

IMPACT OF RESPONSE TO INTERVENTION TRAINING ON TEACHER AND SCHOOL OUTCOMES

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ABSTRACT

IMPACT OF RESPONSE TO INTERVENTION TRAINING ON TEACHER AND
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The primary focus of education is to instill knowledge in children in order to lead them to a successful life. However, there are many children who struggle academically and many teachers who feel helpless in knowing how to help children succeed. Traditional interventions such as retention in grade or placement in special education have had limited success. Empirical studies have shown that these children can be more successful by offering earlier academic interventions for them, before they have begun to fail (First Signs, 2004). Early interventions are a range of services that are offered to children, particularly young children, who have been diagnosed with or are at-risk for a condition that could affect their learning capabilities. In other words, early interventions are those that attempt to provide children with assistance in learning before a problem develops. One particular form of early intervention that has recently become popular is Response to Intervention (RTI), which is the practice of offering evidence-based procedures within

the general education curriculum to assist students with academic difficulties and monitor their response to those procedures (Harris-Murri, King, & Rostenburg, 2006). Response to Intervention is intended to reduce the overall number of referrals and placements within special education (Brown-Chidsey & Steegeg, 2005); increase reading capacity for children (Dunn, 2007); reduce minority overrepresentation in special education (Harry, Klingner, Sturges, & Moore, 2002; Marston, Muyskens, Lau, & Canter, 2003); reduce the number of children grade-retained each year (Jimerson, Pletcher, Graydon, Schnurr, Nickerson, & Kundert, 2006); and improve overall academic instruction from teachers (Brown-Chidsey & Steegeg, 2005). However, there is limited research on the actual effects of utilizing RTI. In particular, there is significantly limited research demonstrating how training in RTI impacts a teachers' self-efficacy regarding their teaching effectiveness and how teachers perceive their ability to impact student academic progress is imperative to successful academic interventions. According to Lane, Mahdavi, and Borthwick-Duffy (2003) if teachers do not feel they have the knowledge and skills to implement services, the service integrity will suffer. Therefore, this study looked at the effects of Response to Intervention on reducing special education assessment referrals. Also, this study examined the impact of RTI training and implementation on teacher self-efficacy. Finally, teacher perceptions regarding the RTI training provided to them was examined. Unfortunately, the current study was not able to add to this literature base with any significant findings.

CHAPTER I: REVIEW OF THE LITERATURE

History and Development of Response to Intervention

Prior to 1997, the use of early interventions or, what was then known as pre-referral interventions, were mentioned but were not required by the federal government as part of the special education legislation (Fuchs & Fuchs, 1989; Graden, 1989; Slonski-Fowler & Truscott, 2004). With revisions of the Individuals with Disabilities Education Improvement Act (IDEA, 1997, 1999), the government mandated that more efforts be made to provide interventions to children with academic delays before referral for special education placement. The goals of these mandates were to provide more effective curriculum within general education and to reduce referrals for special education placement (Nevin & Thousand, 1987; Slonski-Fowler & Truscott, 2004). According to Truscott, Cohen, Sams, Sanborn, and Frank (2005), research has shown that these pre-referral teams have “reduced special education placements, reduced unnecessary special education testing, resulted in more appropriate special education referrals, resulted in improved student performance, and resulted in improved teachers’ attitudes and skill in handling difficult-to-teach students” (p. 131).

However, while some research literature supports these outcomes and deems pre-referral teams as effective, other research has shown that pre-referral intervention teams did not meet the goals as set by the law and there were low levels of implementation by teachers (Flugum & Reschly, 1994; Slonski-Fowler & Truscott, 2004; Witt, Gresham, &

Noell, 1996). These pre-referral intervention teams continued to focus on special education placements as the ultimate objective and rarely required changes in instruction for general education teachers. Of those schools that did require changes of the general education teacher, those changes were rarely evidence-based and typically involved some small maneuver such as change in seating or requiring a lighter work-load (Truscott et al., 2005). These authors reported that the top five “interventions” asked of teachers by the pre-referral intervention teams were: using peer assistance, individual/group counseling, out-of-classroom assistance, changing the seating arrangement, and requiring less work. Unfortunately, none of these changes were actually interventions, rather they were accommodations and none of them required any changes in instruction by the teacher. A study by Eidle, Truscott, Meyers, and Boyd (1998) found that the pre-referral intervention teams in their study did not even focus on in-class instruction that was provided to students, rather, they still deemed special education placement as the ultimate goal.

Various attempts have been made to improve the early intervention process. According to Brown-Chidsey and Steege (2005), there are two U.S. education programs that now require early intervening services: No Child Left Behind (NCLB) of 2001 and the newly revised Individuals with Disabilities Act (IDEA) of 2004. NCLB was one of the educational programs attempting to enforce early interventions. It was one of the first federal laws to place importance on evidence-based practice and the use of instructional practices that have been validated through research. NCLB requires three tiers of intervention for teaching students; primary, secondary, and tertiary. These tiered interventions were a form of response to intervention to promote early intervening

services to children. The 2004 reauthorization of the Individuals with Disabilities Act (IDEA) followed up on NCLB by incorporating the language of Response to Intervention (RTI) into the legislation and integrating it with education policy (Brown-Chidsey & Steege, 2005). IDEA stressed the importance of evidence-based practices, evaluations of progress, and data-based decision making.

According to the North Carolina Department of Public Instruction (NCDPI, 2007b), Response to Intervention (RTI) is a series of implemented high-quality interventions that are research-based in order to assist students who are struggling. High-quality interventions, or instruction, as defined by Batsche et al. (2005) are interventions that are matched to the individual child's needs and that are evidence/research based to increase the learning rate for most children. RTI is intended to offer evidence-based procedures within the general education curriculum to assist students with academic difficulties and monitor their response to those procedures (Harris-Murri et al., 2006). RTI services are provided along a continuum in order to meet the needs of all students and provide more intensive services to students at-risk (Glover & DiPerna, 2007). Evidence-based practices, also known as scientifically-based, are practices that have been verified by numerous research studies as effective for most students (Brown-Chidsey & Steege, 2005). Therefore, with the recently revised IDEA (2004), the use of Response to Intervention became more popular (Dunn, 2007).

Response to Intervention has the dual benefit of being an early intervention process as well as an additional way to determine special education eligibility. The President's Commission on Special Education in 2002 found that there are too many problems associated with using intelligence tests to assess for special education services

(Dunn, 2007). They determined that the practice of waiting until third grade to assess whether a student has grasped educational content (the “wait-to-fail” model) contributes to increased severity of academic difficulties for students in older grades (Dunn, 2007). According to Harry and Klingner (2007) this old method of identifying students for special education only involved proof of a deficit. In other words, the only qualification for a child to meet services for special education as learning disabled was a severe discrepancy between his or her cognitive and achievement abilities (Merrell, Ervin, & Gimpel, 2006). Harry and Klingner (2007) concluded that this old method was an inappropriate form of identification as it is ambiguous, subjective, and has led to the increase of minorities in special education. Problems associated with this placement procedure were that there was limited classroom instruction effort prior to referral, there were inconsistencies among implementations, and arbitrary referrals and assessments occurred too often (Harry & Klingner, 2007).

With the most recent reauthorization of IDEA, provisions were made for Local Education Agencies (LEAs) to utilize up to 15% of their IDEA allocation for early intervention and instruction within the general education curriculum (Batsche et al., 2005). The process schools are using to provide these early intervening services is Response to Intervention. According to Lose (2007), RTI, in the form of early intervention will provide assistance to children without labeling them as having a learning disability. The potential benefits of using an RTI model for early intervention services include: increasing academic performance for minority students and low-performing schools and helping to reduce the amount of misidentification of students with learning problems by teachers (Merrell et al., 2006). Other strengths of the RTI

method versus the “wait-to-fail” method are that it: focuses on children’s learning difficulties being at-risk instead of deficits, results in a decreased identification bias due to teacher judgment, provides more focus on student outcomes, allows teachers within the general education curriculum to receive more immediate assistance, and provides struggling students more immediate intervention (Harris-Murri, King, & Rostenberg, 2006).

According to Ikeda, Rahn-Blakeslee, Niebling, Allison, and Stumme (2006) RTI should be used to answer four key questions: (a) What screening measures should be used to assess problems for all students?, (b) What diagnostic assessments can identify these problems?, (c) What evidence based instructional practices can assist in solving the problem?, and (d) How can children’s progress be measured in order to create changes to programming? According to Canter (2006), RTI is most effective when used within the Problem Solving model to assist in identifying effective strategies and monitoring their effectiveness; however, it is not intended to be a single measure for identifying a disability. The IDEA 2004 does not offer specific guidelines on how to use the RTI method, but rather encourages further research for educators to make informed decisions on how to best identify children with learning disabilities (Merrell et al., 2006). The only recommendations given by IDEA 2004 were that RTI should involve a screening process for early signs of difficulty and a series of tiered interventions that gradually become more intensive (Harry & Klingner, 2007).

