2007).

- *Response to Intervention* (RTI) is a multi-level framework of service delivery typically delivered through a process of teaming within schools that includes a solid foundational curriculum for all students, high quality instruction, research-based interventions, monitoring of progress, and data-based decision making (Batsche et al., 2005; National Center on Response to Intervention, 2010). RTI is included under the broader term of *Multi-tiered System of Supports (MTSS),* which is "a prevention framework that organizes building level resources to address each individual student's academic and/or behavioral needs within intervention tiers that vary in intensity" (Center on Response to Intervention, 2013, p.6). MTSS includes both Response to Intervention and Positive Behavioral Intervention and Supports.

- *Special Education* is provided to students at no cost who are found eligible as having an educational disability and consists of a modified curriculum with

accommodations that take into account specific student needs though an individualized education plan (IEP) (Norlin, Kline, & Slater, 2007).

- *Targeted or intensive interventions* are defined as the second and third levels of intensity, respectively, within a multi-level prevention system. These interventions must be evidence-based and target specific skills in the area of need. (Center on Response to Intervention, 2013).

Chapter Two: Literature Review

Introduction

 This study examined the presence of disproportionality among race/ethnicity, gender, and ELL status for students who received targeted and intensive interventions within a school district known for its high level of RTI implementation fidelity across two school years. It also examined if any of these variables were predictors in determining student outcomes at the end of the school year, such as continuing with RTI interventions, placement in special education, or discontinuation of RTI interventions. In this chapter, the literature and research pertaining to disproportionality in race/ethnicity, gender, and ELL status is reviewed within the context of special education. Traditional methods for special education identification are discussed followed by the legislative changes that led to a movement in public education towards an RTI model of service delivery. The purposes, goals, and implementation of an RTI model are reviewed as well as how this new service delivery acts as a response to the problem of disproportionality.

Special Education Identification

 One of the most monumental pieces of education legislation in the history of education in the U.S. was the *Education for All Handicapped Children Act* (Public Law 94-142) of 1975, re-enacted in 1997 as the Individuals with Disabilities Education Act (IDEA) and most recently revised in 2004. Prior to the implementation of this law, people with disabilities were often placed in state institutions for the mentally ill or

disabled where they received minimal care and limited to non-existent services for rehabilitation (U.S. Department of Education, 2007). According to the U.S. Department of Education (2007), "in 1970, U.S. schools educated only one in five children with disabilities, and many states had laws excluding certain students, including children who were deaf, blind, emotionally disturbed, or mentally retarded" (p.2).

The passage of this act was the beginning of a new era of education that believed all students, regardless of ability, had a constitutional right to a public education. Prior case law also supported and strengthened the belief that all children had a right to a public education as determined by the equal protection clause of the 14th Amendment to the U.S. Constitution (*Pennsylvania Association for Retarded Citizens v. Commonwealth*, 1971; *Mills v. Board of Education of the District of Columbia*, 1972). Special education identification began in our country to support students within their general education setting to the maximum extent possible, ensuring that no one was excluded from an education based on their race, ethnicity, gender, or disability.

One of the primary components of IDEA is to ensure a free and appropriate public education (FAPE) for all students in the least restrictive environment (LRE). Among other things, it also defines the eligibility criteria for 13 educational disabilities and provides procedural safeguards for the special education process to protect the rights of children with disabilities and their families. Procedural safeguards include written informed consent, timelines to complete assessments, creation of an Individualized Education Plan (IEP), regular reviews of placement status within special education, and dispute resolution processes.

IDEA includes the education and intervention services available to children ages birth to 21 years old. According to Obiakor, et al. (2002), "Part B funds are contingent on states ensuring that students with disabilities are included in state and district assessments, with accommodations as appropriate, and that their performance is publicly reported" (p.12). Part B funds are allocated to children 3-21 years old, which is considered school-age, while Part C funding is allocated to children birth to 2 years old and has requirements specific to early intervention. Part B has 20 specific indicators that the states must use to measure their performance in educating children with disabilities. The federal government uses this data to determine the level of integrity with which states are implementing IDEA. These 20 indicators, as stated in the law, include topics such as graduation rates, drop-out rates, participation and performance on statewide assessments, suspensions and expulsions, participation/time in general education settings, parental involvement, disproportionate representation in special education that is the result of inappropriate placement, disproportionate representation in specific disability categories, and due process timelines (IDEA, 2004).

Two of the key indicators of IDEA include issues related to disproportionate representation. These were included because many children of color were being inappropriately placed into special education and were given disability labels that may have caused them to be educated in a more restrictive setting apart from their peers. With the passage of *Brown v. Board of Education* in 1954 and with the Civil Rights Movement starting to take hold, a national conversation began in the 1960s regarding segregation in education (Skiba et al., 2008). The first federal legislation, the *Education for All*

Handicapped Children Act, was passed in 1975 to help ensure that all students received a public education regardless of disability. This evolution of the public school system created an emphasis on equality and access for all students; however, the underlying social issues that contributed to racial segregation in the country continued to impact the educational system in new ways. With the introduction of special education, there was now an unintentional venue for students of color to be inappropriately identified and placed in more restrictive settings than their White peers.

In 2001, the No Child Left Behind Act (NCLB) was passed, which mandated a free and appropriate public education for all students and required that all students meet grade-level standards of proficiency. The passage of this law invited the federal government to take a much larger role in public education than it ever had before in linking federal funding to school performance. In addition to the development of state accountability systems, some of the other key elements of this law included "highly qualified" teachers in all publicly funded schools, school choice to families whose neighborhood school does not meet Adequate Yearly Progress (AYP), and "scientifically based" teaching practices.

One of the consequences of NCLB was a shift in education toward a more research and process-based approach to how public education was implemented. This shift in education also brought about revisions in 2004 to the federal special education law IDEA. One of the primary revisions was that states could no longer require the use of a discrepancy model when determining eligibility for a Specific Learning Disability (SLD). The discrepancy model determined the presence of a learning disability by

comparing a child's intellectual ability with his or her academic ability and detecting if there was a large enough discrepancy between the two domains. If there was a large enough discrepancy between a student's IQ score and achievement scores as determined by state definitions, then it could be concluded that student had a learning disability in the identified area of deficit (Kavale & Forness, 2000).

The discrepancy model had many critics in education claiming that this method of identifying learning disabilities kept children from receiving services until they were significantly behind their peers, or creating a "wait to fail" system. Additionally, some believed it created a class bias against students from low-income households who traditionally did not do as well on standardized assessments. As Fuchs, Mock, Morgan, and Young (2003) indicate, "Many of the deserving but unidentified students [were] from low-income homes with relatively low IQ scores insufficiently different from their low achievement scores to qualify them for special education services" (p.158).

The discrepancy model was flawed in that it focused primarily on referral and placement for special education and did not acknowledge the need for early and effective interventions for struggling students (Prasse, 2011). Other critics of the model believed that it placed too heavy of an emphasis on intelligence tests, some of which have questionable cultural validity, may not be predictive of specific academic skills, and lack the ability to distinguish between low performing students and students with learning disabilities (Gresham & Witt, 1997; Griffiths, Parson, Burns, VanDerHeyden, & Tilly, 2007; Stuebing et al., 2002). The discrepancy model also supported the belief that general and special education were two very separate and independent educational

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systems, which promoted a school culture of referring "problem" students based on factors unrelated to objective measures of performance.

With the new regulations of IDEA, however, states were no longer able to require use of the discrepancy model to identify a learning disability; although, that could remain one of the procedures used in the overall body of evidence. Instead, states were now allowed to "permit the use of a process based on the child's response to scientific, research-based intervention" (U.S. Department of Education, 2006, p.1) as part of the SLD determination process. This process, also known as Response to Intervention (RTI), and its impact on disproportionality for certain groups of students, were the primary topics of this research study due to their current relevance in public education today.

Disproportionality in Special Education

Disproportionality in special education has been an ongoing discussion and cause for concern at the district, state, and federal levels for the past 45 years, beginning with Dunn's (1968) seminal article on the topic which publicly illuminated the vastly disproportionate numbers of minority and low income children placed in special education. Disproportionality refers to the under or over representation of a group of children receiving specialized services than would be expected for the given population (Hosp, n.d.; National Education Association, 2007). Dunn's article, as well as numerous other research studies on this topic that have followed, have shed light on larger cultural issues of the American past and have caused educators to think critically about how the public school system delivers services to children in both general and special education.

In 1968, Lloyd M. Dunn's article, titled *Special Education for the Mentally Retarded – Is Much of It Justifiable?*, brought nation-wide attention to the issue of overrepresentation of low income, minority children in "special day" classes for students with mental retardation. He speculated that 60 to 80% of students taught by special education teachers were:

> from low status backgrounds – including Afro Americans, American Indians, Mexicans, and Puerto Rican Americans; those from nonstandard English speaking, broken, disorganized, and inadequate homes; and children from other non-middle class environments. (p.6)

In Dunn's opinion, the grossly disproportionate percentage was due in large part to special education acquiescing to general education's desire for "problem children" to be removed from their classrooms. He advocated for better nationwide special education programming and provided a blueprint for change with specific ideas on how to transform the special education system for the betterment of all students. His article helped to launch a new focus on the problem of disproportionality, including issues surrounding civil rights in education and public expenses related to funding educational programs.

Mercer's (1973) work followed up on the issue of disproportionality by examining how people were identified as mentally retarded (MR) and the labeling process in the public schools. His research used Riverside, CA, as a case study to measure who referred and labeled children for MR and what the distribution looked like of people who held the MR label. Some of the primary educational findings found that first to fourth grade elementary teachers were the "chief identifiers" or "primary labelers"

of students with suspected MR and the risk of actually being labeled MR dropped

markedly once children entered the fifth grade.

There were also biases present in the intelligence tests used within their study,

with significantly more Mexican American and Black children from low income

backgrounds scoring 79 or below (the cutoff score to meet criteria for MR identification)

than Anglo/White children. Mercer (1973) stated that,

> This overrepresentation of non-Anglos [was] particularly pronounced in those
> public institutions established for the purpose of promulgating and enforcing the
> public norms of the core culture: the public schools, law enforcement agencies,
> welfare and vocational rehabilitation agencies. (p.121)

Since Mercer's work was published, additional research has supported this claim

of increased disproportionate representation among minority children in high incidence,

"soft", or subjective disability categories that are diagnosed by educational professionals

(e.g., MR, Specific Learning Disability, Emotional Disturbance, and Speech/Language

Impairment) when compared to more objective diagnoses typically made by medical

professionals such as visual, hearing, or orthopedic impairments (Donovan & Cross,

2002; Gamm, 2007; Harry & Klingner, 2006; Skiba, et al., 2008; U.S. Department of

Education, 2005).

Perhaps the most convincing data of over and under-representation of minorities

within high-incidence disability categories come from the National Academy of Sciences,

who convened two separate panels (1982 and 2002) to investigate the topic of

disproportionality. The second of those panels included an extensive review of potential

contributing factors, including social, environmental, biological, and educational causes.

Their findings supported the notion that a "high-incidence" disability label could not be

attributed to intrinsic deficits within the child but rather was dependent upon "key aspects of the context of schooling itself, including administrative, curricular/instructional, and interpersonal factors [that] may contribute to their identification as having a disability and may contribute to the disproportionately high or low placement of minorities" (Donovan & Cross, 2002, p.27).

Disproportionality has been measured in various ways throughout history; however, the two most popular methods in the literature include calculating the Composition Index (CI) and a Risk Ratio (RR) (Bollmer, Bethel, Garrison-Mogren, & Brauen, 2007; Boneshefski & Runge, 2014; Hosp & Madyun, 2007; Skiba et al., 2011). The CI provides a way to determine if there are a higher percentage of students represented within a particular group than would be expected when compared to their representation in the overall population. For example, one could calculate the percentage of Hispanic/Latino(a) students in special education and compare that to the percentage of Hispanic/Latino(a) students within the total student population and determine if they are significantly different.

The risk ratio provides a way to calculate how much more or less likely a student in a particular racial/ethnic group will be placed into a specific category (i.e., drop out, special education, etc.) when compared to another group of students. For example, one could calculate a Black/African American student's risk for being placed in special education by dividing the total number of Black/African American students in special education by the total number of Black/African American students enrolled. The risk ratio is then calculated by taking that number and comparing it to the risk of all other

students or a comparison group (i.e., not Black/African American) being placed in special

education (Data Accountability Center, 2011; The Equity Project, n.d.; Skiba et al.,

2008). Although there are no definitive and consistent cutoff scores, risk ratios of 2.0 or

higher tend to be considered a significant amount of disproportionality for that group

(Gibb & Skiba, 2008). Relative risk ratios tend to be reported more frequently than other

measures of disproportionality due to their accessibility of the desired information

(Artiles, Sullivan, Waitoller, & Neal, 2010).

Types of Disproportionality

Race and ethnicity. Traditionally, research has focused on the issue of

disproportionality in regards to race and ethnicity. Although the statistics vary at the

state and district level, national studies have consistently demonstrated that African

American students are significantly more likely to be overrepresented in the disability

categories of mental retardation (MR) and emotional disturbance (ED) than other racial

groups, Native Americans are overrepresented in the developmental delay and learning

disability categories, and Asian/Pacific Islanders are likely to be underrepresented in

every disability category (Artiles, et al., 2010; Fergus, 2010; Finn, 1982; Hosp &

Reschly, 2003; Hosp & Reschly, 2004, National Education Association, 2007; Skiba et

al., 2008). While the majority of early investigation on the topic has focused on the

overrepresentation of African American students labeled MR and ED, research has

expanded to include the study of numerous culturally diverse groups.

Gender. The issue of disproportionality by gender has been widely explored,

with boys being significantly more likely to be placed in special education than girls

(Coutinho & Oswald, 2005; Wehmeyer & Schwartz, 2001). According to Finn (1982), there were three times as many males identified as having an ED than females in 1978 and almost two and half times as many males identified with an SLD. More recent research suggests these statistics have remained fairly stable over time with boys being identified twice as much as girls for special education despite racial or ethnic identity (National Education Association, 2007). However, the question remains whether there is a true overrepresentation of boys rather than an underrepresentation of girls receiving special education services.

Wehmeyer & Schwartz (2001) suggested that "females with disabilities are underrepresented in special education services largely due to biases based on behavior and gender stereotyping" (p.40). Because girls are less likely to receive behavioral referrals, they would need to show more severe problem behaviors than boys to warrant a referral. Similarly, girls in the aforementioned study had lower IQ scores than boys, demonstrating the need for girls to show a greater level of impairment and need before being identified with a learning disability according to the previous discrepancy model.