Three Tiers of Intervention within RTI

The most commonly used and reported model of Response to Intervention (RTI) is that of using three tiers of interventions. Tier 1 is most often thought of as a classroom

wide intervention or as using a research-based curriculum in general education for all students (Burns & Coolong-Chaffin, 2006). According to Stecker (2007), Tier 1 begins with a universal screening process in order to develop benchmark scores for all children. This universal level has a prevention function in and of itself by ruling out poor academic performance as a function of ineffective teaching and identifying those at-risk that may need more intensive intervention (Gresham, 2004). Evidence-based preventive instruction is provided to the general education classroom, while progress monitoring data is intermittently collected on students who are identified as at-risk (Stecker, 2007). The collected data helps to determine how well these children are responding to the Tier 1 instruction and whether or not they should be referred for Tier 2 (Stecker, 2007).

Tier 2 is still considered a preventative or early-intervention service in the general education continuum with more intensive support provided to those students who do not demonstrate progress or appropriate outcomes in Tier 1 (Harry & Klingner, 2007; Stecker, 2007). According to Stecker (2007), this intensive support can be provided by the general education teacher, reading specialist, school psychologist, or other qualified person. The reason that Tier 2 is considered more intensive is because it focuses on the area of demonstrated difficulty (Stecker, 2007). Tier 2 instructions are often provided via small groups (four to five students) but still as a part of general education (Burns & Coolong-Chaffin, 2006). The instruction delivered at Tier 2 is in addition to Tier 1 instruction and may be provided to the student(s) for approximately thirty or more minutes per day, several days per week (Fuchs & Fuchs, 2005; Stecker, 2007). Progress monitoring continues within Tier 2 for a period of eight to twelve weeks (Stecker, 2007) and should be conducted at least monthly (Burns & Coolong-Chaffin, 2006). The purpose

of this monitoring process should be to determine whether the child has made good progress and can return to Tier 1, whether he or she has made some progress but not at the anticipated rate and should remain at Tier 2, or whether he or she has made poor progress and should be referred for Tier 3 (Stecker, 2007).

Tier 3 is considered to be the most intensive and is an individualized intervention that could possibly include referral for special education services (Burns & Coolong-Chaffin, 2006; Harry & Klingner, 2007; Stecker, 2007). Depending on the individual child's needs, Tier 3 instruction could either occur in lengthier sessions (individually or in very small groups (2 to 3) or it could occur within the context of special education instruction (Stecker, 2007). Instruction provided to the child at this level should include the problem-solving process and be tailored directly to meet that individual child's needs (Burns & Coolong-Chaffin, 2006). Progress monitoring data should continue to be collected at this level of intervention on a more frequent basis. Burns and Coolong-Chaffin (2006) recommend progress monitoring to occur at least weekly with frequent informal assessments in the classroom. If the RTI model is followed appropriately, approximately 95% of children should have their needs met within Tiers 1 and 2. This leaves the other 5% of children receiving instruction at Tier 3 with ample opportunity to receive the intense individualized instruction they need to reach success (Hale, 2006).

North Carolina's Problem Solving RTI Model

The North Carolina Department of Public Instruction (NCDPI, 2007b) reports that Response to Intervention (RTI) focuses on interventions and solutions rather than problems, on addressing all student's academic needs, on positive outcomes for the entire student body, and on "all educators being responsible for all children" (slide 10). North

Carolina's Department of Public Instruction (DPI) describes its interpretation of the RTI problem-solving model as a four level (tier) model and that different types of assistance can occur at each level. According to this model, Level 1 involves the parent and teacher defining the problem, developing a plan with focus on demonstrated areas of concern, implementing their plan and engaging in progress monitoring, and then evaluating the effectiveness of their plan and need for possible additional services. Within this level, only the parent and teacher are involved and interventions occur within the general education classroom (NCDPI, 2007a).

If plans are not successful at Level 1, Level 2 problem solving begins that would involve a problem-solving team comprised of other school personnel (NCDPI, 2007a). At this level, the team would further define the problem and complete screening data on the child to assist in determining the severity of the problem. The team develops interventions for the general education teacher to offer within the classroom as well as progress monitoring to determine its effectiveness. To further understand the effectiveness of the interventions, NCDPI offers four indicators of when to consider moving a child from Level 2 to Level 3, these are: (a) problem-solving team determining the child needs more assistance or more resources; (b) if the child displays any red flags (student moves in from another district where he or she was receiving special education services, parent requests the child be evaluated for special education, child shows potential to harm himself, herself, or others, etc.); (c) if the child is not making progress as anticipated; or (d) that the team should not wait until problems become too severe before acting.

If the decision is made for a child to move to Level 3 services, then an extended problem-solving team would review all information gathered and conduct additional activities to further define the problem area (NCDPI, 2007a). First the team attempts to define a single problem area, unless a single problem area does not fairly represent the whole problem. Next, they determine the intensity of the problem area(s) and the discrepancy between the child's performance and expected performance. The extended team then prepares a written plan for interventions and implements this plan with modifications focused on baseline data. The team will evaluate the effectiveness of the plan based on the child's level of performance and progress. If the child continues to show slow progress in his or her performance in the problem area, then consideration for Level 4 is made. In Level 4, the team determines the child's eligibility need and level of special education services. The team would ensure the child receives the rights to due process and collects any additional information if needed. If it is determined that the child should receive special education services, then an Individualized Education Plan (IEP) will need to be developed and monitored at this level. North Carolina's DPI believes that the Response to Intervention model offers successful opportunities to all children and focuses on all children receiving these opportunities within a regular classroom environment (NCDPI, 2007b).

Impact of Response to Intervention

What is the impact of Response to Intervention on the learning environment? One main focus of RTI is minimizing the number of children placed in special education each year. Studies have shown that evidence based instruction within the classroom will reduce the overall number of referrals and placements within special education (Harry,

Klingner, Sturges, & Moore, 2002). Another impact of RTI is to reduce minority overrepresentation in special education. Marston, Muyskens, Lau, and Canter (2003) found a decrease in the overrepresentation of minority students in special education referrals for a school system utilizing a three Tier intervention process. Response to Intervention also has an impact on reducing the number of children grade-retained each year. Implementing evidence-based instructional strategies in the regular education classroom is one empirically supported alternative to retention (Jimerson, Pletcher, Graydon, Schnurr, Nickerson, & Kundert, 2006). Finally, the use of RTI within schools improves overall academic instruction for teachers. These teachers are providing students with academic skills that will give them success throughout their school years and into their future (Brown-Chidsey & Steege, 2005). Thus, how teachers positively perceive the RTI program and their self-efficacy in regard to their own ability to deliver these skills is imperative to the program's success.

RTI and Special Education

The number of children placed in special education services has increased steadily over the past several years (Slonski-Fowler & Truscott, 2004). Approximately 6 million children were reported as receiving special education services in 2007 (Black, 2007). Financially, these services require more resources and expenditures, leaving fewer resources available for preventative and effective practices to help children (President's Commission on Excellence in Special Education, 2002). Children receiving special education services become labeled as both separate and unequal. Interestingly as the courts already ruled against "separate but equal" policies, some see this form of education as disability oppression and believe policies need to be enforced that will fight for

positive rights of all children (Erevelles, Kanga, & Middleton, 2006). Children in special education classrooms are deemed as having deficits, as having some shortcoming or failure that separates them from the other children in the school (Lipsky & Gartner, 1996). These children often have poor outcomes and a life-long label which they might not deserve. In one research study, they found that many athletes from special education classrooms graduate each year from high school without ever having learned to read, simply because they received poor instruction and had low expectations placed upon them (Arnold & Lassman, 2003). Programs which pull-out certain students have become a dump-site for these children who experience more difficulties with academics (Gardner, 1985; Harris, 1992). Often these children are not provided with effective academic instruction and rarely, if ever, transition back to a regular education classroom.

In contrast, there are positive effects of having children with disabilities in regular education classrooms. It provides regular education students with a realistic view of the world and assists them to learn, from an early age, that differences in people are acceptable (Wood, 1989). By encouraging children with disabilities to attend regular education classrooms, it helps other children to accept differences in their peers and in themselves. This mix of children within the general education curriculum also helps the students with disabilities to participate in typical school activities and assists them in having increased academic achievement and social-emotional outcomes (Wood, 1989). A study by Madden and Slavin (1983) which included 183 children from third through fifth grade found that children with mild disabilities had increased achievement when placed in the regular education classroom versus placement in the special education classroom. These children also had increased self-concept and school attitudes.

According to the President's Commission on Excellence in Special Education (2002), special education often becomes an end-point for children instead of an access to more effective instruction as it was originally intended. They also report that thousands of children are misidentified every year, particularly minority children, and that evidence-based practices are rarely utilized. As a result, recommendations were made to use a model of prevention for difficult-to-teach children and to consider children with disabilities within the general education curriculum first (Batsche et al., 2005). Harry and Klingner (2006) define special education as not at all special. They report that it often provides for generic and routine instruction, suffers from shortages of teachers with variable quality, and a range of environments ranging from very restrictive to overly large classroom sizes. Their interpretation of special education is that instead of the program being individually designed for the children, the children were expected to fit the program. Tilly (2003) conducted a study on 121 schools in Iowa who were using a four tier problem-solving program (as cited in Glover & DiPerna, 2007). Tilly found that such tiered programs, like RTI, demonstrated the ability to reduce the number of special education assessment referrals and placements for participating children. Conducted over a four year time-span, Tilly's study noted a decrease in special education referrals of 39% for kindergartners, 32% for first graders, 21% for second graders, and 19% for third graders. Not only does RTI benefit children by limiting the labeling of a learning disability, it also assists them in gaining academic skills that will help them be successful through their entire school career (Brown-Chidsey & Steege, 2005). Brown-Chidsey and Steege state that using evidence-based instructional practices through RTI provides

students with “critical basic skills that increase the likelihood they will be successful in school and in life” (p. 10).

RTI and Minority Overrepresentation

The disproportionate number of minority students placed in special education has been well documented in research (Harry & Klingner, 2007; Milloy, 2003; Zhang & Katsiyannis, 2002). According to Zhang and Katsiyannis (2002) the problem of minority overrepresentation has persisted for over 30 years. Their study confirmed previous research findings of this overrepresentation problem, particularly with African American students. Milloy (2003) reports that African American children are three times more likely to be labeled as having mental retardation and twice as likely to be labeled as having an emotional disturbance than their white counterparts. This difference occurred even after controlling for effects such as poverty. However, the classifications that these students receive are often those that have personal bias attached, rather than an objective diagnosis, because the diagnoses do not always have a biological basis (MacMillan & Reschly, 1998). In other words, the diagnoses that place these minority children into special education are not those that are biological in nature, but those that are filtered through referral teams to determine their presence and personal bias will always be inherently present in such referral teams. This overrepresentation can lead to increased negative stereotypes towards individuals from minority status. It also minimizes their chances of secondary education and future job availabilities (Artiles & Trent, 1994; MacMillan & Reschly, 1998). Milloy (2003) stated that the African American children placed in special education are more likely than white children to be removed from

general education classes, stigmatized by their peers and teachers, and suspended; then drop-out of school, have higher rates of unemployment, and go to jail.

Teachers need to be prepared with different strategies to understand how to teach culturally diverse children and be given the resources to provide early interventions for at risk children (Milloy, 2003). The Response to Intervention model allows for culturally and linguistically diverse children to receive support before they have the chance to “under-achieve” (Harry & Klingner, 2007, p. 21). The purpose of the RTI model is to continue monitoring progress so that if a child begins to show signs of inadequate progress, immediate interventions can be put into place within the general education context and thus minimize the referrals of minority students. The early interventions offered to students through RTI are designed to reduce the number of children referred for special education, particularly reducing the overrepresentation of minority students referred for special education (Samuels, 2004).

RTI and Grade Retention

Jimerson et al., (2006) reviewed the research on students who were grade-retained and found that the implementation of instructional activities that are evidence based and the use of early intervention strategies are more appropriate than retention at addressing the needs of children who are academically challenged. Over the past 20 years, the state of North Carolina has seen an increase in retention rates by 40% (NCSPA, 2007).

According to Jimerson and Ferguson (2007) by the ninth grade, 30% to 50% of children have been retained at least once even though research does not support this intervention as having any effectiveness on academic achievement. In a longitudinal study that looked at three groups, including retained students, transitional students (students attending a

program where kindergarten and 1st grade curriculum was extended over 3 years), and control students (students who had typical progression through school), it was found that those who were retained showed poorer academic success than the other two groups (Sandoval & Fitzgerald, 1985). Jimerson and Ferguson (2007) found support for this finding in their 12 year longitudinal study that looked at four groups of students (students retained in early grades, students retained in transitional classrooms, students recommended for transitional classrooms but promoted anyway, and promoted students). They found that retention was not effective for the academic success of students, and rather, later increased aggression in the retained students.

Research has also demonstrated that children who are retained are more likely to have higher drop-out rates than children who are not retained. In fact, retaining children is the strongest predictor of determining who will eventually drop out of school (Jimerson & Ferguson, 2007; NCSPA, 2007). In a longitudinal study Alexander, Entwisle, and Dauber (2003) found that of children retained between 1st and 7th grade, 67% dropped out of high school while only 24% of those not retained dropped out. Furthermore, according to Silbergliitt, Appleton, Burns, and Jimerson (2006), 90% of children dropped out of school if they were retained twice.

Retaining students does not offer remediation in academic failure. Rather, Holmes (1989) found that 54 studies have shown negative effects for retained children on academic achievement. The few studies that showed immediate positive effects in groups of grade-retained students showed those positive effects to diminish and disappear over time. Other negative effects of retention on students include difficulty with peer relationships, poorer social adjustment, lower levels of academic adjustment, decreased

attendance, and an increased likelihood of placement in special education services (Byrnes, 1989; Holmes, 1989; Jimerson, 2001). Future effects of retention include decreased likelihood of having a full time job, lower earnings, lower job competence, increased potential for living on state/government support services, and higher representations in crime statistics (NCSPA, 2007; Rumberger, 1987). Rumberger (1987) also makes the suggestion that due to higher rates of unemployment, drop-outs could also suffer from higher rates of mental disorders, suicide, and mortality. According to Jimerson et al. (2006) it is important to begin moving beyond the question “to promote or to retain” (p.94) and instead begin focusing on how to promote as children’s lack of academic success is most often tied to lack of appropriate instruction and poor support by adults.

Studies have shown that using a multi-tiered practice, such as RTI, has the potential of reducing the number of children retained in grade (Harman & Fay, 1996; Kovaleski, Gickling, Morrow, & Swank, 1999). Hartman and Fay (1996) conducted a study in one state using a program similar to RTI called Instructional Support Teams that focused on assisting students within the general education curriculum. They found a reduction in the number of students retained during each of the first three years of the program (a drop in the first year, a further drop in the second year, and a continued drop in the third year). A similar study by Kovaleski et al. (1999) looked at the effects of a structured Instructional Support method offering students who demonstrated academic difficulties increased assistance in the regular education classroom. They found that students engaged in these types of programs that were offered at a high fidelity demonstrated increased time on task, task completion, and comprehension. They suggest

that schools that increase students' skills in these areas will result in a decreased number of yearly retentions. While there is research available to demonstrate the positive effects of multi-tiered programs on decreasing retention rates, there is limited research on the direct effects of the Response to Intervention program on retention. One pilot site in North Carolina using RTI found a reduction of retentions from 15 the year before to 6 during the study year (North Carolina Department of Public Instruction, 2007). The current study hopes to expound on the research between RTI and rates of retention.

RTI and Early Reading Interventions

Many states, including North Carolina, are choosing to use RTI as an early intervention process. This is consistent with recommendations made in past and current IDEA regulations that emphasize the use of early interventions in the general curriculum prior to a referral for special education assessments (Harry, Klingner, Sturges, & Moore, 2002). For children to meet the achievement benchmarks set forth by No Child Left Behind, they must be provided intensive instruction at the first sign of academic difficulty. When early interventions within the RTI model are performed effectively, children's academic needs are met successfully and the possible future need for eligibility determination disappears (Dykeman, 2006).

Thus far, early-intervention RTI models have focused primarily on reading problems in children as difficulties in reading are the most common referral for academic assessments (Fiorello, Hale, & Snyder, 2006). According to Dunn (2007), eighty percent of children identified with a Learning Disability have that disability in reading. Nearly half of the children currently receiving special education services would not need it if they had merely been taught how to read (Lyon, Fletcher, Shaywitz, Shaywitz, Torgeson,

Wood, Schulte, & Olson 2001). Torgesen (2002) reports that early reading interventions result in improved reading success for the majority of children. Implementing these interventions within a RTI model decreases the number of children referred for special education services (Burns, Appleton, & Stehouwer, 2005; Fiorello et al., 2006). Burns et al. (2005) conducted a meta-analysis on 21 articles directly related to Response to Intervention effects. They found that the use of RTI improved student and systems level outcomes. They also noted a decrease of children labeled as having a Learning Disability and a decrease in the number of students referred for special education services. In one study Moore-Brown, Montgomery, Bielinski, and Shubin (2005), provided 123 students with Tier 3 interventions using an evidence-based reading program. The students had already participated in Tier 1 and 2 instructions without significant growth. The entire group of students significantly improved their reading skills and all but eight were able to avoid special education referral. In the above study by Tilly (2003), they found considerable growth in reading skills and a decline in special education referrals over four years. The growth in reading skills that they found was in areas such as phoneme segmentation and oral reading fluency. Early reading programs are a response to intervention method that has shown a link to increased academic success rather than the process of retaining students (Jimerson, Pletcher, Graydon, Schnurr, Nickerson, & Kundert, 2006).

RTI, Teacher Training, and Self-Efficacy

Historically, teachers demonstrate a resistance to change in educational reform and toward processes that are “scientifically-based”. Teachers do not like to accept having to do things differently and show resistance to recommendations that change the

regular ways that things have been done (Rosenfield, 1987). Many of the past attempts at early interventions, such as pre-referral intervention teams, have failed due to how they were perceived by teachers and due to a lack of training (Slonski-Fowler & Truscott, 2004).

Many teachers fear that RTI is just another thing they have to do and worry about the time it will take to conduct such practices (Brown-Chidsey & Steegeg, 2005). It is very important that teachers perceive RTI as a worthwhile endeavor as they remain the most important part of students' success in school (Brown-Chidsey & Steegeg, 2005). Historically, teacher acceptance of a program is the first step to be taken in order for the program to be implemented (Witt & Elliott, 1985). Understanding how elementary teachers perceive early intervention practices, such as RTI, is critically important. Most critical learning problems begin in these early elementary education years and the majority of special education placement decisions will be facilitated by these elementary teachers (Slonski-Fowler & Truscott, 2004). Often teachers will not utilize research-based interventions because they do not understand them (Carnine, 1995, 1997). If teachers perceive an intervention to have useability and application and they can foresee how to employ them, they are more likely to utilize the intervention.