English language learners. The study of disproportionality with English Language Learners (ELLs) has become increasingly relevant with the changing national demographics and increase of culturally and linguistically diverse students (Maxwell, 2012; National Education Association, 2007; Zehler, et al., 2003). Between 1997-2008, the number of ELLs in public schools increased by 51 percent (U.S. Department of Education, 2013). ELLs "…are a heterogeneous population in terms of ethnicity,

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nationality, socioeconomic background, immigration status, and generation in the United States" (Orosco & Klinger, 2010, p.269).

Research on this population has shown mixed results, with both under and over representation for ELLs within special education nationally (Artiles et al., 2002; Linn & Hemmer, 2011; Zehler et al., 2003). The disability categories with the highest representation for this group have been in the areas of specific learning disability, speech/language impairment, and mental retardation (National Education Association, 2007). However, those results vary across districts and states. For example, Linn & Hemmer (2011) described in their study that while the risk ratio for ELL representation in special education was within normal limits for the state of Texas, there were huge discrepancies between the risk ratios of different regions within the state, with some showing very high levels of overrepresentation and some showing underrepresentation for this group.

Additionally, Zehler et al. (2003) found that districts with fewer than 100 children with limited English proficiency (LEP) tend to identify about 16% of these students as qualifying for special education, while districts with 100 or more LEP children identify about 9% of these students. Possible reasons for this difference include limited staff understanding of second language acquisition, lack of resources available to ELL students, limited understanding of assessment issues with ELL students, and confusion around pre-referral strategies for ELL students who experience academic difficulty.

Causes of Disproportionality

Some may ask why disproportionality is a nationwide problem that has been so persistent over the years despite efforts to remediate it, particularly if they believe strongly in the public education system and the processes through which educational diagnoses are established. Others have indicated that disproportionality is reflective of actual, intrinsic deficits within varying populations and should not be viewed as a problem to be solved but rather a reality that must be acknowledged in the same way that certain ethnic groups are more susceptible to some diseases (e.g., Ashkenazi Jewish ancestry and Tay-Sachs disease; sickle cell anemia and African American, African, or Mediterranean ancestry). However, the extensive research in the past two decades around this issue would prove otherwise, and instead supports a position that over or under representation is dependent upon constantly changing educational, social, and family systems that are influenced by the greater community and national culture.

In their article, Artiles, Harry, Reschly, and Chinn (2002) provide an overview of the problem of overrepresentation of minority students in special education. They discuss possible factors that contribute to this problem such as poverty, structural factors, instructional and assessment issues, and cultural discontinuity between teachers and students. According to the authors, poverty plays a large role in that African American students are much more likely to be placed in "emotional disturbance" programs as the school poverty level increases. Poverty also implies other risk factors, such as poor health care and environmental hazards that lead to lower educational outcomes. The

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issue of poverty is a large-scale social and domestic problem that cannot be easily addressed through education reform alone.

An organization known as the Equity Alliance (Fergus, 2010) set out to define the root causes of disproportionality by piloting a data-driven evaluation process examining data across 30 districts over the course of six years (2004-2010). They concluded that there were three main causes that had the most significant impact on disproportionality across all districts. The first cause was gaps in curriculum and instruction implementation. This included a minimal and/or continually changing core curriculum, an overabundance of intervention options for struggling learners, poorly structured intervention programs, and inconsistency among educators' knowledge of assessments. The second cause they identified was an inconsistent pre-referral process, which included different forms of information being collected, inconsistent forms and processes between schools, and a gap in knowledge about what constituted universal interventions.

The third and final cause they found was educators' limited beliefs in student abilities. In some districts, there was "limited understanding among practitioners regarding what constitutes a disability" (p.7). Many general educators expressed belief that special education could "fix" students and was the answer to providing better outcomes for struggling learners. Another aspect was that district staff questioned the school readiness of poor and minority students. As Fergus (2010) explains:

> We found practitioners were willing to cite the family and community (e.g., poverty, limited reading materials at home) as the reason why poor/low-income and racial/ethnic minority students were struggling academically, meanwhile attributing the academic performance of proficient students to their teaching practice. (p.8)

Skiba et al. (2006) also examined causes of disproportionality among African American and Native American students identified within special education by interviewing 66 educators in seven urban and near-urban districts. They conducted a thematic analysis of their data, which produced five major themes that contributed to disproportionate representation for these students within the disability categories of Significant Identifiable Emotional Disability (SIED) and Mental Retardation (MR). The first causal factor was contributions of sociodemographic factors, including lack of academic readiness skills, survival skills like aggression that do not fit into school settings, high transience rates, and lack of economic resources. The second theme involved contributions of general education, including classroom management problems, large class sizes, and high stakes testing and accountability.

The third theme that emerged was related to contributions of the special education processes and issues surrounding referral, assessment, and decision-making procedures. Other considerations related to special education were length of time, lack of behavioral resources, and cultural incongruence of behavioral expectations between a predominately White middle-class teaching staff and minority, low-income student body. The fourth theme, or factor contributing to disproportionality, was lack of available and needed resources. These resources included both human resources and tangible resources such as classroom accommodations, inadequate funding for education, conflicting feelings around the pre-referral team and process, and teacher perceptions of special education being the only resource available for struggling kids.

The final theme was educator perceptions around minority disproportionality and diversity, which included the difficult process of talking about race and reflecting on one's personal opinions and practices related to diversity in education. Because of the numerous and complex factors that maintain disproportionality in education, the authors suggest that "the successful remediation efforts will avoid simplistic or linear solutions, increase resources to address learning and behavior problems in general education, and seek methods to use data on racial disparity as a stimulus toward reflection and action" (Skiba et al., 2006, p.1424). Only when the underlying causes are clearly defined can successful remediation efforts be attempted.

What is a Response to Intervention Model?

With the revisions to IDEA in 2004 came the push for states to move towards a Response to Intervention model when identifying students who have specific learning disabilities. Although RTI was not considered a "cure all" for the issue of disproportionality, it was seen by some as a more equitable process of providing services to students within the general education setting who needed the most help based on more objective measures rather than simply a teacher referral based on limited or non-existent assessment data (Haager, 2007). RTI was designed to be a school-wide reform movement for all students struggling to meet academic standards and not just a process in which to identify a learning disability or placement for special education. Because of its school-wide approach, RTI was considered a viable way to decrease the disproportionate numbers of students of color receiving specialized support in more restrictive settings (Proctor, Graves, & Esch, 2012).

Response to Intervention has been defined in the literature in a number of ways. The RTI Action Network (n.d.) defines RTI as "a multi-tier approach to the early identification and support of students with learning and behavioral needs", which indicates that RTI was designed to be implemented as a school-wide approach. Other researchers and practitioners describe RTI in terms of the essential components that must be present in order for the process to work successfully. The National Center on Response to Intervention (2010) identifies four of the core components of RTI as:

> a school wide, multi-level instructional and behavioral system for preventing school failure; screening; progress monitoring; and data-based decision making for instruction, movement within the multi-level system, and disability identification (in accordance with state law). (p.1)

VanDerHeyden and Burns (2010) also include in their definition that the frequently described components of RTI include quality instruction in core content areas, universal screening, progress monitoring, increasingly intensive interventions designed to meet student needs, and data used to "make instructional, resource allocation, placement, and special education identification decisions" (p.6).

All of these descriptions describe RTI as an overarching system of support for students with academic and/or behavioral needs. Within this system, there are different levels of support which are accessed based on the student's level of functioning and need at any one point in time. Each level of support includes the use of assessment and intervention to "maximize student achievement and to reduce behavioral problems" (National Center on Response to Intervention, 2010, p.2). One of the most commonly accepted systems of RTI is the problem-solving model which typically involves three different levels, or tiers, of support including a universal, targeted, and intensive tier

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(Burns, Deno, & Jimerson, 2007; Gresham, 2007; Johnson, Mellard, Fuchs, & McKnight, 2006).

Within the universal tier, approximately 80% of the student population's needs are served through high quality instruction and curriculum for all students, which are mostly provided in the general education classroom. In this tier, students are screened using a validated and/or curriculum based measure to determine who is most at-risk for falling behind grade-level expectations when compared to peers and state-level standards. This screening allows for early identification of students who experience difficulties with academic demands, and ensures that they receive intervention the moment those difficulties arise (Fuchs & Fuchs, 1998). An evaluation of the universal tier takes into consideration the ecology of the classroom environment, including if effective classroom management techniques are being utilized, teacher beliefs and attitudes, and culturally responsive instruction (Klingner & Edwards, 2006; Newell & Kratochwill, 2007).

In addition to high quality instruction and screening procedures, the universal tier also encompasses school-wide prevention efforts and behavioral supports to reduce problem behaviors in school. The most widely used system for supporting positive behavior is referred to as Positive Behavior and Intervention Support (PBIS). In general, PBIS is adapted to the needs of individual schools and explicitly teaches prosocial skills and behaviors throughout various school settings (McKevitt & Braaksma, 2007). The purpose of PBIS is to reinforce positive behavior through the implementation of behavioral interventions in an effort to create more effective environments for learning (Sugai et al., 2000).

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These types of school-wide positive behavioral supports have been largely successful in addressing classroom management and discipline issues such as poor attendance, tardiness, and antisocial behavior as well as increasing academic engagement and achievement for students (Technical Assistance Center on Positive Behavioral Intervention and Supports, 2009). By putting these components in place (e.g., strong core curriculum, positive behavior support system), schools can address the academic and behavioral needs of the majority of students at the universal level. However, not all students will succeed with these supports alone and may need additional help with accessing the curriculum or educational environment.

Once students have been identified as falling behind grade level standards and prior to the implementation of any targeted assessment or intervention, parents should be notified and invited to participate in the next phase of the problem-solving process (Burns, Jacob, & Wagner, 2008). Including parents often and early on in the decision-making process ensures that they remain active partners in their children's education and have the ability to support intervention efforts at home. It also helps the team to understand the student in a more holistic way, including further insights into the child's strengths, struggles, and environmental factors that may be influencing behavior or academic performance (Esler, Godber, & Christenson, 2007; Miller & Kraft, 2007). Depending on the developmental readiness of the student, involving him or her can be another effective practice for increasing motivation and engagement (Jacob & Hartshorne, 2007).

The targeted tier is designed to support approximately 15% of the student population whose needs are not being met at the universal level alone. In this tier, children receive research-based interventions targeted at the specific area of concern, usually in small group settings. Their skill level is also monitored on a more frequent basis than in the universal tier to determine if they are making sufficient progress to meet grade-level expectations. Curriculum based measurements consist of short and easy to administer assessments that measure mastery over a specific academic skill and are commonly used to monitor progress so educators can determine how students are responding to interventions (Shinn, 2007). These frequent data points are used to develop a trend line to determine if students will meet a grade-specific goal at a sufficient rate, also referred to as "closing the gap" between the student's trend line and the expected or necessary goal line corresponding with grade level standards. This data helps to inform educators if interventions need to be intensified or altered for the student to make sufficient growth to meet the goal, which is one of the key components to RTI referred to as "data-based decision making."

Throughout the different levels of an RTI system, interventions and instructional practices are required to be soundly based in research and have supportive evidence of their effectiveness with the relevant student population. Both NCLB and IDEA require schools to use "evidence-based interventions" to support the existing curriculum. According to Forman, Olin, Hoagwood, Crowe, and Saka (2009), "evidence based interventions are those that are empirically supported and substantiated with research findings that demonstrate beneficial and predictable outcomes" (p.26).

Research-based interventions should also be culturally appropriate, targeted for the specific population or environment, and implemented with a high level of fidelity (Forman & Burke, 2007; Newell & Kratochwill, 2007). When RTI is implemented according to this definition, it can become a process in which students from varying cultural backgrounds can receive the support they need within the general education setting in order to meet grade level expectations. The result of this culturally responsive RTI process would therefore help to address the issue of disproportionality in students who get referred for special education services.

Inevitably, there will be students who continue to struggle even with the extra supports provided at the targeted tier. For this small percentage of students who do not make sufficient progress, they may then be moved to an intensive tier where they receive more frequent or rigorous intervention services and individualized instruction. The intensive tier can include but is not limited to special education services.

Purposes and Goals of RTI

Prior to the adoption of RTI, only the students who exhibited relatively poor academic ability were referred for special education testing and given the chance of specialized instruction or intervention. Students had to fall dramatically behind their peers before receiving any kind of specialized or targeted support, which usually came in the form of special education. This "wait to fail" model was the cause of many justified complaints among educators who worked with students that struggled academically but were not far enough behind their peers to receive additional support. There was a general feeling of learned helplessness among these educators who wanted to serve these students

but did not have the resources or the systematic support to provide the needed

interventions (Fuchs et al., 2003).

When RTI was first introduced, it was hailed as a response to the "wait to fail"

model. RTI was designed to transform the way the public school system delivered

support services to children who were struggling through using a prevention model rather

than a "refer and place" model which the discrepancy criteria supported. Similar to the

public health system where an emphasis is placed on prevention through regular exams,

exercise, and healthy living habits, RTI is intended to provide a framework for providing

increasingly intensive services as needed in the hopes that most significant learning

challenges can be addressed and remediated at the earliest stages of concern (Vaughn &

Fletcher, 2012). However, the prevention model of RTI may be more applicable at the

elementary level than at the secondary level where students have already demonstrated a

history of academic or behavioral deficits.

For those students who require additional support, another goal of RTI is to create

a systematic, effective, and efficient way of providing interventions regardless of

disability or special education status. RTI causes schools and districts to shy away from

the idea that general and special education are separate entities and instead encourages

the two fields to use their resources collectively in addressing the needs of the entire

school community. RTI can also provide support for students who fail to make adequate

progress when given appropriate, research-based interventions, which can lead to a

special education referral or placement for a suspected learning disability.

A focus on progress monitoring and data based decision-making helps to strengthen the process by creating an environment of accountability to the intervention and the student. Instead of using random programs or interventions based on current educational fads, another purpose of RTI was to require the use of scientific, research-based interventions when addressing the needs of students (East, 2006). Requiring interventions to be grounded in research was meant to ensure students received services that benefitted their educational growth and supported effective teaching practices rather than catered to the current educational fads. Using research-based interventions also ensures that educators think critically about effective practices for specific populations or groups of students.