For RTI to be a successful component of any school, a strong program for training teachers is needed as well as frequent feedback and follow-up (Brown-Chidsey & Steegeg, 2005). Hartman and Fay (1996) suggest that as teachers become more familiar with a program, they increase their use of it. Many teachers have not received much, if any, training on how to analyze data or collect progress monitoring data (Brown-Chidsey & Steegeg, 2005). Also, teachers may not think that treating learning problems is within

their area of expertise (Witt & Elliot, 1985). Darling-Hammond (1996) reports that every dollar spent on professional development for teachers' results in greater student academic achievement than anything else the school spends money on. Thus, continually offering professional development is the best method to developing highly-effective teachers.

According to Batsche et al. (2005), teachers will alter their attitudes about change through effective professional development. Teachers will be the ones directly providing services to students, thus, it is imperative that their perceptions are represented in studies conducted (Sutherland, 1994). For teachers to implement RTI services, they need to feel they have the skills and support that is necessary to provide these practices.

Self-efficacy is the belief in one's ability to do or achieve something (Bandura, 1986). Teacher self-efficacy is a teacher's belief or feeling that he/she is able to have a positive impact on the academic learning of his/her students, even if those students may be difficult or lack motivation (Hoy & Woodfolk, 1993). Teacher self-efficacy predicts not only student achievement, but also practices teachers will use (Skaalvik & Skaalvik, 2007). Teachers with a higher level of self-efficacy are more likely to utilize and experiment with newer practices in order to meet the needs of all students (Stein & Wang, 1988). Teacher self-efficacy predicts teacher's use of certain teaching strategies, his/her ability to adapt to and accept change, as well as his/her tendency to refer academically challenged students for special education (Allinder, 1994; Guskey, 1988; Meijer & Foster, 1988). According to Meijer and Foster in a study of 230 teachers, higher levels of self efficacy led to a decreased likelihood to refer students for special education. This is likely because teacher self-efficacy can be a self-fulfilling prophecy, according to Tschannen-Moran, Hoy, and Hoy (1998), teachers will not utilize the needed

instructional techniques if they feel they are unable to teach a particular student. Skaalvik and Skaalvik (2007) found that being able to adapt education to each individual student's needs was one of the dimensions of teaching based on teacher self-efficacy. Teachers with higher self-efficacy are more likely to implement interventions within the classroom; including new methods, such as RTI, to offer higher levels of instruction to all students (Cousins & Walker, 1995; Guskey, 1988).

Statement of the Problem

Response to Intervention (RTI) is a series of high-quality interventions that are research-based in order to assist students who are struggling (NCDPI, 2007b). The purpose of RTI is to offer evidence-based procedures within the general education curriculum to assist students with academic difficulties and monitor their response to those procedures (Harris-Murri et al., 2006). Response to Intervention is intended to reduce the overall number of referrals and placements within special education (Brown-Chidsey & Steege, 2005); increase reading capacity for children (Dunn, 2007); reduce minority overrepresentation in special education (Harry et al., 2002; Marston et al., 2003); reduce the number of children grade-retained each year (Jimerson et al., 2006); and improve overall academic instruction from teachers (Brown-Chidsey & Steege, 2005).

Due to IDEA being so recently revised in 2004, limited research has been compiled in each of the areas that RTI is supposed to impact. In particular, there is very little research on the impacts related to referrals for special education assessment, grade retention, and teacher self-efficacy. Previous research has shown that earlier methods of pre-referral intervention teams were not meeting goals regarding the reduction of

referrals for special education assessment, improvement in student performance, and improvement in teachers' attitudes and skills in teaching difficult-to-teach students (Truscott, Cohen, Sams, Sanborn, & Frank, 2005) and there were low levels of implementation by teachers (Flugum & Reschly, 1994; Slonski-Fowler & Truscott, 2004; Witt, Gresham, & Noell, 1996). Instead, these pre-referral intervention teams continued to focus on special education placements as the ultimate objective and rarely required changes in instruction for general education teachers. Placement in special education is not only financially straining for the schools but it also holds few redeeming qualities for the children placed in them (Harris, 1992; President's Commission on Excellence in Special Education, 2002).

Many of the children placed in special education classrooms have reached this point after other ineffective forms of school practices such as grade retention. Children who are grade-retained are more likely to have negative school experiences and significantly more likely to eventually drop out of school (Jimerson & Ferguson, 2007). Jimerson and Ferguson (2006) report that the use of evidence-based early interventions is much more appropriate at addressing the needs of children with academic difficulties than is the use of grade-retention.

Many of the past attempts at early interventions, such as pre-referral intervention teams, have failed due to how they were perceived by teachers and a lack of training (Slonski-Fowler & Truscott, 2004). Stein and Wang (1988) report that teachers with higher levels of self-efficacy are more likely to utilize and experiment with newer practices in order to meet the needs of all students. A lack of self-efficacy by teachers may lead to unwillingness to implement Response to Intervention with integrity.

Therefore, teachers' self-efficacy in relation to their ability to implement RTI services is imperative to the program's success. According to Lane, Mahdavi, and Borthwick-Duffy (2003) if teachers do not feel they have the knowledge and skills to implement services, the service integrity will suffer.

The current study addressed the concerns of whether training in and implementation of Response to Intervention is having a significant impact within school systems. This study examined the effects of training in and implementation of Response to Intervention on reducing special education assessment referrals. Also, this study examined the impact of this training and implementation on teacher self-efficacy.

Schools involved in this study were combined into four different groups for some of the analyses. Schools in Group One included kindergarten through second grade teachers in those schools that had received intensive Response to Intervention training and where Response to Intervention had been implemented. Schools in Group Two were the same schools as in Group One, but only included those teachers in third through fifth grade who had not received Response to Intervention training. Schools in Group Three had received some training in and were implementing some processes related to early intervention of academic problems, but not in Response to Intervention. Finally, schools in Group Four had not received any training on early intervention or Response to Intervention.

Three specific hypotheses were considered in this study:

1. Schools where intensive Response to Intervention training had been provided and where Response to Intervention had been implemented, (Group One) would have a decrease in trends of (K-2) special education assessment referrals following

implementation of the training and implementation of RTI procedures. This decrease in K-2 special education assessment referral trend would be greater than that seen for the other two K-2 groups where less intensive or no training had been received (Groups Three and Four). In addition, this decrease in K-2 special education assessment referral would be greater than 3-5 special education assessment referrals in the school where those teachers did not receive the same intensive RTI training.

2. Teachers in grades K-2 who had received intensive Response to Intervention training and were in schools where Response to Intervention had been implemented, (Group One) would have higher levels of teacher self-efficacy than those K-2 teachers who had received less training in and were not implementing Response to Intervention (Group Three) and than those K-2 teachers who had not received any training in and were not implementing Response to Intervention (Group Four).
3. Teachers in grades K-2 who had received intensive Response to Intervention training and were in schools where Response to Intervention had been implemented (Group One) would have higher levels of self-efficacy than teachers in grades 3-5 at the same schools (Group Two) who had not received intensive training in Response to Intervention.

Finally, differences across the four groups were explored in regards to teacher responses related to the amount of training that teachers reported having received and the amount of time teachers reported being engaged in early intervention activities.

CHAPTER II: METHODOLOGY

Participants

The sample consisted of 80 elementary education teachers, 76 female and 3 male, from six elementary schools that serve children kindergarten through fifth grade in a western North Carolina school district. There were 18 teachers in Group One, 17 teachers in Group Two, 20 teachers in Group Three, and 25 teachers in Group Four for responses on the teacher self-efficacy surveys. This school district serves approximately 4,400 students between six elementary schools, one middle school, one high school, and one early college high school. There are 391 students in Group One, 464 students in Group Two, 351 students in Group Three, and 495 students in Group Four. All six of these elementary schools met adequate yearly progress for their 2009 Annual Yearly Progress report. These schools serve a small county with approximately 32,395 full-time residents. The majority of the sample had their Bachelors degree in education (67%), while 21% had their Masters degree, and 11% had their National Certification. Teachers per grade were fairly evenly distributed, with second grade being the least represented. Three teachers failed to note what grade they taught. Please refer to Table 1 for a distribution of the percent of teachers who taught each grade level.

Table 1

Distribution of Grades

Grades	<i>N</i>	<i>n</i>	%
Kindergarten	77	16	20.0
First Grade	77	14	17.5
Second Grade	77	7	8.8
Third Grade	77	13	16.3
Fourth Grade	77	12	15.0
Fifth Grade	77	15	18.8

The majority of elementary teachers in Group One had been teaching for 21 or more years. However, when asked how many years they had been teaching their current grade level, the majority responded 0 to 10 years. Please refer to Table 2 for the percent of years taught and years teaching the current grade level for Group One. For Group Two, the majority of elementary teachers were fairly evenly split between teaching for 5 to 10, 16 to 20, and 21 or greater years. Similarly when asked how many years they had been teaching at their current grade level, the majority were split between 0 to 4, 5 to 10, and 16 to 20 years. Please refer to Table 3 for the percent of years taught and years teaching the current grade level for Group Two. The majority of elementary teachers in Group Three were similarly split between teaching for 0 to 4, 5 to 10, and 21 or more years. However, when asked how many years they had been teaching at their current grade level, the majority of teachers responded 0 to 4 years. Please refer to Table 4 for the percent of years taught and years teaching the current grade level for Group Three.

Finally, for Group Four, the majority of teachers responded that they had been teaching for 5 to 10 years. When asked how many years they had been teaching at their current grade level, the majority responded 0 to 4 years. Please refer to Table 5 for the percent of years taught and years teaching the current grade level for Group Four. In sum, Groups One and Two have over half of their teachers who have taught for over 15 years while Group Three has only a third and Group Four has less than a quarter of their teachers who have taught for over 15 years. Likewise, Groups One and Two have less than a quarter of their teachers who have taught for less than 5 years while Group Three has a third and Group Four has a fourth of teachers who have taught for less than 5 years. This suggests that Groups One and Two have more experienced and older teachers.

Table 2

*Distribution of Years Taught and Years Taught at Current Grade Level
for Group One*

Years	N	Number of Years Taught		Years Taught at Current Grade	
		n	%	n	%
0 – 4 years	18	3	16.7	7	38.9
5 – 10 years	18	4	22.2	6	33.3
11 – 15 years	18	1	5.6	3	16.7
16 – 20 years	18	2	11.1	1	5.6
21 or more years	18	8	44.4	1	5.6

Table 3

*Distribution of Years Taught and Years Taught at Current Grade Level
for Group Two*

Years	<i>N</i>	Number of Years Taught		Years Taught at Current Grade	
		<i>n</i>	%	<i>n</i>	%
0 – 4 years	17	2	11.8	6	35.3
5 – 10 years	17	6	35.3	4	23.5
11 – 15 years	17	0	0.0	2	11.8
16 – 20 years	17	4	23.5	4	23.5
21 or more years	17	5	29.4	1	5.9

Table 4

*Distribution of Years Taught and Years Taught at Current Grade Level
for Group Three*

Years	<i>N</i>	Number of Years Taught		Years Taught at Current Grade	
		<i>n</i>	%	<i>n</i>	%
0 – 4 years	20	6	30.0	13	65.0
5 – 10 years	20	5	25.0	3	15.0
11 – 15 years	20	3	15.0	2	10.0
16 – 20 years	20	1	5.0	1	5.0
21 or more years	20	5	25.0	1	5.0

Table 5

*Distribution of Years Taught and Years Taught at Current Grade Level
for Group Four*

Years	<i>N</i>	Number of Years Taught		Years Taught at Current Grade	
		<i>n</i>	%	<i>n</i>	%
0 – 4 years	25	6	24.0	11	44.0
5 – 10 years	25	11	44.0	9	36.0
11 – 15 years	25	3	12.0	3	12.0
16 – 20 years	25	3	12.0	1	4.0
21 or more years	25	2	8.0	1	4.0

Two of the elementary schools had received intensive Response to Intervention training for their kindergarten through second grade teachers (Group One). A description of this training is provided below. These schools were trained during the summer months prior to the 2006-2007 school year and implementation of RTI began with the 2006-2007 school year. Within the same two elementary schools in Group One, third through fifth grade teachers did not receive this Response to Intervention training; therefore, third through fifth grade teachers from the same schools in Group One comprised Group Two. Two of the elementary schools (Group Three) had received training on recognizing early academic problems and implementing early reading programs, in particular, the DIBELS program. A description of this training is also provided below. These schools in Group Three also began implementing their program during the 2006-2007 school year. Finally,

two of the elementary schools had received no training on either early recognition of academic problems or Response to Intervention (Group Four).

Group One Training

The Response to Intervention (RTI) training that was conducted for Group One began with an overview of the philosophy of RTI and training on the basic assumptions of RTI. The main points covered under these basic assumptions were: all students can learn, it is the responsibility of the entire faculty to ensure that each child makes progress, it is not the sole responsibility of the exceptional children's department or the regular education department, 80% of all students should be at benchmark when the instruction in the classroom is appropriate and research-based, and 15% - 20% of all students will need strategic interventions. Following this RTI training, Group One received training on progress monitoring, graphing, and decision making regarding progress monitoring. Incorporated into this training was instruction on the DIBELS (Dynamic Indicators of Basic Early Literacy Skills) program and how to conduct progress monitoring utilizing the DIBELS program. Additional training was then conducted on math and math interventions, and reading and reading interventions. This training involved exploring research based interventions in reading and math to be used within the regular education classroom for RTI. Finally to complete the training sessions, a within school collaboration planning session was conducted to determine how each school would implement RTI within their school; as well as, an additional intervention workshop where teachers could prepare materials to use for small group interventions in whatever area of need the students were assigned to group interventions for (i.e.: phonological awareness, alphabetic principles, fluency, comprehension, etc.).

Group Three Training

The early recognition and intervention training mainly centered on instruction on the DIBELS program. The DIBELS program is an early recognition reading program that utilizes precise progress monitoring techniques. Teachers were also trained on how to conduct DIBELS progress monitoring through their palm pilots. Finally, teachers were provided with a brief training on progress monitoring, graphing, and decision making regarding progress monitoring.

Instruments and Materials

A survey questionnaire was created by the examiner to provide demographic information on each of the teachers participating in the study as well as their perceptions regarding the training that they had received (see Appendix D). This questionnaire included questions regarding teacher demographic information, trainings on RTI and/or early intervening services, preparedness to engage in RTI, approximations of identified and non-identified special education students, and early intervention activities within each school.

In addition, two scales measuring teacher self-efficacy were used, including: *The Ashton Vignettes survey* and *The Teachers' Sense of Efficacy Scale*, (see Appendix B and C, respectively).

1. *The Ashton Vignettes survey* provides one overall score of teacher self-efficacy. Scores range from 15 to 105. Original validity and reliability data was unable to be reported, despite multiple communication attempts to the author of this survey. Therefore, reliability and validity information are provided based on the results of the current study. A Cronbach alpha coefficient was calculated for the Ashton

Efficacy Vignettes survey to determine the internal consistency for each of the scales within the current study. For the current study, the Cronbach alpha coefficient for the Ashton Efficacy Vignettes survey was .89, suggesting good internal consistency. The internal consistency of the scale did not change substantially with any one item deleted, ranging between .87 and .90. Construct validity was obtained by comparing this scale with the Teachers' Sense of Efficacy Scale (Long Form). The correlation between the two scales was $r = 0.80$, significant at the $p < .000$ level, suggesting a strong relationship between the two scales.

2. *The Teachers' Sense of Efficacy Scale (Long Form)*: also known as the Ohio State Teacher Efficacy Scale was put through a series of three separate studies during its original conception (Tschannen-Moran & Hoy, 2001). The first study included 224 participants and began with 52 items. Using factor-analysis the instrument was reduced to 32 items. In study two, utilizing 217 participants, the study was reduced further to 18 items and three subscales were derived: efficacy for student engagement, efficacy for instructional strategies, and efficacy for classroom management. Finally, study three was intended to improve the scale and included 410 participants. The number of items on the efficacy for classroom management subscale was increased to make it a stronger domain. The total scale of now 36 items was tested on this new sample. Through this study, the scale reached its final length of 24 items for the long form. Using factor-analysis, all items loaded onto an overall efficacy factor with loadings ranging from 0.49 to 0.76. The total scale had a strong reliability coefficient of 0.94. Construct validity was obtained

by comparing this scale with the original two Rand items to measure teacher efficacy and the Personal Teaching Efficacy scale by Gibson and Dembo.

Correlations were as follows: 1) Rand item one and Rand item two, $r = 0.18$ and $r = 0.53$ respectively, both significant at the $p < .01$ level; and 2) Personal Teaching Efficacy scale, $r = 0.64$, $p < 0.01$ (Tschannen-Moran & Hoy, 2001). Each of the three subscales (efficacy for student engagement, efficacy for instructional strategies, and efficacy for classroom management) also have sufficient reliability at 0.87 for engagement, 0.91 for instruction, and 0.90 for management. Therefore, this instrument is considered reasonably valid and reliable and both the subscale scores and the overall score can be used in assessing teacher self-efficacy (Tschannen-Moran & Hoy, 2001). Scores for this scale range from 24 to 216.

Finally, data was collected from district records on the rate of special education assessment referral in grades K-2 for each of the six schools participating in this study from school year 2003-2004 through school year 2008-2009.

Data Collection

The questionnaire and the two surveys were administered together in paper and pencil format to all elementary school general education teachers. The evaluator administered the questionnaire and the surveys at the beginning of the fall semester in group format at either the school's mandatory first of the year meeting or mid-year faculty meeting. The questionnaire and surveys were stapled together in one packet per teacher with a participant number on the top of each page for anonymity, this allowed for later comparison per participant. The subject number was not used for any type of individual identification. Two informed consent forms were given to each participant (see

Appendix A). Participants were required to sign one of the consent forms prior to their completing the questionnaire and surveys and kept the other consent form for contact information of the evaluator. At each school, each teacher who participated in the study was given a chance to win a drawing provided by the evaluator.

The school data was collected through access to records kept by the district. The evaluator obtained permission to access these records. Data was collected for the past six school years beginning with the 2003-2004 school year and ending with the 2008-2009 school year. The data collected was the number of referrals for special education assessment in grades K-2 for each of the school years at each school. No specific individual student data was collected and no specific school was identified when reporting the data. The number of students in grades K-2 retained for each of the school years at each school could not be provided by the district due to a change in software systems that preserved this data; therefore, hypothesis two could not be evaluated.