During the time the discrepancy model was used exclusively to identify learning disabilities, a disproportionate number of children who qualified and received special education services were from an ethnic/racial minority (Artiles, et al., 2002; Fergus, 2010; Harry & Klinger, 2006; Hosp & Reschly, 2003; National Resource Council, 2002). By identifying children early for targeted support, RTI became a potential solution to the problem of disproportionality within special education (Burns, Jacob, & Wagner, 2008; Gamm, 2007; Griffiths et al., 2007; Marston, Muyskens, Lau, & Canter, 2003; VanDerHeyden, Witt, & Gilbertson, 2007). Theoretically, RTI could reduce bias in the process for students at risk for a learning disability or school failure because only those who do not make adequate progress based on the data would be referred for a special education evaluation. When at-risk students are identified early, the goal becomes "to

improve outcomes instead of identifying a disability" (Newell & Kratochwill, 2007, p.76).

When implemented properly and with fidelity, RTI also has the potential to be a multifaceted, fair, valid, and useful assessment model for the special education identification process (Burns, Jacob, & Wagner, 2003). It eliminates some of the race and socioeconomic bias of certain standardized measures and allows educators to utilize culturally diverse pre-referral practices such as consideration of a student's language proficiency, language dominance, and degree of acculturation. Other effective pre-referral practices should include collaborative relationships between school, home, and community; culturally relevant classroom instruction and management strategies; and incorporating culture and language into the daily curriculum (Salend, Garrick Duhaney, & Montgomery, 2002). As the field of education continues to explore the challenges and benefits of an RTI model, time will determine what kind of impact this new service delivery system has had on creating a more equitable education system for all American students.

Implementation of RTI

While the essential components of RTI remain consistent, the actual process and implementation of RTI has varied according to different state, district, and school level policies and other factors. Nationally, 8 out of the 50 states have adopted an RTI model as the only way to identify an SLD, including Colorado, Connecticut, Florida, Idaho, Louisiana, Rhode Island, West Virginia, and Wisconsin (National Center on Response to Intervention, 2010), though more states are beginning to follow suit. For the states that

do not require RTI as the only method for identifying an SLD, they have either continued to allow the use of the discrepancy model in addition to RTI or a combination of RTI with other methods, such as examining patterns of strengths and weaknesses in the student's cognitive and educational profiles.

This shift in service delivery has raised many questions related to the practical application of an RTI model at the elementary, middle and high school levels. Questions still remain regarding what best practice looks like for RTI at each of these levels and how it might differ according to the variant needs within each phase of a student's education. Implementation of RTI also continues to be a struggle for some districts as they determine how to best execute the essential components with fidelity while facing challenging issues pertaining to public education such as funding cuts, buy-in among educators, and professional development opportunities. More recently, a pedagogic shift has occurred to broaden the definition of RTI into a multi-tiered system of support (MTSS), which provides an emphasis on prevention efforts and includes both academic and behavioral supports at varying levels of intensity (Center on Response to Intervention, 2013; Colorado Department of Education, 2014). For the purposes of this document, the term "RTI" is used throughout to describe this model of service delivery since the information and data was gathered prior to the development of the MTSS model.

In the state of Colorado, where the state constitution dictates that districts have local control over public education, the state department of education developed their own framework for guiding districts on how to conceptualize and implement RTI. This

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framework consists of 6 essential components: 1) Leadership, 2) Curriculum and Instruction, 3) School Climate and Culture, 4) Problem-Solving Process, 5) Assessment, and 6) Family and Community Engagement (Colorado Department of Education, 2008). Leadership refers to district and school level administrators providing the infrastructure for RTI to work, including professional development opportunities for staff and ongoing commitment to the distribution of time and resources. Curriculum and Instruction refers to having a quality core curriculum based on national and state standards as well as high quality instructional practices. The three-tiered model of progressively intensive support also falls within this domain.

The third component, School Climate and Culture, ensures that a positive school climate is sustained through "creating a caring school community", "teaching appropriate behavior and social problem-solving skills", "implementing positive behavior support", and "providing rigorous academic instruction" (Colorado Department of Education, 2008, p.5). The Problem-Solving Process is a collaborative decision-making process that includes supervision of data collection, progress monitoring as well as implementation fidelity for interventions. Assessment is related to this component but is listed separately because its focus is on providing data that will "identify academic and behavioral needs of individual students, inform the problem-solving process, design and modify instruction to meet student needs, and evaluate effectiveness of instruction at different levels of the system (e.g., classroom, school, district)" (Colorado Department of Education, 2008, p.7).

The final component, Family and Community Engagement, happens when families, schools, and communities work together for the purpose of improving student outcomes and success. Thinking of RTI within this framework allows districts to consider and evaluate their performance on each of the necessary components of effective implementation.

To gain consistency with the RTI process, some states have developed their own method for assessing fidelity of RTI implementation. For example, Colorado's Department of Education developed, and made publicly available, rubrics for educators to measure how well they are implementing RTI at the district, school, and classroom levels (Colorado Department of Education, 2011; see Appendix B). These rubrics are meant to encourage active review of the RTI process and assist with planning. Each rubric reviews the six components of RTI and provides a rating in terms of "growth stages" which are described in order from the lowest to highest level of implementation: emerging, developing, operationalizing, and optimizing. At the emerging stage, districts are working to "build consensus and buy-in for RTI implementation." The developing stage "involves designing the infrastructure to implement RTI." At the operationalizing stage, schools are utilizing those structures and working towards building consistency and fidelity. At the optimizing stage, "the model is imbedded and done with fidelity" while continuing to monitor and make data-informed changes based on its effectiveness. When implemented with high levels of fidelity, RTI is supposed to provide a school-wide process for identifying and supporting students within the least restrictive environment

and decrease the numbers of students who are inappropriately identified for and placed into special education.

RTI at the elementary and secondary levels. While Colorado's RTI framework provides a good general structure and guide to implementation of the process, the practical application of that process varies significantly between states, districts, and individual schools. Particularly, much discussion has focused on the challenges of and differences in implementation of RTI at the elementary and secondary levels (Fuchs, Fuchs, & Compton, 2010; Johnson & Smith, 2008; Prewett, et al., 2012; Vaughn et al., 2010). Some of the more common challenges of RTI at the secondary level are the result of the increased size of the school and staff as well as the decreased flexibility in scheduling when compared to elementary level schools. Other challenges secondary schools must consider include changes in staffing, curriculum realignments, limited selection of progress monitoring tools designed for this population and aligned with the school curriculum, graduation credit requirements, age-appropriate interventions, and scheduling of interventions (Ehren, n.d.; Prewett et al., 2012).

These challenges pose a unique situation for secondary schools that have little guidance in how to implement RTI with fidelity given that much of the professional development and research has been focused on application of the process within elementary schools. RTI at the secondary level must look different than the elementary level due to the nature of the students' developmental and academic needs. As Vaughn and Fletcher (2012) explain, "At the elementary level, Tier 2 is conceptualized as a prevention approach. However, by the time students are in fourth grade and certainly by

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secondary school, the intention of prevention is no longer really feasible" (p.248). It is because of these challenges that only elementary school data were used for the purposes of this study in looking at disproportionality among groups of students receiving RTI interventions.

The process of RTI in middle and high schools tends to evolve into a more reactionary approach rather than a preventative one. Once students have reached middle school, they likely bring with them a wealth of previous assessment data and documentation of academic or behavioral performance. Fuchs, Fuchs, and Compton (2010) suggest that RTI needs to be "turned upside down" at the secondary level, where students receive the highest intensity of intervention first (Tier 3) rather than participating in a series of progressively intensive interventions as they would in elementary school (Tiers 1 and 2). This idea stems from the belief that the older students are, the less time they have in school to remediate whatever deficits might be present and the more likely they have already received targeted or intensive support that was ineffective.

Additionally, the curriculum demands and content varies between grade levels. Elementary school tends to focus on acquisition of basic skills, but in middle and high school the curriculum requires students to use those basic skills for the purpose of acquiring content knowledge and performing more complex problem-solving (Johnson & Smith, 2008; Swanson, 2001). With the increased academic demand in secondary schools, it is important for the gaps in students' basic knowledge to be addressed as immediately and intensively as possible so they are able to maximize the benefit they receive from the general education curriculum. Consequently, the goal of RTI shifts

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from working to avoid the need for more intensive intervention through early intervention and screening to one of working towards "reducing and eliminating already existing, sizable academic deficits" (Fuchs, Fuchs, & Compton, 2010, p.26).

As RTI continues to evolve and become a more permanent fixture in public education, these fundamental differences in how the process should be implemented across grade levels will continue to be addressed and actualized within the schools. Perhaps a more consistent RTI process will also emerge across district and state lines with the development of standardized implementation fidelity tools such as the district, school, and classroom level evaluation rubrics that the Colorado Department of Education released that are aligned with their RTI framework (Colorado Department of Education, 2011). However, the RTI process as a whole is meant to be fluid among the different levels of support, creating an opportunity for elementary and secondary schools to find common ground in the process despite differences in practical application.

Summary of Disproportionate Representation and the RTI Process

Disproportionate representation of various groups in special education has been critiqued for a number of reasons. Hosp and Reschly (2003) outline some of these criticisms, which include the deleterious effects of labeling, segregation of placement, and the presumed ineffectiveness of special education. When students are labeled as having a disability, there is risk that the disability label influences how they are treated by teachers, adults, and other students, particularly in regards to noticing a higher frequency of negative behaviors. These so-called "labeling effects" in turn can shape a student's self-perception and belief in their own potential or abilities in negative ways. There can

also be an increased sense of social stigmatization for students, particularly those that identify with a marginalized group outside of school (Patton, 1998).

Oftentimes, students who are labeled with particular disabilities, such as mental retardation and emotional disturbance, are placed in settings outside the general education classroom that are specific to a disability category and are staffed with a teacher who has expertise working with that population of students (e.g., ED classroom, severe or mild/moderate special needs class, etc.). In some cases, more restrictive settings might also include alternative placements or juvenile detention facilities, which can lead to the so-called "school to prison pipeline" for students who are considered at-risk or who may be the recipients of disproportionate discipline practices (Bird & Bassin, 2015). This segregation of placement poses a serious question to be asked related to a child's constitutional civil rights (Dunn, 1968). In federal law, this right is defined by the Least Restrictive Environment (LRE) provision of IDEA (2004) which states that "to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled." When students are removed from their opportunity to learn alongside typically-developing peers, it may hinder rather than help their academic or behavioral progress by restricting their access to a more rigorous and full curriculum, decreasing the amount of interaction they receive with non-disabled peers, and limiting their academic and post-secondary opportunities (Fergus, 2010).

Hosp and Reschly's (2003) final criticism of disproportionality is the presumed ineffectiveness of special education. As previously mentioned, there is a common

perception among general educators that special education has the power to "fix" students or provide some kind of magical treatment for students who are struggling. Unfortunately, the research on the effectiveness of special education has been inconsistent and no intervention or program has been shown to completely remediate the effects of a disability (Hocutt, 1996). There is little doubt that special education can be a positive opportunity for students by providing smaller class sizes and increased individualized support; however, placing students unnecessarily in more restrictive types of programming should only come after an RTI problem-solving process has been conducted and the student was unable to benefit from specific and targeted interventions.

Although RTI is a much broader system that encompasses the entirety of public education service delivery, its implementation has been largely driven by special education due to the revised SLD requirements for qualification purposes. Because RTI plays an integral role in referral and, subsequently, placement into special education, it is important to examine how disproportionality may or may not play a role in this pre-referral process. Additionally, most of the existing research on disproportionality has focused on the issue only after children have qualified for these specialized services. There is limited current research on the topic of disproportionality prior to special education when students are receiving targeted or intensive interventions as part of the RTI process.

The purpose of this study was to examine if disproportionate representation existed among groups of students who received RTI interventions as well as determine if gender, race/ethnicity, or ELL status had a significant relationship to student outcome

(e.g., continue with RTI interventions, special education eligibility, or exited from RTI) within a district using an RTI framework. Addressing this issue was meant to encourage educators to think critically about their pre-referral process and remediate potentially negative effects of disproportionality early on for students prior to placement in special education. It can also help to inform future research on the effectiveness of an RTI referral process in regards to reducing disproportionality among specific groups of students.

Chapter Three: Method

Study Design

This study examined categorical data from an archival data set collected for two consecutive years from an urban/suburban school district in the western United States. Demographic information on all Kindergarten through 5th grade elementary students in the district receiving a targeted or intensive intervention as part of the RTI process was recorded and analyzed using quantitative descriptive and correlational research design methods. Independent variables that were examined included race/ethnicity, gender, and ELL status and dependent variables included student outcomes (e.g., continuing with RTI interventions, placement in special education, or exiting from RTI interventions) at the end of each school year.

Subjects

District selection.

The selected school district was identified by the Colorado state education agency as one that implemented an RTI model with a high degree of fidelity according to district level RTI implementation fidelity rubrics (A. Miller, personal communication, October 20, 2011; Colorado Department of Education District Rubric, 2011). Specifically, the rubric defined the district's level of RTI implementation in each of the six components as either "operationalizing" or "optimizing" which are the two highest levels of implementation possible.

This school district had approximately 7,500 total students enrolled during the 2010-2011 school year and about 7,700 students enrolled in the 2011-2012 school year. This district consisted of 12 schools, including 8 elementary (grades K-5), 2 middle (grades 6-8), and 2 high schools (grades 9-12). For the purposes of this study, only the elementary schools (kindergarten through fifth grade) were used because of the strong focus on early intervention within the RTI model and the higher degree of implementation fidelity among elementary schools when compared to secondary schools (Fuchs, Fuchs, & Compton, 2010; Vaughn & Fletcher, 2012).

Out of the total district student population in 2011-2012, 46% identified as having a minority ethnic background, with the largest percentages being students from Hispanic/Latino (22%) and African American (13%) ethnic backgrounds. Additionally, 45% of students in the district qualified for free-reduced lunch status, which is a common measure of poverty or low socioeconomic status. There were slightly more male (53%) than female (47%) students. Three percent of students were identified as gifted/talented, 14% were enrolled in special education, 6% were English Language Learners, and 3% were homeless. Table 1 describes the composition of the district across both school years that data were collected.

Table 1.

School District (K-12th grade) Demographics Reported as Total Number of Students.

	2010-2011	2011-2012
Race/Ethnicity		
American Indian/Alaskan Native	77	72
Asian	91	135
Black/African American	1,067	1,020
Hispanic/Latino	1,681	1,728
White/Caucasian	4,048	4,139
Native Hawaiian/Other Pacific Islander	91	60
Two or more races	481	548
Sex/Gender		
Male	3,965	4,073
Female	3,571	3,629
English Language Learner (ELL)	396	454
Free/Reduced Lunch Eligible	3,258	3,469
Gifted/Talented	225	269
Special Education	1,004	1,094
Homeless	129	227
Total Number of Students	**7,536**	**7,702**

For the elementary schools used in this study, 44% identified as having a minority ethnic background for the 2011-2012 school year, with the largest percentages being students from Hispanic (22%) and African American (12%) backgrounds. The percentage of students who qualified for free-reduced lunch status was 51%, and there were more male students (52%) than female students (48%). English language learners accounted for 7% of the elementary population. The elementary level population within the district for each school year employed in this study can be found in Table 2.

Table 2.

Elementary School District (K-5th grade) Demographics Reported as Total Number of Students.

	2010-2011	2011-2012
Race/Ethnicity		
American Indian/Alaskan Native	37	36
Asian	63	62
Black/African American	485	464
Hispanic/Latino	859	884
White/Caucasian	2,159	2,192
Native Hawaiian/Other Pacific Islander	48	41
Two or more races	248	264
Sex/Gender		
Male	2,008	2,057
Female	1,873	1,886
English Language Learner (ELL)	271	292
Free/Reduced Lunch Eligible	1,947	2,021
Total Number of Students	**3,881**	**3,943**

Participant selection.

All Kindergarten through 5th grade students in the school district who received targeted and/or intensive interventions as part of the RTI process for the 2010-2011 and 2011-2012 school years were included in the data collection. Targeted and intensive interventions were defined as interventions that provided additional support, either through increased time or intensity, in an identified area of concern above and beyond the general education curriculum as decided by the school level problem-solving team. Students were selected if they had been through the RTI process within their school and were being monitored on their progress while receiving these interventions. No students were excluded from the data except for the possibility of informant error. No identifying information about the students was reported as part of the data collection. Information

was collected by the school psychologists who were assigned to each of the eight elementary schools.

Demographic information for district-wide data on elementary students who received interventions for both school years is provided in Table 3, and data for each elementary school are provided in Appendix C. Individual elementary schools demonstrated a wide variety of students who received interventions and outcomes for those students. In 2010-2011, there were a total of 247 students within the district who received interventions of which 53% were White/Caucasian, 15% were Black/African American, 25% were Hispanic/Latino(a), 6% were Other race/Multi-racial, 62% were male, 38% were female, and 8% were English Language Learners. At the end of this school year, 59% of students who were receiving interventions continued with those interventions in the RTI process, 17% went on to receive special education support, 10% of students exited from RTI indicating they did not require further intervention, and 13% moved out of the district.

In 2011-2012 there was a total of 253 students receiving interventions, which included 62% White/Caucasian, 19% Black/African American, 20% Hispanic/Latino(a), 5% Other race/Multi-racial, 60% male, 40% female, and 5% English Language Learners. At the end of this school year, 68% of students who were receiving interventions continued with those interventions, 14% went on to receive special education support, 10% of students exited from RTI, and 8% moved out of the district (See Table 3).

Table 3.

District Elementary School Descriptive Data Reported as Total Number of
Students and Percentage of Students Represented in Each Category.

	2010-2011		2011-2012	
	RTI (%)	Total District (%)	RTI (%)	Total District (%)
Race/Ethnicity				
White/Caucasian	132 (53)	2,159 (56)	158 (62)	2,192 (56)
Male	78 (32)	1,125 (29)	100 (40)	1,158 (29)
Female	54 (22)	1,034 (27)	58 (23)	1,034 (26)
Black/African American	36 (15)	485 (12)	29 (12)	464 (12)
Male	22 (9)	255 (7)	19 (8)	241 (6)
Female	15 (6)	230 (6)	11 (4)	223 (6)
Hispanic/Latino(a)	64 (26)	859 (22)	52 (21)	884 (22)
Male	42 (17)	434 (11)	31 (12)	452 (11)
Female	20 (8)	425 (11)	21 (8)	432 (11)
Other race/Multi-racial	15 (6)	378 (10)	14 (5)	403 (10)
Male	12 (5)	194 (5)	3 (1)	206 (5)
Female	4 (2)	184 (5)	10 (4)	197 (5)
Sex/Gender				
Male	154 (62)	2,008 (52)	153 (60)	2,057 (52)
Female	93 (38)	1,873 (48)	100 (40)	1,886 (48)
English Language Learner (ELL)	21 (9)	271 (7)	14 (6)	292 (7)
Outcome at end of year				
Continue RTI	146 (59)		172 (68)	
Special Education	42 (17)		35 (14)	
Exited from RTI	26 (11)		25 (10)	
Moved	33 (13)		21 (8)	
Total Number of Students	247	3,881	253	3,943

Procedures

The selected school district asked their school psychologists to complete school
specific data collection forms on non-special education students who had received
targeted or intensive interventions for the 2010-2011 and the 2011-2012 school years
(See Appendix A). Collecting data for two consecutive school years allowed for the
examination of how RTI may affect disproportionality over time. The data collected
were not coded with identifying information on students; therefore it is highly probable

that duplicates exist across the two school years. The district gave their mental health

team a month to gather and complete these forms for each student in their respective

elementary schools.

The following procedures were implemented:

1) Permission was granted by district administration to develop the form and
   gather data

2) The form was developed and approved by district administration

3) The form was introduced and explained at a monthly mental health team
   meeting

4) Forms were completed by team members and returned to a district
   representative

5) Forms were reviewed for completeness and/or missing data

6) Data were entered into a spreadsheet for statistical analysis

Measure

The data collection form was developed by a school psychologist and district

level director for the purposes of evaluating RTI service delivery within the school

district. The form requested the following demographic child information: age, grade,

gender, race/ethnicity, retention status, military family status, English Language Learner

status, outcome at the end of the school year (e.g., whether or not a child continued RTI

interventions, qualified for special education, or exited from RTI interventions because of

adequate progress), and specific referral concern (e.g., reading, writing, math,

internalizing behavior, externalizing behavior, and speech). Due to the specific focus and

nature of this study, military status, retention status, and reason for referral were excluded from the data analysis because they were not directly related to the research questions.

Reliability and validity.

To ensure reliability and validity of the data, the participants who completed the forms were given specific oral instructions on how to compile the information and an example of how to complete each section of the form. All participants were present at this meeting and were encouraged to ask questions if they did not understand the data collection procedures.

Additionally, much of the information requested was available to participants through the use of a district-wide database that contained objective student data consisting of information such as grade level, date of birth, race/ethnicity as identified by the family at the time of enrollment, emergency contact information, and attendance records. Conditions that were educationally relevant were also provided through this database such as health impairments, ELL status, and if a child was being serviced under a 504 plan or IEP. Participants were instructed to consult with their English Language Acquisition teacher in the building to confirm ELL status for all students receiving targeted or intensive interventions. English Language Learner status was defined as any child who was identified on a state level assessment as not proficient in English (NEP) or was limited in English proficiency (LEP). Special education eligibility was defined as any student who went through the RTI process and was found eligible for special education services by the end of the school year.

Chapter Four: Results

The purpose of this study was to examine if disproportionate representation existed among groups of students who received RTI interventions as well as to determine if race/ethnicity, gender, or ELL status had a significant association with student outcome at the end of the year. Demographic information was collected on all students receiving interventions within a school district known for its high level of RTI implementation fidelity. In Chapter Four, the details of how the data were coded and analyzed to address each of the research questions is described.

Data Cleaning and Entry

An analysis of missing data was conducted and it was determined that there were no missing data for race/ethnicity, gender, ELL status, and outcome variables. Categorical data from each of the schools were coded and entered into SPSS for descriptive information and analysis. The categorical variables were entered as follows:

- *Sex/Gender* (Male = 0; Female = 1)

- *Race/ethnicity* (White/Caucasian = 0; Hispanic/Latino(a) = 1; African American = 2; Asian = 3; Two or more races = 4; American Indian/Alaskan Native = 5; Native Hawaiian/Pacific Islander = 6)

- *ELL status* (Non-ELL = 0; ELL = 1)

- *Outcome at the end of the year* (Continued in RTI = 0; Eligible for special education = 1; Exited out of RTI = 2; Moved = 3)

- *School* (School A = 1; School B = 2; School C = 3; School D = 4; School E = 5; School F = 6; School G = 7; School H = 8)

Due to the small numbers of certain ethnic groups and for ease of reporting and analysis, race/ethnicity was collapsed and coded into four categories: White/Caucasian = 0, Hispanic/Latino(a) = 1, Black/African American = 2, and Other race/Multi-racial = 3. Dummy variables were also created for each race/ethnicity category for the purposes of the logistic regression analysis so that 0 = all others and 1 = the specified racial/ethnic group.

Primary Analysis

The purpose of this study was to examine the composition of students who received RTI interventions, determine if any groups were disproportionally represented, and explore if race/ethnicity, gender, or ELL status predicted the likelihood of a student's outcome at the end of the school year. Therefore, this quantitative research design consisted of both descriptive and correlational analyses.

Data Analysis for Research Questions

Research question 1. *In a school district known for its RTI implementation fidelity, what are the numbers of children that received interventions in regards to race/ethnicity, gender, and English Language Learner (ELL) status?*

 a. *Do similar results exist for each school year?*

This question was designed to describe the number of students who received targeted or intensive RTI interventions in regards to race/ethnicity, gender, and English Language Learner (ELL) status for each school year. The total number of K - 5th grade students within the district who received RTI interventions is provided in Table 3 and individual school level data are provided in Appendix C. Within the eight elementary schools, the percent ranges and medians for students receiving RTI interventions within each category are described in Table 4.

Table 4.

Percentage of Students that Received RTI Interventions among Elementary Schools

	2010-11		2011-12	
	Range	Median (%)	Range	Median (%)
Race/Ethnicity				
White/Caucasian	37-73%	54.5	53-70%	63
Hispanic/Latino(a)	12-47%	23	0-29%	19.5
Black/African American	8-33%	16	3-23%	13
Other/Multi-racial	0-10%	8	0-11%	5
Gender				
Males	52-82%	61	49-75%	61.5
Females	18-48%	39	25-51%	38.5
English Language Learner (ELL)	0-15%	7.5	0-13%	1.5

Chi-square tests of independence were conducted to determine if there were any significant differences between proportions of students receiving interventions in each variable category between the two school years (Howell, 2010). The results indicated no significant differences between school years (see Table 5).

Table 5.

*Comparison of Race/Ethnicity, Gender, ELL Status, and Outcome
Between 2010-11 and 2011-12 School Years*

	χ^2	df	*p*
Race/Ethnicity	4.289	3	.232
Gender	.185	1	.667
ELL	1.692	1	.193
Outcome	5.377	3	.146

Research question 2. *Are there statistically significant differences in the*

percentage of students receiving interventions for each group (race/ethnicity, gender, and

ELL status) compared to their overall percentage in the elementary school district

population for 2010-11 and 2011-12?

The second research question was designed to assess differences in the percentage

of students receiving interventions for each group (race/ethnicity, gender, and ELL

status) when compared to their overall percentage in the school and district populations.

To answer this, the Composition Index for each group was calculated by determining the

percentages for total number of students in each category (e.g., White, African American,

Hispanic, Other race/Multi-racial, male, female, ELL, and non-ELL) who received

interventions and comparing that to each group's percentage in the overall population

(Data Accountability Center, 2011).

These two percentages were compared using one-tailed tests of proportions

(Social Science Statistics, 2015) to determine if there was a statistically significant

difference at the .05 level between the two percentages (Skiba, Poloni-Staudinger,

Simmons, Feggins-Azziz, & Chung, 2005). Results indicated that there were

significantly more males and fewer females receiving interventions than would be

expected given their representation in the overall population for both school years (see

Table 6). Additionally, students from the Other/Multi-racial category were significantly

underrepresented in both school years ($z = -1.90$, $p = .029$; $z = -2.42$, $p = .008$) and

White/Caucasian students were overrepresented in 2011-12 ($z = 2.13$, $p = .017$). All

other groups of students receiving interventions were represented proportionally to the

overall population with no significant differences noted.

Table 6.

Composition Index for Race/Ethnicity, Gender, and ELL Status for Both School Years

	2010-11				2011-2012			
	RTI (%)	District (%)	*z*	*p*	RTI (%)	District (%)	*z*	*p*
Race/Ethnicity								
White/Caucasian	53	56	.67	.251	62	56	2.13	.017*
Hispanic/Latino(a)	26	22	1.38	.084	21	22	-.69	.245
Black/African American	15	12	.95	.171	11	12	-.15	.440
Other/Multi-racial	6	10	-1.90	.029*	6	10	-2.42	.008*
Gender								
Males	62	52	3.24	.0006**	60	52	2.57	.005*
Females	38	48	-3.24	.0006**	40	48	-2.57	.005*
ELLs	9	7	.90	.18	6	7	-1.11	.134

* p < .05, ** p < .001

A risk ratio (RR) is another common method of reporting disproportionality

within education and was examined for each of the variables using elementary school

district data. In order to calculate a risk ratio, a risk index must be computed first by

taking the number of students within a group receiving interventions and dividing that by

the total number of students within that group that are enrolled in the district (Data

Accountability Center, 2011). Risk ratios are provided as a way to compare the risk

indexes of two different groups and are commonly used in conjunction with the

Composition Index as a way to measure disproportionality (Bollmer et al., 2007; Howell, 2010; Hosp & Reschly, 2003).

For example, if the risk index for boys who received interventions was 5% and the risk index for girls who received interventions was 2%, the risk ratio would indicate that boys are 2.5 times more likely to receive interventions than girls (i.e., 5% divided by 2% = 2.5). Although there is no national guideline for what constitutes significant disproportionality, risk ratios of 2.0 and higher are indicative of overrepresentation of a particular group (Gibb & Skiba, 2008). Risk ratios of 1.0 indicate that students from that group are equally likely as all other students to receive RTI interventions, and a risk ratio of 0.5 indicates that students from that group would be half as likely as all other children to receive interventions. The risk indexes and ratios for each group are described in Tables 7 and 8, respectively.

Table 7.

Risk Indexes for Race/Ethnicity, Gender, and ELL Status for Both School Years

	2010-11	2011-12
Race/Ethnicity		
White/Caucasian	.061	.072
Hispanic/Latino(a)	.075	.059
Black/African American	.074	.063
Other/Multi-racial	.040	.035
Gender		
Males	.077	.074
Females	.050	.053
English Language Learners		
ELLs	.077	.048
Non-ELLs	.069	.065

Table 8.