Data Analysis

Scores were recorded for each participant for both the demographic information and the surveys and analyzed based on responses on the instruments. Data for each participant were transferred from the instruments to the Statistical Package for Social Sciences (SPSS) program and each entry was checked twice for accuracy. SPSS was also used to interpret the data. Frequencies were calculated to provide information about the sample using the demographic information, as well as, for teacher feedback regarding their RTI training.

The first hypothesis was analyzed using a Single-Case Design in which differences in referrals for special education assessments were compared over time.

Trend studies are good at describing long-term changes and can establish a pattern over time to detect changes in the event being studied. Utilizing a Single-Case Design also helped control for the small sample size. Specifically, this analysis focused on whether the schools where the K-2 teachers were trained in RTI and implemented RTI procedures (Group One) showed a trend toward decreases in special education assessment referrals for K-2 teachers. In addition, this analysis looked at whether those same schools (Group One) showed a greater trend toward decreases in K-2 special education assessment referrals compared to K-2 and 3-5 special education assessment referrals in schools where no training was provided (Group Two & Group Four). Finally, this analysis looked at whether those schools (Group One) showed a greater trend toward decreases in K-2 special education assessment referrals compared to K-2 special education assessment referrals in two other schools where the teachers were trained in basic academic interventions not specifically related to RTI procedures (Group Three).

To answer hypotheses three and four, a One-Way Analysis of Variance test was conducted on self-efficacy scores for Group One, Group Two, Group Three, and Group Four. Post-hoc analyses were also conducted for differences between groups. Also, a Cronbach's alpha coefficient was calculated for each of the questionnaires to test the internal consistency of the questionnaires for the sample.

CHAPTER III: RESULTS

This chapter will provide the results on the data gathered in the study, as well as, several explanatory tables and graphs. Overall, the analysis of these data will be framed by the three predetermined hypotheses regarding patterns of Response to Intervention (RTI) training on teacher and school outcomes. The three hypotheses that were analyzed included:

1. Schools where intensive Response to Intervention training had been provided and where Response to Intervention had been implemented, (Group One) would have a decrease in trends of (K-2) special education assessment referrals following implementation of the training and implementation. This decrease in K-2 special education assessment referral trend would be greater than that seen for the other two K-2 groups where less intensive or no training had been received (Groups Three and Four). In addition, this decrease in K-2 special education assessment referral would be greater than 3-5 special education assessment referral in the school where those teachers did not receive the same intensive RTI training (Group Two).
2. Teachers in grades K-2 who had received intensive Response to Intervention training and were in schools where Response to Intervention had been implemented, (Group One) would have higher levels of teacher self-efficacy than those K-2 teachers who had received less training in and were not implementing

Response to Intervention (Group Three) and than those K-2 teachers who had not received any training in and were not implementing Response to Intervention (Group Four).

3. Teachers in grades K-2 who had received intensive Response to Intervention training and were in schools where Response to Intervention had been implemented (Group One) would have higher levels of self-efficacy than teachers in grades 3-5 at the same schools (Group Two) who had not received intensive training in Response to Intervention. An interaction is hypothesized between groups over time.

Hypothesis I: Special Education Assessment Referrals

Group One

A decrease in K-2 special education assessment referrals was predicted for those schools (Group One) where the teachers had received intensive training in Response to Intervention and had begun to implement the Response to Intervention process. A single-case design analysis was used to assess changes over time for these schools. The data on K-2 special education assessment referrals obtained for the three years prior to training (2003 through 2006) represented the baseline phase and the data from the three years following training (2007 through 2009) represented the intervention phase. This data is presented in Figure 1.

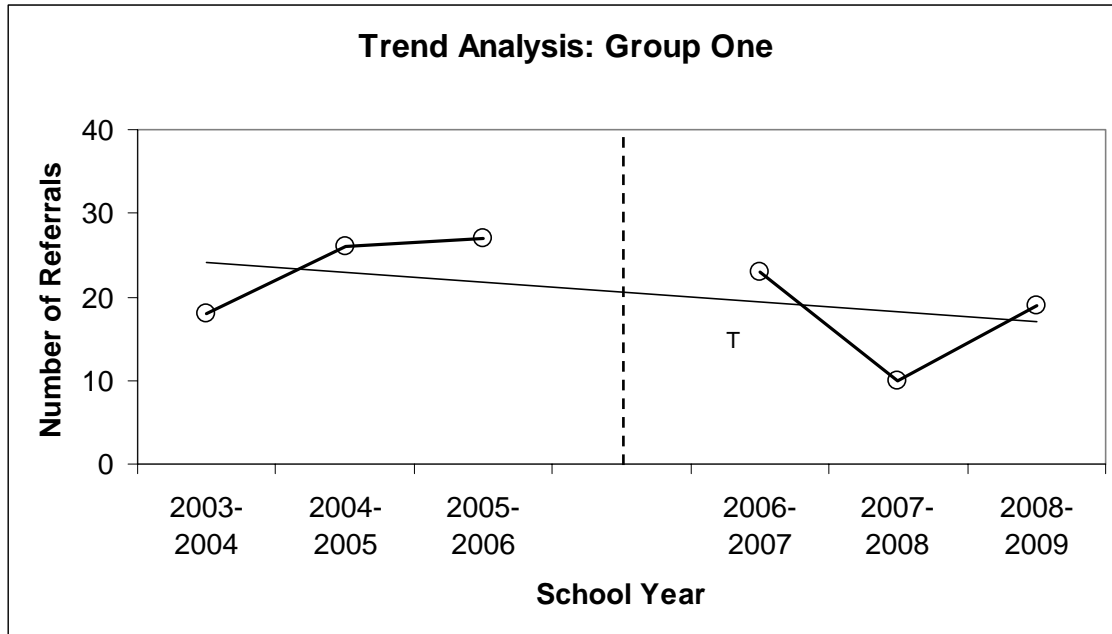


Figure 1: Trend Analysis for baseline versus RTI training in number of special education assessment referrals for school years 2003-2004 through 2008-2009 for Group One

Several single-case design analyses were conducted on this data in order to determine changes in level from baseline to intervention, differences in slope for the baseline phase compared to the intervention phase, the effect size of those differences, and overall size of slope for the trend line from baseline through intervention. Differences in the level of the data were determined by comparing the mean of the baseline phase to the mean of the intervention phase. For Group One, the baseline mean was 23.67 and the intervention mean was 17.33 indicating that there was a decrease in the level from the Baseline phase to the Intervention phase. The baseline slope was 4.5, suggesting an average per year increase in referrals of 4.5; and the intervention slope was -2.0, suggesting an average per year decrease in referrals of 2.0. The total slope of the trend line for Group One baseline and intervention combined was -1.34, suggesting an

overall average per year decrease in referrals of 1.34. Finally, the effect size was calculated via Percent of Nonoverlapping Data (PND) points. According to Scruggs and Mastropieri (1998) a PND of 80% or more is necessary to state that the intervention yielded a large effect. For Group One, there was a 33% PND. Therefore, for Group One, even though the intervention of RTI yielded a lower mean and a decreasing slope, the effect of RTI is not significant based on PND.

Group Two

It was also predicted that there would not be a decrease in the 3-5 special education assessment referrals in those schools where the K-2 teachers were trained in RTI but the 3-5 teachers did not receive the same training (Group Two). Since no intervention was implemented with these teachers, the referral information available across the six years that this study was conducted were considered Baseline data only. This data is presented in Figure 2.

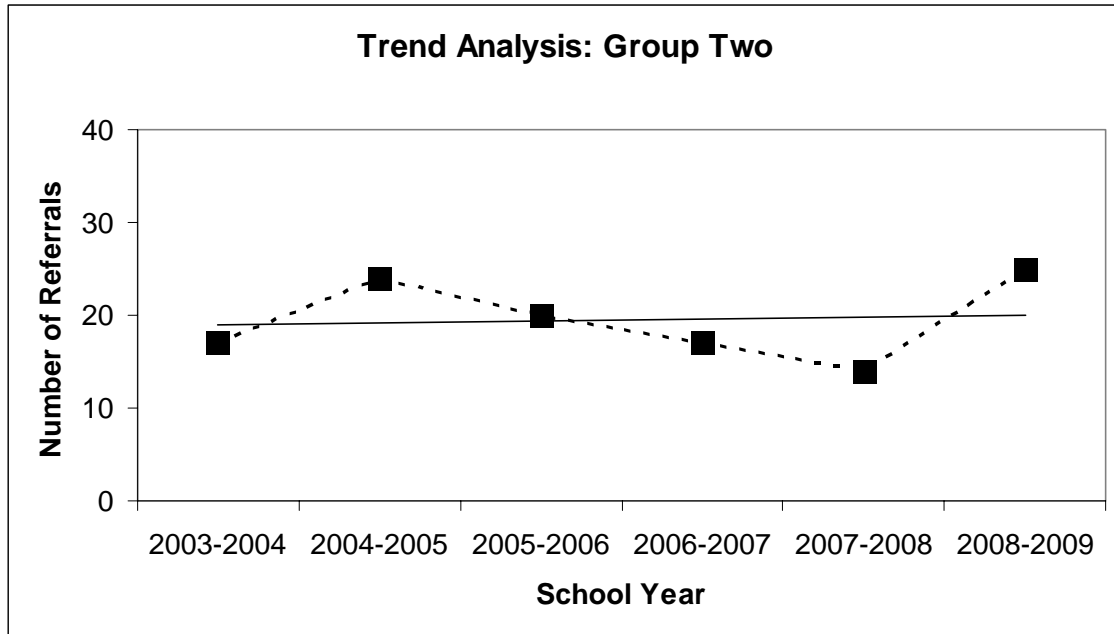


Figure 2: Trend Analysis for number of special education assessment referrals for school years 2003-2004 through 2008-2009 for Group Two

For this data, the only analysis that could be conducted was to look at the mean for all six years which represented the level and the slope for the trend line across those six years. Group Two had a mean of 19.5 indicating that this group had a smaller number of overall special education assessment referrals than did Group One during its Baseline phase but a greater number during its Intervention phase. For Group Two, the slope was 0.2, indicating that there was an average per year increase in referrals of 0.2. No significant changes in trend were indicated for this group over time.