Risk Ratios for Race/Ethnicity, Gender, and ELL Status for Both School Years

	2010-11	2011-12
Race/Ethnicity		
White/Caucasian	.92	1.33
Hispanic/Latino(a)	1.23	.90
Black/African American	1.19	.97
Other/Multi-racial	.59	.51
Gender		
Males	1.54	1.40
Females	.65	.71
English Language Learners	1.24	.73

The risk ratios for race/ethnicity were calculated using all other students excluding that category as a comparison group. For example, many of the race/ethnicity categories were close to 1.0, indicating that students from these race/ethnicity categories were equally likely to receive interventions when compared to all other students who did not belong to their racial/ethnic category. The exception were Other/Multi-racial students, who were about half as likely to receive interventions across both school years (RR = .59, .51). Males were about 1.5 times more likely in both school years to receive RTI interventions than females (RR = 1.54, 1.40), and ELLs were slightly more likely to receive RTI interventions in 2010-11 (RR = 1.24) than in 2011-12 (RR = .73).

Research question 3. *Was race/ethnicity, gender, and/or English Language Learner status a significant predictor of student outcomes at the end of the school years 2010-11 and 2011-12?*

The purpose of the third research question was to examine the relationship between each independent variable (i.e., race/ethnicity, gender, and/or English Language Learner status) and their individual and collective ability to predict the dependent

variable of student outcome status at the end of each school year. Due to the relatively small sample size within each elementary school, only the district numbers were used in this analysis to maximize the statistical power of the test. Results should be considered with caution because of the small percentage of students overall in the district who were receiving interventions.

A logistic regression analysis was then used to determine if race/ethnicity, gender, and ELL status were predictive of outcome status at the end of each school year (Howell, 2010; Skiba et al., 2005). The assumptions of observations being independent and independent variables being linearly related to the log were tested and met. The assumption of absence of multicollinearity was also tested and met. Comparison groups for each of the variables included White/Caucasian (race/ethnicity), males (gender), and non-ELLs (ELL status). Three separate logistic regression analyses were conducted using the same predictor variables with each outcome (e.g., continue in RTI, special education, and discontinue RTI). These analyses were conducted separately for each school year.

Outcome 1: Special education placement. Of the 247 students receiving RTI interventions in 2010-11, a total of 42 students were placed into special education at the end of the school year. When all five variables were considered together for this school year, prediction of placement in special education was statistically significant, $\chi^2 =$ 13.652, $df = 5$, $n = 247$, $p = .018$. When variables were considered individually, only Hispanic/Latino(a) was a significant predictor ($B = 1.37$, $p = .001$). Table 9 provides the regression coefficients, standard error, p value, and odds ratios (OR) for each of the

independent variables, which are similar to relative risk ratios and indicate the probability of one group's outcome when compared to the reference group. In 2010-11, the odds of Hispanic/Latino(a) students being placed in special education were about four times higher than White/Caucasian students (OR = 3.92) and the odds of ELL students being placed in special education was much lower than non-ELL students (OR = .22). The model explained 9% (Nagelkerke R^2) of the variance in special education placement and correctly classified 83% of the cases.

Of the 253 students receiving RTI interventions in 2011-12, a total of 35 students were placed into special education at the end of the school year. When all five variables were considered together for this school year, prediction that a student would be placed in special education was not statistically significant, $\chi^2 = 5.902$, $df = 5$, $n = 253$, $p = .316$. When considered individually, gender was identified as a significant predictor $(B = -.871$, $p = .043)$. The odds of female students being placed in special education was about half that of males (OR = .42). The model explained 4% (Nagelkerke R^2) of the variance in special education placement and correctly classified 86% of the cases.

Table 9.

Logistic Regression Predicting What Students will be Placed in Special Education

Variable	B	S.E.	p	Odds Ratio
2010-2011				
Race/Ethnicity				
Hispanic/Latino(a)	1.37	.409	.001*	3.92
Black/African American	.58	.499	.245	1.79
Other/Multi-racial	-.602	1.07	.574	.55
Gender	.11	.362	.758	1.12
English Language Learners (ELL)	-1.52	.802	.058	.22
2011-2012				
Race/Ethnicity				
Hispanic/Latino(a)	-.191	.516	.712	.83
Black/African American	-.112	.588	.849	.89
Other/Multi-racial	-.397	1.09	.716	.67
Gender	-.871	.431	.043*	.42
English Language Learners (ELL)	-.601	1.12	.591	.55

*p < .05

Note: The dependent variable in this analysis is special education outcome so that
0 = was not placed in special education and 1 = was placed in special education

Outcome 2: Continue RTI interventions. Of the 247 students receiving RTI

interventions in 2010-11, a total of 146 students continued receiving RTI interventions at

the end of the school year. When all five variables were considered together, they did not

significantly predict that a student would continue RTI interventions at the end of the

year, $\chi^2 = 6.926$, *df* = 5, *n* = 247, *p* = .226). When variables were considered individually,

only Hispanic/Latino(a) was a significant predictor (*B* = -.784, *p* = .022), with

Hispanic/Latino(a) students being about half as likely to continue with RTI interventions

than White/Caucasian students (OR = .46). The model explained 4% (Nagelkerke R^2) of

the variance in special education placement and correctly classified 60% of the cases.

Of the 253 students receiving RTI interventions in 2011-12, a total of 172

students continued receiving RTI interventions at the end of the school year. The model

explained 3% (Nagelkerke R^2) of the variance in continued RTI placement and correctly

classified 68% of the cases. When considered collectively and individually, none of the

independent variables were significant predictors of continuing with RTI interventions at

the end of the year, $\chi^2 = 5.892$, $df = 5$, $n = 253$, $p = .317$). According to the odds ratios,

Hispanic/Latino(a) students were twice as likely to continue with RTI interventions as

their White/Caucasian counterparts (OR = 2.05). Table 10 provides the regression

coefficients, standard error, p value, and odds ratios for each of the independent

variables.

Table 10.

Logistic Regression Predicting What Students will Continue RTI Interventions

Variable	B	SE	p	Odds Ratio
2010-2011				
Race/Ethnicity				
Hispanic/Latino(a)	-.784	.341	.022*	.46
Black/African American	-.325	.385	.399	.72
Other/Multi-racial	-.533	.551	.333	.59
Gender	-.133	.272	.625	.89
English Language Learners (ELL)	-.053	.506	.917	.95
2011-2012				
Race/Ethnicity				
Hispanic/Latino(a)	.719	.406	.077	2.05
Black/African American	.031	.428	.942	1.03
Other/Multi-racial	-.171	.616	.781	.84
Gender	.410	.291	.158	1.51
English Language Learners (ELL)	-.198	.670	.768	.82

*p < .05
Note: The dependent variable in this analysis is Continue RTI outcome so that
0 = did not continue with RTI interventions and 1 = did continue with RTI interventions

Outcome 3: Discontinue RTI interventions. Of the 247 students receiving RTI

interventions in 2010-11, a total of 26 students discontinued RTI interventions at the end

of the school year, indicating they no longer needed targeted academic or behavioral

support. When all five variables were considered both collectively and individually, none

of the variables were significant predictors of discontinuing RTI interventions at the end

of the year, $\chi^2 = 4.897$, $df = 5$, $n = 247$, $p = .429$. ELL students were about four times more likely than a non- ELL student to discontinue RTI interventions at the end of the year (OR = 3.99). The model explained 4% (Nagelkerke R^2) of the variance in special education placement and correctly classified 90% of the cases.

Of the 253 students receiving RTI interventions in 2011-12, a total of 25 students discontinued RTI interventions at the end of the school year. The model explained 6% (Nagelkerke R^2) of the variance in continued RTI placement and correctly classified 90% of the cases. When considered collectively and individually, none of the independent variables were significant predictors of continuing with RTI interventions at the end of the year, $\chi^2 = 7.554$, $df = 5$, $n = 253$, $p = .183$. However, Hispanic/Latino(a) was close to being a significant predictor ($B = -2.188$, p = .053). According to the odds ratios, Hispanic/Latino(a) students were much less likely to discontinue with RTI interventions as their White/Caucasian counterparts (OR = .41) and English language learners were almost 2.5 times more likely to discontinue as non-ELLs (OR = 2.43). Table 11 provides the regression coefficients, standard error, p value, and odds ratios for each of the independent variables.

Table 11.

Logistic Regression Predicting What Students will Discontinue RTI Interventions

Variable	*B*	SE	*p*	Odds Ratio
2010-2011				
Race/Ethnicity				
Hispanic/Latino(a)	-.885	.685	.196	.41
Black/African American	.009	.605	.988	1.0
Other/Multi-racial	.641	.719	.373	1.9
Gender	.031	.432	.943	1.03
English Language Learners (ELL)	1.385	.758	.068	3.99
2011-2012				
Race/Ethnicity				
Hispanic/Latino(a)	-2.188	1.132	.053	.11
Black/African American	.126	.597	.833	1.13
Other/Multi-racial	-.958	1.194	.422	.384
Gender	.289	.438	.510	1.34
English Language Learners (ELL)	.888	1.277	.487	2.43

Note: The dependent variable in this analysis is Discontinue RTI outcome so that
0 = did not discontinue RTI interventions and 1 = discontinued RTI interventions

Chapter Five: Discussion

The three research questions included in this study aimed to enhance the literature on disproportionality within an RTI framework. Given that RTI is a relatively new service delivery model within public education, much of the literature on disproportionality thus far has focused on race/ethnicity and gender disparities within special education. This study examined the presence of disproportionality among race/ethnicity, gender, and ELL status for students who received targeted and intensive interventions within a school district known for its RTI implementation fidelity across two consecutive school years. It also examined if any of these variables were predictors in determining student outcomes at the end of the school year, such as continuing with RTI interventions, placement in special education, or discontinuation of RTI interventions. In Chapter 5, a summary of the results is presented as well as a discussion of how these results compare with the theoretical purposes and outcomes of a Response to Intervention framework. Implications for future research as well as limitations to the study are also addressed.

Summary of Findings

The first research question described the students who received RTI interventions across two school years. In the overall elementary population, only 6.4% of students received RTI interventions in both 2010-11 and 2011-12. This is a relatively small percentage given that RTI is theoretically designed to serve around 15-20% of the student

population for the students who need targeted and intensive support (Gresham, 2007; Hosp, n.d.). Across individual elementary schools, there was some variance in the types of students who received intervention, particularly with gender. School B had the highest male percentage when compared to other schools for 2010-11 and Schools B and H both had higher male percentages for 2011-12 than the other elementary schools. The chi-square test that compared the variables for RTI students across both school years was not significant, indicating that the composition of the students who received interventions district-wide remained fairly constant from one year to the next and there were likely no dramatic changes to the district's RTI processes during this time that might have impacted the results of the inferential analyses.

The second research question focused on disproportionality within race/ethnicity, gender, and ELL status for students who received RTI interventions. The two most common methods for calculating and reporting disproportionality include using the composition index, which compares the percentage of students in a specific group to their percentage in the overall population, and the risk ratio which provides a likelihood that one group will receive interventions over another group of students (Data Accountability Center, 2011; The Equity Project, n.d.; Skiba et al., 2008). According to the several tests of proportions that were completed at the district level for each of these variables, there was some evidence of disproportionality. White/Caucasian students were overrepresented in 2011-12 and Other/Multi-racial students were underrepresented for both school years. Specifically, Other/Multi-racial students were .51 to .59 times as likely to receive interventions as all other children.

For both school years, males were significantly overrepresented and females were underrepresented, which is consistent with decades of research on gender disproportionality in special education. Historically, boys tend to be at higher risk for being placed in more restrictive settings than their female classmates (Coutinho & Oswald, 2005). The risk ratios for 2010-11 and 2011-12 indicated that boys were 1.4 to 1.5 times more likely to receive RTI interventions than girls. English language learners receiving RTI interventions were proportionately represented for both school years.

The third research question asked if any of the variables were significant predictors of student outcome at the end of each school year. Examining race/ethnicity, gender, and ELL status as predictors of outcome for students can serve as either support for or against the theory that RTI was designed to remediate the issue of disproportionality within special education. It may also provide valuable insight into the RTI process itself in terms of what variables might predict if a student continues with interventions or makes sufficient growth and no longer requires intervention.

The six logistic regression analyses conducted for each school year and each outcome (special education, continue RTI, and discontinue RTI) showed that only a few of the variables could be considered significant predictors. Hispanic/Latino(a) students were about four times more likely to be placed in special education in 2010-11 than White/Caucasian students and about half as likely to continue RTI interventions for that school year. Although it was not a significant predictor for 2011-12, Hispanic/Latino(a) students were about two times more likely to continue RTI interventions at the end of the year and were much less likely to discontinue RTI interventions. Gender was a

significant predictor in 2011-12, with females being about half as likely to be placed in special education than males, but was not a predictor for the remaining outcomes indicating that males and females were equally likely to continue or exit from RTI interventions. ELL status was also non-significant as a predictor for any of the outcomes; however, the odds of an ELL student being placed in special education were much lower than a non-ELL student and ELL students were 2.5 to 4 times more likely to discontinue RTI interventions than non-ELL students across the school years.

Conclusions

Based on the results of this study, it can be inferred that an RTI framework implemented within a small school district with a high level of fidelity does seem to decrease the amount of disproportionality among certain racial/ethnic groups and ELLs. Students who identified as Other/Multi-racial appeared to be under-represented overall within the RTI framework of this district, which is consistent with special education research pertaining to the underrepresentation of Asian populations within the United States (Fergus, 2010; Finn, 1982; Hosp & Reschly, 2003; Hosp & Reschly, 2004, National Education Association, 2007; Skiba et al., 2008). All other racial/ethnic groups were proportionately represented with the exception of White/Caucasian students who were overrepresented in the 2011-12 school year. These results are incongruent with disproportionality data within special education, which historically has leaned towards an overrepresentation of minority groups in special education, particularly within specific disability categories (Sullivan et al., 2009).

Recent research has challenged the idea that minority students are overrepresented in special education. Morgan et al. (2015) used a statistical technique known as hazard modeling, which controlled for various factors such as socioeconomic status, marital status, health insurance, academic achievement, and behavioral functioning. Findings from that study concluded that when examining students who were similar in all other aspects besides race/ethnicity, minority students were actually less likely to receive special education support than White, English speaking students.

However, as Cohen et al. (2015) point out, race/ethnicity is a complicated subject and one in which "minority status in America cannot be separated from risk that arises from a history of segregation, oppression, low expectations, and differential educational experiences, all of which have significant impact on behavior and academic performance" (p. 22). Some of the factors used in the analysis, such as SES, race, and achievement have previously been shown to have strong relationships with each other. Consequently, while the statistical analyses show underrepresentation of racial/ethnic minority groups of students in special education, it is difficult to conclude that they are also reflective of the actual modern day experiences of students of color (Cohen et al., 2015).