Group Three

For Group Three a small decrease in K-2 special education assessment referrals was expected due to utilizing early intervention processes; however, the decrease in trend was not predicted to be as great as the decrease in trend predicted for Group One. Again,

a single-case design analysis was used to assess changes over time for these schools. Similar to the analysis for Group One, the data on K-2 special education assessment referrals obtained for the three years prior to the early intervention training (2003 through 2006) represented the baseline phase and the data from the three years following the training on early interventions (2007 through 2009) represented the intervention phase. This data is presented in Figure 3.

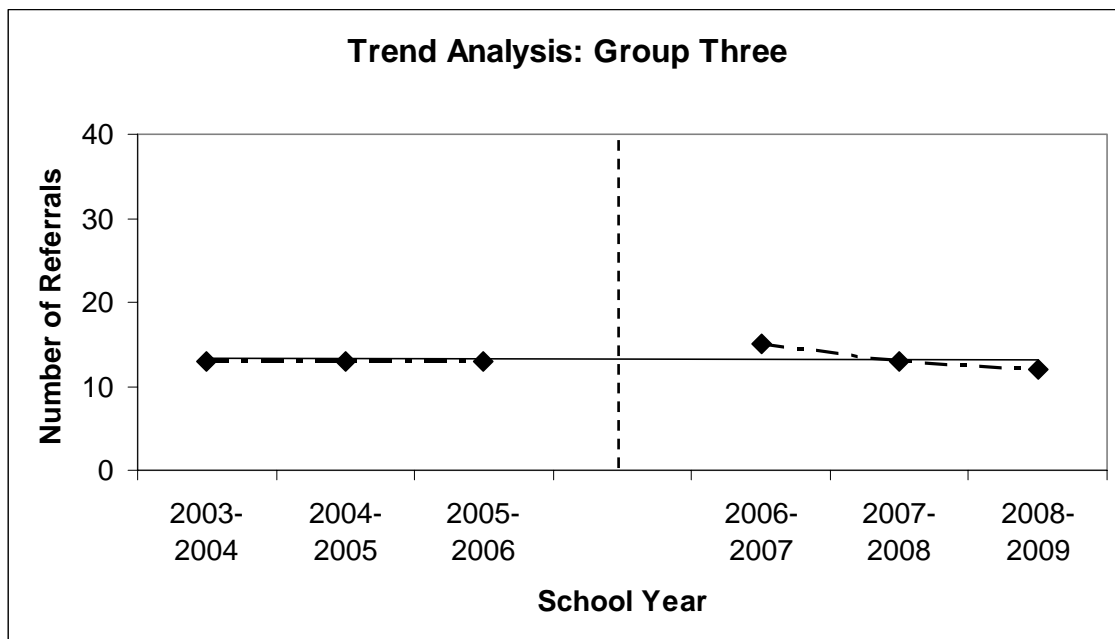


Figure 3: Trend Analysis for baseline versus early intervention training in number of special education assessment referrals for school years 2003-2004 through 2008-2009 for Group Three

Several single-case design analyses were also conducted on this data in order to determine changes in level from baseline to intervention, differences in slope for the baseline phase compared to the intervention phase, the effect size of those differences, and overall size of slope for the trend line from baseline through intervention. Differences

in the level of the data were determined by comparing the mean of the baseline phase to the mean of the intervention phase. For Group Three, who received only early intervention training but no training in RTI, the baseline mean was 13.0 and the intervention mean was 13.33 indicating that there was a slight increase in the level from the baseline phase to the intervention phase. For Group Three, the baseline slope was 0.0, suggesting no increases/decreases in referrals per year during the baseline; and the intervention slope was -1.5, suggesting an average per year decrease in referrals of 1.5 per year. The total slope of the trend line for Group Three baseline and intervention combined was -0.09, suggesting an overall average per year decrease in referrals of 0.09. Finally, the effect size was calculated via Percent of Nonoverlapping Data (PND) points. For Group Three, there was a 33% PND. Therefore, for Group Three, the average special education assessment referrals were slightly higher during the intervention phase, even though there was a negative slope. As with Group One, the effect of the intervention for Group Three was found to be insignificant, based on PND.

Group Four

Finally, it was predicted that there would not be a decrease in the K-2 special education assessment referrals for those schools that did not receive any training in RTI or early intervention services (Group Four). Similar to Group Two, since no intervention was implemented with these teachers, the referral information available across the six years that this study was conducted were considered Baseline data only. This data is presented in Figure 4.

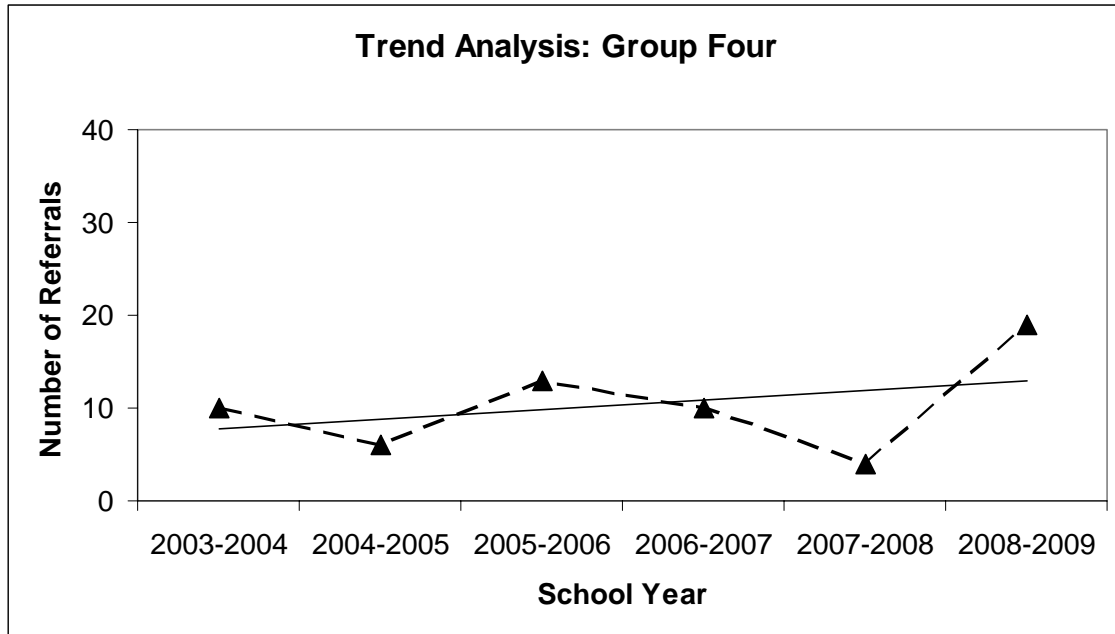


Figure 4: Trend Analysis for number of special education assessment referrals for school years 2003-2004 through 2008-2009 for Group Four

For this data, the only analysis that could be conducted was to look at the mean for all six years which represented the level and the slope for the trend line across those six years. Group Four had a mean of 10.33 indicating that this group had a smaller number of overall special education assessment referrals than did Group One during both Baseline and Intervention phases. However, for Group Four, the slope was 1.03, indicating that there was an average per year increase in referrals of 1.03.

Summary for Hypothesis I

Group One initially had the highest mean of special education assessment referrals than any other group. Although Group One demonstrated an increase in their last year of intervention; overall their slope demonstrated the largest per year average decrease in special education assessment referrals. Groups Two and Four, whom did not

receive any training, demonstrated an average per year increase of special education assessment referrals, with Group Four demonstrating the largest average per year increase. Finally, Group Three did not demonstrate any significant changes or mean differences, but they demonstrated a slight average per year decrease in special education assessment referrals. However, as hypothesized this decrease was smaller than Group One as evidenced by a 0.5 smaller slope. When observing the differences in combined slopes for all groups, both groups who received some training, either in RTI or early intervention services, had an overall average per year decrease, with Group One trained in RTI demonstrating the largest overall average per year decrease; and both groups who did not receive any training had an average per year increase. Despite demonstrating the largest overall average per year decrease, results were not significant and therefore it is not possible to state at this time that RTI is producing any meaningful results within this school district.

Hypotheses II & III: Teacher Self-Efficacy Results

A one-way between-groups analysis of variance was conducted to explore the impact of training in RTI or early-intervention programs on teacher self-efficacy, as measured by the Ashton Efficacy Vignettes survey and the Teachers' Sense of Efficacy Scale. This analysis was conducted by dividing the same four groups of teachers as was done for the analysis of special education assessment referrals. No significant differences were found between groups for the Ashton Efficacy Vignettes survey, [$F(3, 76) = 1.52, p = .216$]. Post-hoc comparisons using the Tukey HSD test indicated that none of the groups significantly differed from another. Please refer to Table 6 for means and standard deviations for each group.