Public education, particularly in a nation that is as diverse and multi-faceted as the United States, must a) be sensitive to and aware of the overarching cultural system in which they are educating students and b) strive to find more objective and culturally responsive ways of identifying children in need of support. When implemented with fidelity, RTI is considered to reduce disproportionality and cultural bias within special

education identification (Cohen et al., 2015; Proctor, Graves, & Esch, 2012). This current study provides support for the hypothesis that an RTI framework leads to more proportionate amounts of minority children receiving intervention for areas of need; however, once students received RTI interventions, the risk for Hispanic/Latino(a) students to then be placed in special education tended to be higher than any other racial/ethnic group for 2010-11. Hispanic/Latino(a) students were also much less likely to exit from RTI interventions than other students for both school years, which might imply that considerations and/or adjustments should be made at the district level around culturally responsive interventions and family-school partnering with this group of elementary students.

The lack of disproportionality among ELL students implies that language is not the primary barrier in effectively servicing Hispanic/Latino(a) students for this school district. Research on disproportionality among ELLs has shown mixed results, with both under and over representation for this group within special education nationally as well as at the state and district levels (Artiles et al., 2002; Linn & Hemmer, 2011; Zehler et al., 2003). Sullivan (2011) employed correlational analyses and multiple linear regressions to explore if relationships existed between one school district's disproportionality data and predictors of special education placement. Her results were consistent with the current study's findings and indicated that ELLs were less likely to demonstrate disproportionality within special education in districts that had relatively large proportions of ELL students. Zehler et al. (2003) also found this to be true, with districts

identifying significantly more ELL students for special education when they had less than 100 ELL students represented in their district.

Unfortunately, boys continued to be at higher risk in this study for both receiving RTI interventions and placement within special education while girls continued to be underrepresented in both systems. Since this data were collected, the state of Colorado has shifted from an RTI framework to a Multi-Tiered System of Support (MTSS) model, which provides an emphasis on prevention efforts and includes both academic and behavioral supports at varying levels of intensity (Center on Response to Intervention, 2013; Colorado Department of Education, 2014). It is possible that with the newer guidelines and emphasis on behavioral support, this could help to address the gender disproportionalities that continue to exist within both RTI and special education. As Waitoller, Artiles, & Cheney (2010) state, "Response to intervention (RTI) and schoolwide positive behavior support (SWPBS) may be the first steps toward policy and practice agendas that target schools' capacity to provide learning opportunities to *all* students" (p.44).

Limitations

Limitations must be taken into consideration when interpreting the results of this study. One of the bigger limitations is that only a comparison, rather than a connection, can be made between school years. Because the archival data set did not include any identifying information, it was not possible to link the two years of data together and longitudinally analyze the trajectory of individuals over the course of time. Being able to do this may have provided valuable insight into the interpretation of student outcomes at

the end of the year. It would be helpful to analyze if there were characteristics of students that predicted changes over time in regards to the level of intervention and support they received; however, the list of possible analyses that could be conducted were limited due to the nature of the dataset. Having to collapse the race/ethnicity data also made it difficult to generalize findings regarding the Other/Multi-racial group that was underrepresented for both school years.

The other major limitations of this study relate to the characteristics of the school district itself. RTI implementation fidelity was measured using rubrics that district representatives scored based on their knowledge of the RTI process in the district as a whole. It would be beneficial to have a team from each elementary school complete the rubrics as well to gain a more comprehensive picture of the RTI process at the individual school level. Having an outside representative rate the district's implementation fidelity and comparing that to district representative's ratings could also provide more accountability in terms of inter-rater reliability measures.

The small number of students overall in the district that received RTI interventions was a limitation in that 6% of students district-wide receiving support is more representative of a teacher referral model, which is primarily what this district used to refer students to the Problem-Solving teams in addition to classroom assessment data. Ideally, RTI implementation would include both norm referenced and criterion referenced assessment tools, including universal screening measures administered at least three times a year to identify students in need of support (Gresham, 2007; Johnson, Mellard, Fuchs, & McKnight, 2006). In an RTI framework, universal screening should

be the primary tool that drives data based decision-making regarding intervention and progress monitoring. If this component is not firmly implemented, it is difficult to make conclusions about disproportionality when the primary method for identifying students remains a subjective process.

Another possible concern for this school district in relying so heavily on teacher referral is that the district has a large military presence, possibly indicating a large transient rate among its families. Due to the large amount of teacher investment that is needed when referring students to problem-solving teams, teachers may have been hesitant to refer students who enrolled mid-year, lacked assessment data from their previous school, or who were known to be moving again in the near future. Currently, with recent legislation towards educator effectiveness ratings and pay-for-performance review systems, many educators have conflicted feelings regarding how data may or may not be used against them professionally. This fear that data could be used as a weapon instead of a tool to support professional growth is unfortunate because it might make some educators more reluctant to gather assessment data that would otherwise be useful in identification of students for RTI support.

The small sample size was another limitation of this study, which created a "rare event" for being placed in the RTI intervention group indicating that caution needs to be taken when interpreting the logistic regression results. A small sample size could make finding significant results more difficult than had it been a larger sample size. It is possible that in a larger district with higher numbers of students receiving RTI

interventions, some of the independent variables might be significant predictors of outcome that were not found significant in this study.

Because the school district was relatively small compared to other urban/suburban districts, RTI implementation may look differently for a larger district that has more students and variability within the student population. While some districts have ample support for professional development opportunities, others struggle to effectively communicate systems level changes to their schools. Also, only elementary schools were examined in this study, which limits the ability to draw inferences about disproportionality among middle and high school students who receive RTI interventions.

Implications for Future Research

There are numerous opportunities for future researchers to expand upon the issues of disproportionality within an RTI framework. Comparing RTI to an MTSS model of service delivery would allow researchers to examine if an emphasis on behavioral support in addition to academic support helps to reduce disproportionately represented groups of students. Future research should also continue to focus on the causes and possible solutions to the gender gap between boys and girls who receive more intensive support than their peers. One of the limitations of this study was that it only examined disproportionality at the elementary school level. It would be beneficial to explore what RTI implementation at the middle and high school level looks like for different groups of students and if the magnitude of disproportionality changes from primary to intermediate school systems.

Ultimately, the goal of RTI is to improve student achievement by allowing access to intervention and support within the general education setting. It is extremely difficult for school districts to implement RTI with a high degree of fidelity in all areas due to a myriad of reasons. To better understand those barriers, it would be valuable to gather qualitative data from key stakeholders at the elementary and secondary levels regarding their perceptions of the RTI process in each of the six domains outlined in the CDE RTI framework. Having longitudinal data on students who receive RTI interventions would also be helpful in assessing the effect of RTI on disproportionality over time. Disproportionality is a multi-faceted issue that exists within the larger social, economic, and political contexts of the United States. With the current local and national conversations around disproportionality, it is more important than ever to continue adding to this body of research so that informed policies can be made and funding can be used effectively to enhance academic achievement for all students.

The purpose of this study was to examine if disproportionate representation existed among groups of students who received RTI interventions as well as to determine if race/ethnicity, gender, or ELL status had a significant association with student outcome at the end of the year. While the results are encouraging in some regards, they are also a reminder that we must always be cognizant of the systems in which we serve and educate our children (Sullivan, Artiles, & Hernandez-Saca, 2015). In the same way teachers are required to progress monitor their students' response to interventions, educators, administrators, and school psychologists should also be continually assessing the effectiveness of the service delivery models they promote. As Skiba et al. (2005) state,

"To better understand and especially address the causes of ethnic disproportionality, it is critical that efforts continue to be made to identify both the individual *and* the systemic factors that create and maintain educational inequity" (p.142). This includes providing strong leadership, professional development, and resources to support best practices in RTI implementation for all schools so that, eventually, something as simple and complicated as our children's gender or the color of their skin will not necessarily determine the course of their educational outcomes.

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Appendix A: Data Collection Form

RtI Referral Data

School: _____   School Year: _____

Student	Grade	Sex	Age	Ethnicity	ELL? (yes/no)	Retained? (yes/no)	Military? (yes/no)	Outcome (SPED, continue RTI, or exit RTI)	Area of specific concern for referral (circle all that apply)
1									Reading Writing Math Behavior-externalizing Behavior-internalizing
2									Reading Writing Math Behavior-externalizing Behavior-internalizing
3									Reading Writing Math Behavior-externalizing Behavior-internalizing
4									Reading Writing Math Behavior-externalizing Behavior-internalizing
5									Reading Writing Math Behavior-externalizing Behavior-internalizing

Appendix B: Colorado Department of Education District RTI Implementation Fidelity Rubric

RtI IMPLEMENTATION RUBRIC:
DISTRICT-LEVEL

D

The *RtI Implementation Rubrics* are a set of rubrics that serve as an overview of implementation for Response to Intervention (RtI). Rubrics are available for the classroom, school, and district level. Each rubric describes what RtI looks like across the 6 components of RtI *(i.e., problem solving, curriculum & instruction, assessment, leadership, family & community partnering, positive school climate)* and across 4 growth stages *(i.e., emerging, developing, operationalizing, optimizing)*.

The purpose of the rubrics is to:
1. serve as an informational resource (i.e., blueprint, roadmap of RtI implementation)
2. measure fidelity of RtI implementation
3. assist with planning for an action plan or school improvement plan

Growth stages:

Emerging- The goal of this stage is to build consensus and buy-in for RtI implementation.

Developing- This stage involves designing the infrastructure to implement RtI.

Operationalizing- During this stage, the school implements the structures that were designed during the Developing stage and works to build consistency and fidelity.

Optimizing- Within this stage, the model is embedded and done with fidelity. Schools now focus on how effective the model is and make changes based on data to ensure it is effective.

Each component has a list of anchors & guiding questions on the far left column. For the sake of consistency, each component has the same three anchors:

Structures- The pieces of an RtI model that are static and do not necessarily change (e.g., structure of a team).

Processes and Procedures- The pieces of an RtI model that are fluid and involve interactions among the structures.

Professional Development- The skills taught to staff and how the skills are monitored and used.

Directions:
1. Determine if you're going to focus on one component, several, or all of them.
2. Read the rows and columns to get a sense of the scope of the component.
3. Using existing data, work your way through the rubric and highlight or circle the cells that describe your site.
4. Once you have completed a rubric, write that growth stage your site is in on the *Scoring Summary*.
5. Identify desired level of implementation.
6. Compare the gap between desired level and current level.
7. Create an action plan for next steps.
8. Check on progress throughout the school year.

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LEADERSHIP

Leadership refers to the activities of leaders, and includes:
- creating a clear vision and commitment to the RtI process
- inspiring, facilitating, & monitoring growth & improvement, along with holding high standards for everyone
- promoting the essential components of RtI & the significant systemic changes needed to implement RtI with fidelity
- committing resources, time, & energy to building capacity & sustaining the momentum needed for change
- supporting collaborative problem-solving approaches with colleagues, families, learners, & community members to build partnerships

Key Anchors and Guiding Questions:	Emerging:* Establishing Consensus	Developing: Building Infrastructure	Operationalizing: Gaining Consistency	Optimizing: Innovating and Sustaining
Structures: 1. *How is a district leadership team formed?*	District personnel discuss the need for a change in practices. An understanding of RtI's rationale, definition, and general education purpose is understood.	A district leadership team and/or coordinator is formed that is responsible for scaling up RtI. Duties include, but aren't limited to: • building understanding of the need for RtI across district • identifying funding sources and budget allocation • aligning initiatives with RtI • coordinating PD • outlining roles of principals, supervisors, office admins & support staff	Leadership team meets on a regular basis and works through the action plan or goals of district-level RtI implementation. Team works with stakeholders, schools, and families to achieve goals.	Leadership team is continually refining RtI implementation as it analyzes data from students, families, and schools on the model's effectiveness.
2. *How is a vision and commitment to RtI created?*	District administrators understand the need for RtI and understand it is a 3-5 year implementation process.	District administrators, faculty, and families draft a vision statement for RtI implementation. The district commits to a three-tiered model of academics, behavior, and social-emotional support for all students.	District administrators and faculty: • share the mission statement • align district policies with the RtI vision to support student success • implement and support RtI district-wide	Administrators, faculty, and families actively participate in a systemic, culturally-responsive RtI model. Data on its effectiveness is regularly analyzed to improve RtI implementation and effectiveness.
Processes and Procedures: 3. *How does the district support the changing roles of professionals?*	District stakeholders and departments examine current roles and job descriptions. They discuss foreseeable changes in roles that coincide with RtI.	Leadership team: • modifies or creates jobs to support RtI implementation, such as an RtI coordinator, data specialist, etc • develops avenues for schools to understand their role change, such as Communities of Practice	Leadership team and district stakeholders work with schools to support and embrace new roles.	New roles and job duties are firmly established and part of the routine.

*Each phase of implementation includes and extends the prior phase.

RtI IMPLEMENTATION RUBRIC: *DISTRICT-LEVEL*

LEADERSHIP

Leadership refers to the activities of leaders, and includes:
- creating a clear vision and commitment to the RtI process
- inspiring, facilitating, & monitoring growth & improvement, along with holding high standards for everyone
- promoting the essential components of RtI & the significant systemic changes needed to implement RtI with fidelity
- committing resources, time, & energy to building capacity & sustaining the momentum needed for change
- supporting collaborative problem-solving approaches with colleagues, families, learners, & community members to build partnerships

Key Anchors and Guiding Questions:	Emerging:* Establishing Consensus	Developing: Building Infrastructure	Operationalizing: Gaining Consistency	Optimizing: Innovating and Sustaining
Structures: 1. *How is a district leadership team formed?*	District personnel discuss the need for a change in practices. An understanding of RtI's rationale, definition, and general education purpose is understood.	A district leadership team and/or coordinator is formed that is responsible for scaling up RtI. Duties include, but aren't limited to: - building understanding of the need for RtI across district - identifying funding sources and budget allocation - aligning initiatives with RtI - coordinating PD - outlining roles of principals, supervisors, office admins & support staff	Leadership team meets on a regular basis and works through the action plan or goals of district-level RtI implementation. Team works with stakeholders, schools, and families to achieve goals.	Leadership team is continually refining RtI implementation as it analyzes data from students, families, and schools on the model's effectiveness.
2. *How is a vision and commitment to RtI created?*	District administrators understand the need for RtI and understand it is a 3-5 year implementation process.	District administrators, faculty, and families draft a vision statement for RtI implementation. The district commits to a three-tiered model of academics, behavior, and social-emotional support for all students.	District administrators and faculty: - share the mission statement - align district policies with the RtI vision to support student success - implement and support RtI district-wide	Administrators, faculty, and families actively participate in a systemic, culturally-responsive RtI model. Data on its effectiveness is regularly analyzed to improve RtI implementation and effectiveness.
Processes and Procedures: 3. *How does the district support the changing roles of professionals?*	District stakeholders and departments examine current roles and job descriptions. They discuss foreseeable changes in roles that coincide with RtI.	Leadership team: - modifies or creates jobs to support RtI implementation, such as an RtI coordinator, data specialist, etc - develops avenues for schools to understand their role change, such as Communities of Practice	Leadership team and district stakeholders work with schools to support and embrace new roles.	New roles and job duties are firmly established and part of the routine.

*Each phase of implementation includes and extends the prior phase.

Key Anchors and Guiding Questions:	Emerging: Establishing Consensus	Developing: Building Infrastructure	Operationalizing: Gaining Consistency	Optimizing: Innovating and Sustaining
4. How does district leadership use the PS process to examine their current practice?	District examines district's history of performance across academics, behavior, and social-emotional skills. District personnel understand the need to change systems and practices in order to improve outcomes.	District examines and identifies areas needed for improvement in terms of academics, social-emotional skills, and behavior. The district outlines a plan to improve outcomes at the district level.	District implements plan for improvement. Continually examines district performance relative to criteria for universal, targeted, and intensive tiers. Aims to close gap.	Assessment, curriculum, instruction, and results are analyzed in an ongoing manner in order to ensure effectiveness of model.
5. How are collaborative consultants used?		District examines current consultation and collaborative practices between the district and schools to identify areas for improvement.	District identifies a plan to provide training and coaching on the PS model to schools and PS teams.	District provides ongoing training on the PS model and provides assistance to teams to increase functionality of PS teams.

*Each phase of implementation includes and extends the prior phase.

PROBLEM-SOLVING

The Problem-Solving process (PS) is a 4-step model used to solve identified concerns. Within this culturally-responsive approach, educators, families, and students collaboratively work together in order to:
1. Define the problem *(What is the problem?)*
2. Analyze contributing factors to the problem *(Why is it occurring?)*
3. Develop a plan, monitor its implementation, and adjust the plan as needed *(What can be done to solve it?)*
4. Evaluate the effectiveness of the plan. *(Did it work?)*

Key Anchors and Guiding Questions:	Emerging: Establishing Consensus	Developing: Building Infrastructure	Operationalizing: Gaining Consistency	Optimizing: Innovating and Sustaining
Structures: 1. *How are teams formed to meet the needs of PS?*	District administrators are committed to using student-centered data on academics, behavior, and social-emotional skills to guide important educational decisions.	Collaborative, cross-departmental and district-wide teams are formed for the purpose of data-driven dialogue.	Data dialogue meetings are scheduled at regular intervals to analyze assessment data at the district, school, and grade levels in order to evaluate the effectiveness of curriculum and instruction.	
2. *How is documentation of the PS process ensured?*	District examines current documentation processes.	District identifies parameters or provides forms for schools to use to document the PS process.	The district provides training and guidance for use with the forms. District works with schools to gain consistency with forms and documentation.	The district examines efficiency and ease of use of forms. Forms are updated and adjusted as needed.
Processes and Procedures: 3. *How is support with the PS model provided to sites?*	District personnel understand and embrace: - the problem-solving model - the need to change systems to create more positive outcomes for students and teachers - the difference between problem-solving for individual students vs. for group/school-level	District outlines a plan: - to provide support to PS teams for purpose of individual problem-solving vs. group PS - for accessing district-level support for individual students - for a consultation model or regional contacts for support - to examine performance of schools at the school & grade/content level to identify targeted support	District provides support to schools for PS for individual students and group PS, which includes: - technical assistance - ongoing coaching by consultants - access to district-level resources - guidance on procedures - identifying ways to improve outcomes of schools who need support - training on programs & instructional practices	District regularly works with schools in order to ensure schools are meeting performance benchmarks. District personnel analyze data to adjust support provided to schools.

*Each phase of implementation includes and extends the prior phase.

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RtI IMPLEMENTATION RUBRIC: *DISTRICT-LEVEL*

ASSESSMENT

Assessment is the ongoing process of gathering information to make educational decisions for both academics and behavior. A complete assessment system within RTI enables educators to (1) screen students to identify those at risk, (2) use diagnostic assessments to determine factors contributing to at-risk status, (3) use formative assessments (progress monitoring) to monitor the effects of instruction, and (4) use summative assessments to make outcome-based decisions about mastery of skills and standards.

Key Anchors and Guiding Questions:	Emerging: Establishing Consensus	Developing: Building Infrastructure	Operationalizing: Gaining Consistency	Optimizing: Innovating and Sustaining
Structures: 1. How are assessment tools understood and selected by district personnel?	District personnel learn and understands the 4 *assessment purposes* within an RTI framework: (1) *universal screening & benchmarking* (2) *diagnostic/prescriptive assessment* (3) *formative evaluation* (4) *summative evaluation*	District outlines parameters or generates a list of measures for each of the 4 assessment purposes for all content areas, and for social-emotional and behavioral skills. Selected tools are reliable, valid, accessible, and culturally, linguistically, and developmentally appropriate .	District provides ongoing support and training to schools, with the goal of building fidelity and consistency with the use of the tools.	District personnel collect data to ensure the tools are used appropriately and with fidelity. Changes to assessment tools are made when data dictate.
2. How are assessment tools aligned with instructional practices?	District identifies the extent that: • current assessment tools align with instructional practices • current assessment data is used to inform instruction	District outlines how selected assessments tools align with universal, targeted, and intensive instruction.	District personnel provide training and support to ensure schools use assessment tools appropriately and follow the alignment between the 4 assessment purposes and instruction.	The alignment of instruction and assessment is regularly reviewed as part of a continuous improvement cycle to ensure assessment effectively informs instruction.
3. How is the data stored and accessed by schools and district personnel?	District examines current data management systems in relation to their needs.	The district selects or refines the current data management system to manage academic, social-emotional, and behavior data. The system has the ability to display data in a graphical form.	District personnel and schools regularly access and use the current data system. District provides ongoing training and support to schools to ensure the system is used accurately.	District analyzes the efficiency and usefulness of the current data-management system to ensure it is appropriate and useful.
Processes & Procedures: 4. How is a decision-making protocol outlined or created for schools?	District personnel understand the fluidity of an RtI model and examine possible decision-making protocols and guidelines.	District creates a *decision-making protocol* for the tiers or outlines parameters for schools to create one that addresses: • screening & use of diagnostic assessments • frequency of progress monitoring in relation to intensity of instruction • criteria for receiving instructional tiers	District provides support to schools to ensure they are using the district's protocol or developing protocols that are within the parameters of the district's guidelines.	The district refines its protocol or its parameters as data and the needs of schools indicate. The parameters or protocol is evaluated for efficiency and effectiveness.

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*Each phase of implementation includes and extends the prior phase.

CURRICULUM AND INSTRUCTION

A curriculum is an organized plan designed to meet or exceed state standards, and instruction is designed to support the mastery of these goals. High quality district curricula: (a) embodies 21st century skills, (b) is comprehensive, ensuring, at a minimum, access to all discipline areas specified in state legislation, (c) is connected within and across content areas, (d) is relevant and applicable, and (e) is guaranteed, viable, and appropriate for the instructional level of each individual student.

Key Anchors and Guiding Questions:	Emerging: Establishing Consensus	Developing: Building Infrastructure	Operationalizing: Gaining Consistency	Optimizing: Innovating and Sustaining
Structures: *1. How does the district ensure standards based curriculum in all content areas for all students?*	District personnel examine current curriculum in relation to state standards.	District personnel identify curricular needs and identify a team/personnel to support schools with their curricular needs. District ensures that curricula: • has a defined connection to state standards • addresses all content areas • embodies 21st century skills • has equitable access	District personnel provide ongoing training and support to schools to ensure they are implementing appropriate curricula	District reviews and adjust curricula based on data indicating its effectiveness and appropriateness.
2. How is a 21st Century being designed?	District personnel: • take stock on current practices • build consensus for possible changes of practices • identify areas for improvement	District personnel: • outline effective practices for schools to adopt and use at universal, targeted, & intensive tiers • define procedures for examining and collecting data on instructional practices • establish policies that reinforce use of research-based strategies • outline the expected features of instruction, and how that instruction looks at all tiers	District provides assistance and feedback as schools implement effective instructional practices. District provides routine coaching and feedback to ensure schools are using effective instructional practices.	District works with schools to adjust and update instructional practices to ensure all students receive high-quality instruction based on data indicating effectiveness of current instruction.
Process: *3. How is the district ensuring a 21st Century Learning System is being established and supported within schools?*	District personnel identify current practices being used related to academic, behavior, and social-emotional skills.	District examines schools and relevant information to identify areas of strength and areas to support for schools as they build 21st Century Learning Systems.	District provides differentiated support to schools, based on areas identified during the previous growth stage.	District routinely analyzes how each school is performing and its structure of a 21st Century Learning System. The district routinely uses a continuous improvement cycle to provide support to schools.

*Each phase of implementation includes and extends the prior phase.

POSITIVE SCHOOL CLIMATE

A positive school climate is an environment that is proactive, safe, and culturally responsive. It is built upon a caring school community that welcomes, honors, supports, and builds relationships with diverse learners and families to increase academic and social emotional outcomes for all.

-Schools implementing Positive Behavioral Interventions and Supports with the Colorado initiative will continue to utilize the Benchmarks of Quality (BoQ) and/or the School-wide Evaluation Tool (SET) to measure implementation fidelity.

Key Anchors and Guiding Questions:	Emerging: Establishing Consensus	Developing: Building Infrastructure	Operationalizing: Gaining Consistency	Optimizing: Innovating and Sustaining
Structures: 1. *How is a district-team established to support implementation of positive school climates within schools?*	District analyzes current district and school climate and identifies the need for a change in climate. District examines context of schools and identifies areas for improvement.	District develops a representative leadership team to support positive school climate practices. Team has representation from various stakeholders and establishes a regular meeting schedule.	Team meets monthly and follows schedule and meeting processes. Team has capacity to: • provide technical and behavioral assistance • modify policies to support positive school climates • put policy into practice • manage day-to-day operations • be updated quickly on implementation outcomes	The team functions smoothly and uses data from the field to adjust its roles and support to schools.
	District identifies the various roles needed for district implementation of positive school climate practices. Roles may include: • behavioral experts • coaches • trainers	The district identifies the specific roles and responsibilities of team members. Ensures representation across departments.	Team members are gaining consistency with their roles and functions.	The leadership team regularly reviews the function of the team and its roles. Examines effectiveness of team to ensure the roles of the team meet the schools' needs.
2. *How does the district ensure there are behavioral experts to support the schools?*	District identifies or hires people to serve as behavior experts on the leadership team.	Leadership team ensures it has behavioral expertise on the team. The team has the capacity to: • conduct FBAs • inform schools of current and effective behavioral practices • provide intervention ideas, resources, and consultation	The team provides behavioral support and technical assistance to schools, particularly for students who require more intense supports. The team also receives training on behavior in order to enhance sustainability.	The district has a smooth and consistent process for schools when accessing district-level support.

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*Each phase of implementation includes and extends the prior phase.

Key Anchors and Guiding Questions:	Emerging: Establishing Consensus	Developing: Building Infrastructure	Operationalizing: Gaining Consistency	Optimizing: Innovating and Sustaining
3. How is data stored and accessed?	The leadership team reviews its current data-management systems to identify factors such as: • ease of use • graphical representation • problem-solving alignment • capability with other systems (e.g., SWIS, AIMSweb, etc)	District selects a data-management system that houses or aligns data across social-emotional and behavior. Personnel are identified who can train on and coordinate system.	The leadership team provides training and assistance with the data-management system(s). Ensure system(s) is easily accessible, understood, and used by all the schools	The district routinely uses and continually reviews the data-management system to ensures it meets the needs of their schools.
Processes and Procedures: *4. How is an implementation plan for positive school climate practices developed?*	District identifies ways to improve school climate and/or areas of improvement. Areas to examine across ethnicities may include: • office discipline referrals • suspension, expulsion • dropout rates • attendance and tardies	Leadership team outlines a 3-5 year action/implementation plan and secures funding. The team identifies differentiated support, ways to build capacity, and areas of improvement between schools.	Leadership progresses through the goals on the action plan and reviews progress. The team ensures each school is supported with technical assistance, coaching & feedback, budgeting issues, and data-management.	The leadership team regularly reviews, ensures adherence to, and updates the action plan as the team identifies needs of the district.
5. How does ensure accurate implementation?	District examines available implementation measures to identify ones to potentially use.	Leadership team identifies implementation measures to use and data to be collected. Outlines a meeting schedule to review the data and identifies criteria, goals, and timelines for fidelity.	The leadership team trains schools on implementation measures and collects data using them. The data is reviewed by the leadership team to check progress toward goals.	The collection of implementation data and use of measures is an embedded routine. The data informs the district on how to adjust their practices.
Professional Development: *6. How is coaching and professional development provided to the schools?*	District analyzes current support and coaching provided to schools regarding behavior, social-emotional skills, and positive climates.	Team outlines a model and schedule of coaching and training. Identifies PD to provide to schools, that includes training on : • antecedents and consequences of behavior • conducting FBAs • data-management • effective classroom strategies • district processes and support • examples of practices in action	District team or personnel provide coaching and support to schools in their development of a three-tiered positive school climate model (e.g., PBS). Schools are provided reinforcement & recognition, and successes are celebrated.	The district team regularly analyzes the PD it offers and adjusts it based on the need of the schools.

*Each phase of implementation includes and extends the prior phase.

FAMILY AND COMMUNITY PARTNERING

Family and community partnering is the collaboration of families, schools, and communities as equal partners in improving learner, classroom, school, and district outcomes. In effective partnering, each stakeholder shares responsibility for learners' success by: (a) establishing and sustaining trusting relationships, (b) understanding and integrating family and school culture, (c) maintaining reciprocal communication, (d) engaging in collaborative problem-solving, (e) coordinating learning at home, school and in the community, and (f) acknowledging and celebrating progress.

Key Anchors and Guiding Questions:	Emerging: Establishing Consensus	Developing: Building Infrastructure	Operationalizing: Gaining Consistency	Optimizing: Innovating and Sustaining
Structures: *1. How are effective family and community partnering structures created and supported?*	District personnel examine and understand the need for family and community partnering.	Leadership team outlines a framework or guidelines for family partnering across the tiered model. Includes guidelines on intensifying partnering when needs of the student increases.	District personnel provide support and oversight as schools follow family partnering practices across the tiered levels of support (e.g., *training on partnering, consultation, ongoing coaching, etc*).	District examines data on the support it provides to schools to ensure it is effective and helpful to schools.
	District staff collects data from all schools regarding educator, family, and community partnering needs, strengths and challenges *(e.g. time, languages, transportation, resources, tools, expectations).*	District staff identify and implement effective solutions for previously identified challenges and there is acceptance of the ongoing need to identify concerns and work towards positive outcomes.	District and staff: • implements effective solutions for identified challenges with consistency • work towards positive outcomes • engages in ongoing evaluation of partnering practices *(e.g., participation percentages, feedback, etc).*	District ensures: • there is a focus on home-school learning • positive relationships and reciprocal communication are in all schools • allocates resources to support partnering practices • analyzes data to ensure effectiveness of practices
2. What guidelines for the identification of students with disabilities are provided to schools?	District stakeholders understand the law for identification of students with disabilities, particularly as it relates to problem solving, the tiers, and eligibility categories.	District outlines parameters regarding use of problem solving, the tiers, and identifying students suspected of having a disability.	District clarifies and provides ongoing assistance as schools implement tiered levels of support. District ensures schools are informing parents of rights and appropriately identifying students suspected of having disabilities.	District effectively identifies disabilities within an RtI system. Also continues to evaluate the efficiency and accuracy of using the system to support students suspected of having disabilities.
Processes & Procedures: *3. How are current partnering practices communicated to schools?*	District personnel analyze and understand the research on partnering practices and how it relates to student achievement and outcomes.	District outlines how best practices related to partnering can be included into daily practices within schools.	District personnel provide direct training and support on the research base and effective partnering practices.	District continues to provide support on partnering and examines how effective the practices are. New strategies are infused

*Each phase of implementation includes and extends the prior phase.

| 4. How are policies and processes used to support partnering with families and community? | District reviews its policies, procedures, committees, infrastructure, job descriptions, etc for inclusion of family partnering. | District revises its policies, procedures, committees, infrastructure, etc to include family partnering. | District provides training and assistance on any changes made to aforementioned policies, procedures, etc. Ensures schools have incorporated family processes for partnering. | District ensures systemic family and community partnering is infused within all district practices and organizational infrastructures, policies, procedures, etc. District personnel review its policy and procedures in an ongoing fashion as routine practice. |

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*Each phase of implementation includes and extends the prior phase.

Appendix C: Individual Elementary School Descriptive Data

Table C.1   *School A Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category*

Table C.2   *School B Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category*

Table C.3   *School C Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category*

Table C.4   *School D Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category*

Table C.5   *School E Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category*

Table C.6   *School F Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category*

Table C.7   *School G Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category*

Table C.8   *School H Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category*

Table C.1

School A Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category.

	2010-2011		2011-2012	
	RTI (%)	Total School (%)	RTI (%)	Total School (%)
Race/Ethnicity				
White/Caucasian	24 (60)	268 (55)	20 (61)	271 (55)
Male	14 (35)	143 (30)	12 (36)	153 (31)
Female	10 (25)	125 (26)	8 (24)	118 (24)
Black/African American	4 (10)	68 (14)	1 (3)	60 (12)
Male	2 (5)	28 (6)	0 (0)	24 (5)
Female	2 (5)	40 (8)	1 (3)	36 (7)
Hispanic/Latino(a)	9 (23)	93 (19)	10 (30)	114 (23)
Male	7 (18)	48 (10)	6 (18)	61 (12)
Female	2 (5)	45 (9)	4 (12)	53 (11)
Other race/Multi-racial	3 (8)	55 (11)	3 (9)	47 (10)
Male	2 (5)	23 (5)	0 (0)	27 (5)
Female	1 (3)	32 (6)	3 (9)	20 (4)
Sex/Gender				
Male	25 (63)	242 (50)	18 (55)	265 (54)
Female	15 (38)	242 (50)	15 (45)	227 (46)
English Language Learner	6 (15)	53 (11)	3 (9)	46 (9)
Outcome at end of year				
Continue RTI	21 (53)		27 (82)	
Special Education	2 (5)		3 (9)	
Exited from RTI	7 (18)		0 (0)	
Moved	10 (25)		3 (9)	
Total Number of Students	40	484	33	492

Table C.2

School B Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category.

	2010-2011		2011-2012	
	RTI (%)	Total School (%)	RTI (%)	Total School (%)
Race/Ethnicity				
White/Caucasian	14 (37)	220 (49)	20 (65)	204 (51)
Male	12 (32)	133 (29)	14 (45)	119 (30)
Female	2 (5)	87 (19)	6 (19)	85 (21)
Black/African American	3 (8)	42 (9)	1 (3)	31 (8)
Male	2 (5)	27 (6)	1 (3)	20 (5)
Female	1 (3)	15 (3)	0 (0)	11 (3)
Hispanic/Latino(a)	18 (47)	157 (35)	9 (29)	129 (32)
Male	14 (37)	77 (17)	8 (26)	71 (18)
Female	4 (11)	80 (18)	1 (3)	58 (15)
Other race/Multi-racial	3 (8)	33 (7)	1 (3)	35 (9)
Male	3 (8)	18 (4)	0 (0)	18 (5)
Female	0 (0)	15 (3)	1 (3)	17 (4)
Sex/Gender				
Male	31 (82)	255 (56)	23 (74)	228 (57)
Female	7 (18)	197 (44)	8 (26)	171 (43)
English Language Learner	5 (13)	42 (9)	1 (3)	27 (7)
Outcome at end of year				
Continue RTI	14 (37)		21 (68)	
Special Education	13 (34)		4 (13)	
Exited from RTI	5 (13)		3 (10)	
Moved	6 (16)		3 (10)	
Total Number of Students	38	452	31	399

Table C.3

School C Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category.

	2010-2011		2011-2012	
	RTI (%)	Total School (%)	RTI (%)	Total School (%)
Race/Ethnicity				
White/Caucasian	12 (57)	317 (59)	24 (57)	337 (59)
Male	8 (38)	163 (30)	16 (38)	185 (32)
Female	4 (19)	154 (29)	8 (19)	152 (26)
Black/African American	2 (10)	62 (11)	4 (10)	62 (11)
Male	0 (0)	37 (7)	3 (7)	36 (6)
Female	2 (10)	25 (5)	1 (2)	26 (5)
Hispanic/Latino(a)	5 (24)	113 (21)	11 (26)	124 (22)
Male	3 (14)	49 (9)	5 (12)	62 (11)
Female	2 (10)	64 (12)	6 (14)	62 (11)
Other race/Multi-racial	2 (10)	48 (9)	3 (7)	53 (9)
Male	1 (5)	24 (4)	0 (0)	28 (5)
Female	1 (5)	24 (4)	3 (7)	25 (4)
Sex/Gender				
Male	12 (57)	273 (51)	24 (57)	311 (54)
Female	9 (43)	267 (49)	18 (43)	265 (46)
English Language Learner	0 (0)	24 (4)	3 (7)	23 (4)
Outcome at end of year				
Continue RTI	11 (52)		33 (79)	
Special Education	2 (10)		4 (10)	
Exited from RTI	1 (5)		1 (2)	
Moved	7 (33)		4 (10)	
Total Number of Students	21	540	42	576

Table C.4

School D Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category.

	2010-2011		2011-2012	
	RTI (%)	Total School (%)	RTI (%)	Total School (%)
Race/Ethnicity				
White/Caucasian	15 (50)	271 (59)	10 (53)	271 (60)
Male	10 (33)	132 (29)	6 (32)	128 (29)
Female	5 (17)	139 (30)	4 (21)	138 (31)
Black/African American	5 (17)	35 (8)	3 (16)	36 (8)
Male	3 (10)	15 (3)	1 (5)	18 (4)
Female	2 (7)	20 (4)	2 (11)	18 (4)
Hispanic/Latino(a)	7 (23)	101 (22)	4 (21)	98 (22)
Male	5 (17)	53 (11)	3 (16)	52 (12)
Female	2 (7)	48 (10)	1 (5)	46 (10)
Other race/Multi-racial	3 (10)	55 (12)	2 (11)	49 (11)
Male	2 (7)	34 (7)	2 (11)	28 (6)
Female	1 (3)	21 (5)	0 (0)	21 (5)
Sex/Gender				
Male	20 (67)	234 (51)	12 (63)	226 (50)
Female	10 (33)	228 (49)	7 (37)	223 (50)
English Language Learner	3 (10)	19 (4)	0 (0)	24 (5)
Outcome at end of year				
Continue RTI	11 (37)		10 (53)	
Special Education	8 (27)		3 (16)	
Exited from RTI	3 (10)		5 (26)	
Moved	8 (27)		1 (5)	
Total Number of Students	30	462	19	449

Table C.5

School E Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category.

	2010-2011		2011-2012	
	RTI (%)	Total School (%)	RTI (%)	Total School (%)
Race/Ethnicity				
White/Caucasian	27 (52)	210 (55)	36 (68)	232 (57)
Male	15 (29)	123 (32)	20 (38)	117 (29)
Female	12 (23)	87 (23)	16 (30)	115 (28)
Black/African American	9 (17)	39 (10)	4 (8)	32 (8)
Male	5 (10)	20 (5)	1 (2)	13 (3)
Female	4 (8)	19 (5)	3 (6)	19 (5)
Hispanic/Latino(a)	14 (27)	101 (26)	10 (19)	100 (25)
Male	6 (12)	49 (13)	4 (8)	42 (10)
Female	8 (15)	52 (14)	6 (11)	58 (14)
Other race/Multi-racial	2 (4)	35 (9)	3 (6)	41 (10)
Male	1 (2)	14 (4)	1 (2)	13 (3)
Female	1 (2)	21 (5)	2 (4)	28 (7)
Sex/Gender				
Male	27 (52)	206 (54)	26 (49)	185 (46)
Female	25 (48)	179 (46)	27 (51)	220 (54)
English Language Learner	4 (8)	28 (7)	7 (13)	39 (10)
Outcome at end of year				
Continue RTI	44 (85)		39 (74)	
Special Education	5 (10)		9 (17)	
Exited from RTI	3 (6)		5 (9)	
Moved	0 (0)		0 (0)	
Total Number of Students	52	385	53	405

Table C.6

School F Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category.

	2010-2011		2011-2012	
	RTI (%)	Total School (%)	RTI (%)	Total School (%)
Race/Ethnicity				
White/Caucasian	15 (60)	311 (59)	18 (72)	335 (60)
Male	9 (36)	174 (33)	13 (52)	179 (32)
Female	6 (24)	137 (26)	5 (20)	156 (28)
Black/African American	5 (20)	74 (14)	4 (16)	69 (12)
Male	2 (8)	37 (7)	1 (4)	33 (6)
Female	3 (12)	37 (7)	3 (12)	36 (6)
Hispanic/Latino(a)	4 (16)	87 (17)	2 (8)	105 (19)
Male	3 (12)	46 (9)	1 (4)	55 (10)
Female	1 (4)	41 (8)	1 (4)	50 (9)
Other race/Multi-racial	1 (4)	51 (10)	1 (4)	46 (8)
Male	1 (4)	22 (4)	0 (0)	23 (4)
Female	0 (0)	29 (6)	1 (4)	23 (4)
Sex/Gender				
Male	15 (60)	279 (53)	15 (60)	290 (52)
Female	10 (40)	244 (47)	10 (40)	265 (48)
English Language Learner	0 (0)	30 (6)	0 (0)	38 (7)
Outcome at end of year				
Continue RTI	21 (84)		12 (48)	
Special Education	3 (12)		3 (12)	
Exited from RTI	0 (0)		3 (12)	
Moved	1 (4)		7 (28)	
Total Number of Students	25	523	25	555

Table C.7

School G Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category.

	2010-2011		2011-2012	
	RTI (%)	Total School (%)	RTI (%)	Total School (%)
Race/Ethnicity				
White/Caucasian	6 (40)	280 (49)	16 (53)	301 (48)
Male	1 (7)	132 (23)	10 (33)	158 (25)
Female	5 (33)	148 (26)	6 (20)	143 (23)
Black/African American	5 (33)	113 (20)	7 (23)	112 (18)
Male	4 (27)	64 (11)	6 (20)	62 (10)
Female	1 (7)	49 (9)	1 (3)	50 (8)
Hispanic/Latino(a)	2 (13)	119 (21)	6 (20)	128 (20)
Male	1 (7)	63 (11)	4 (13)	60 (10)
Female	1 (7)	56 (10)	2 (7)	68 (11)
Other race/Multi-racial	2 (13)	57 (10)	1 (3)	85 (14)
Male	2 (13)	33 (6)	0 (0)	44 (7)
Female	0 (0)	24 (4)	1 (3)	41 (7)
Sex/Gender				
Male	8 (53)	292 (51)	20 (67)	324 (52)
Female	7 (47)	277 (49)	10 (33)	302 (48)
English Language Learner	1 (7)	41 (7)	0 (0)	43 (7)
Outcome at end of year				
Continue RTI	4 (27)		16 (53)	
Special Education	4 (27)		5 (17)	
Exited from RTI	6 (40)		6 (20)	
Moved	1 (7)		3 (10)	
Total Number of Students	15	569	30	626

Table C.8

School H Descriptive Data Reported as Total Number of Students and Percentage of Students Represented in Each Category.

	2010-2011		2011-2012	
	RTI (%)	Total School (%)	RTI (%)	Total School (%)
Race/Ethnicity				
White/Caucasian	19 (73)	282 (61)	14 (70)	246 (56)
Male	9 (35)	125 (27)	9 (45)	119 (27)
Female	10 (38)	157 (34)	5 (25)	127 (29)
Black/African American	4 (15)	52 (11)	6 (30)	62 (14)
Male	4 (15)	27 (6)	6 (30)	35 (8)
Female	0 (0)	25 (5)	0 (0)	27 (6)
Hispanic/Latino(a)	3 (12)	88 (19)	0 (0)	86 (20)
Male	3 (12)	49 (11)	0 (0)	49 (11)
Female	0 (0)	39 (8)	0 (0)	37 (8)
Other race/Multi-racial	0 (0)	44 (9)	0 (0)	47 (11)
Male	0 (0)	26 (6)	0 (0)	25 (6)
Female	0 (0)	18 (4)	0 (0)	22 (5)
Sex/Gender				
Male	16 (62)	227 (49)	15 (75)	228 (52)
Female	10 (38)	239 (51)	5 (25)	213 (48)
English Language Learner	2 (7)	34 (7)	0 (0)	49 (11)
Outcome at end of year				
Continue RTI	20 (77)		14 (70)	
Special Education	5 (19)		4 (20)	
Exited from RTI	1 (4)		2 (10)	
Moved	0 (0)		0 (0)	
Total Number of Students	26	466	20	441