Table 6

Mean Differences Between Groups for the Ashton Vignettes Survey

Groups	Mean	Standard Deviation
Group One	78.78	13.44
Group Two	76.12	9.14
Group Three	76.35	9.83
Group Four	82.12	9.92

Similarly, no significant differences were found between groups for the Teachers' Sense of Efficacy Scale, [$F(3, 76) = 2.18, p = .098$]. Post-hoc comparisons using the Tukey HSD test indicated that none of the groups significantly differed from another. Please refer to Table 7 for means and standard deviations for each group.

Table 7

Mean Differences Between Groups for the Teachers' Sense of Efficacy Scale

Groups	Mean	Standard Deviation
Group One	181.00	17.05
Group Two	171.53	21.84
Group Three	169.90	22.38
Group Four	182.20	16.60

A Cronbach alpha coefficient was calculated for each scale to determine the internal consistency for each of the scales within the current study. For the current study, the Cronbach alpha coefficient for the Ashton Efficacy Vignettes survey was .89, suggesting good internal consistency. The internal consistency of the scale did not change substantially with any one item deleted, ranging between .87 and .90. For the current study, the Cronbach alpha coefficient for the Teachers' Sense of Efficacy Scale was .95, suggesting good internal consistency. The internal consistency of the scale remained .95 despite any one item being deleted.

Exploratory Analyses

Teachers were asked to report on their perception of what percentage of their students experienced academic and behavioral difficulties that were not already being served within the special education program. Thirty percent of teachers reported having between 6-10% of students in their classroom with significant academic difficulties that were not identified in the special education program; and 53% reported having 0-5% of students in their classroom with significant behavioral difficulties that were not identified in the special education program. Fifty percent of teachers reported having 0-5% of students in their class that were currently receiving special education services. Refer to Table 8 for teacher perceptions of percentages of students with academic difficulties, behavioral difficulties, and those receiving special education services.

Table 8

Percent of Teacher Perceptions of Percentages of Students with Academic and Behavioral Difficulties and those Receiving Special Education

Percent of Students	N	Academic Difficulties		Behavioral Difficulties		Students in Special Education	
		n	%	n	%	n	%
0 – 5%	80	22	27.5	42	52.5	40	50.0
6 – 10%	80	24	30.0	16	20.0	24	30.0
11 – 15%	80	5	6.3	10	12.5	7	8.8
16 – 20%	80	12	15.0	4	5.0	2	2.5
21 – 25%	80	9	11.3	3	3.8	1	1.3
25% or more	80	7	8.8	1	1.3	2	2.5

For the next section exploratory analyses were conducted between groups. These analyses allow observation of differences between groups on teacher's perceptions of their training, teacher's perceptions of their preparedness to engage in RTI, teacher's perceptions of their school's RTI involvement, and teacher's perceptions of their school's engagement in different early intervention and RTI activities.

Teacher Training

All teachers were asked how many trainings they had received on Response to Intervention (RTI) or on early intervention programs either from their school system or outside of their school system. The majority of Group One teachers reported receiving between 2 and 5 trainings within their school system and no trainings outside of their school system. Please refer to Table 9 for these results. As expected the majority of Group Two and Group Four teachers reported that they had received no training in these

areas within their school system or outside of their school system (see Tables 10 and 12). What was surprising was the fact that there were teachers reporting having received this training when the system was saying that they had not received this training. As expected the majority of Group Three teachers reported receiving between 1 and 2 trainings within their school system and no trainings outside of their school (see Table 11). This reflects the less intensive training that they had received from the system when compared to Group One.

Table 9

Group One Teacher Trainings in Response to Intervention or Early Intervention

Trainings	N	Trainings from School System		Trainings outside of School System	
		n	%	n	%
None	18	0	0.0	11	61.1
0 – 1	18	0	0.0	4	22.2
2 – 3	18	7	38.9	1	5.6
4 – 5	18	8	44.4	1	5.6
6 or more	18	3	16.7	1	5.6

Table 10

*Group Two Teacher Trainings in Response to Intervention or Early**Intervention*

Trainings	N	Trainings from School System		Trainings outside of School System	
		n	%	n	%
None	17	8	47.1	13	76.5
0 – 1	17	7	41.2	3	17.6
2 – 3	17	2	11.8	0	0.0
4 – 5	17	0	0.0	1	5.9
6 or more	17	0	0.0	0	0.0

Table 11

*Group Three Teacher Trainings in Response to Intervention or Early**Intervention*

Trainings	N	Trainings from School System		Trainings outside of School System	
		n	%	n	%
None	20	6	30.0	13	65.0
0 – 1	20	1	5.0	6	30.0
2 – 3	20	10	50.0	1	5.0
4 – 5	20	3	15.0	0	0.0
6 or more	20	0	0.0	0	0.0

Table 12

*Group Four Teacher Trainings in Response to Intervention or Early**Intervention*

Trainings	N	Trainings from School System		Trainings outside of School System	
		n	%	n	%
None	25	5	20.0	18	72.0
0 – 1	25	10	40.0	6	24.0
2 – 3	25	9	36.0	1	4.0
4 – 5	25	1	4.0	0	0.0
6 or more	25	0	0.0	0	0.0

Feelings of Preparedness and Perception of RTI Involvement

The majority of teachers in Group One reported feeling either “Somewhat Prepared” (39%) or “Very Prepared” (33%) to engage in Response to Intervention early-intervening services within their class. Ninety-four percent of the teachers reported that their school has been involved in RTI for 2 years, which is consistent with their length of actual RTI involvement. Interestingly, the majority of teachers in Group Three reported feeling either “Somewhat Prepared” (35%) or “Very Unprepared” (30%) to engage in Response to Intervention early-intervening services within their class. Fifty-nine percent of the teachers in Group Two reported that their school has been involved in RTI for 2 years. A lower percentage of reporting teachers would not be unexpected for Group Two; even though they were from the same schools as Group One, they were not involved in

the RTI training and therefore would not be as familiar with its implementation. As expected, the majority of teachers in Group Four reported feeling “Unprepared” (32%) and the majority of teachers in Group Two reported feeling “Somewhat Unprepared” (24%), “Unprepared” (24%), or “Very Unprepared” (29%) to engage in Response to Intervention early-intervening services within their class. Eighty percent of the teachers in Group Three and 76% of the teachers in Group Four reported that their school has been involved in RTI for less than 1 year. This would be consistent with reports from the school system that as the data was being collected during the 2008-2009 school year, the remaining K-2 teachers were being trained and beginning to implement RTI within their schools.

Early Intervention Activities

All teachers were given a series of early intervening activities and asked to respond with either “Yes” or “No” as to whether their school engaged in the activity. For Group One, 89% of teachers reported that their school engaged in DIBELS, an early-recognition reading program, at the beginning of the year; and 94% reported that their school engaged in DIBELS throughout the school-year. Fifty-six percent of teachers reported that their school engaged in evidence-based instruction for all students, 61% reported that their school utilized problem-solving school based teams, and 78% reported that their school utilized evidence-based interventions for at-risk students. Please refer to Table 13 for Group One results.

Table 13

Group One Teacher Reports of Early–Intervention School Activities

Activity	<i>N</i>	Yes		No	
		<i>n</i>	%	<i>n</i>	%
DIBELS at the beginning of the school year	18	16	88.9	1	5.6
DIBELS throughout the school year	18	17	94.4	1	5.6
Evidence–based instruction for all students	18	10	55.6	7	38.9
Problem–solving school based teams	18	11	61.1	6	33.3
Evidence–based interventions for at-risk students	18	14	77.8	3	16.7

For Group Two, 77% of teachers reported that their school engaged in DIBELS, an early–intervention reading program, at the beginning of the year; and 100% reported that their school engaged in DIBELS throughout the school–year. Fifty-nine percent of teachers reported that their school engaged in evidence–based instruction for all students, 47% reported that their school utilized problem–solving school based teams, and 77% reported that their school utilized evidence–based interventions for at-risk students.

Please refer to Table 14 for Group Two results.

Table 14

Group Two Teacher Reports of Early–Intervention School Activities

Activity	<i>N</i>	Yes		No	
		<i>n</i>	%	<i>n</i>	%
DIBELS at the beginning of the school year	17	13	76.5	4	23.5
DIBELS throughout the school year	17	17	100.0	0	0.0
Evidence–based instruction for all students	17	10	58.8	7	41.2
Problem–solving school based teams	17	8	47.1	9	52.9
Evidence–based interventions for at-risk students	17	13	76.5	4	23.5

For Group Three, 55% of teachers reported that their school engaged in DIBELS, an early–intervention reading program, at the beginning of the year; and 85% reported that their school engaged in DIBELS throughout the school–year. Thirty percent of teachers reported that their school engaged in evidence–based instruction for all students, 15% reported that their school utilized problem–solving school based teams, and 40% reported that their school utilized evidence–based interventions for at-risk students. Please refer to Table 15 for Group Three results.

Table 15

Group Three Teacher Reports of Early-Intervention School Activities

Activity	<i>N</i>	Yes		No	
		<i>n</i>	%	<i>n</i>	%
DIBELS at the beginning of the school year	20	11	55.0	7	35.0
DIBELS throughout the school year	20	17	85.0	1	5.0
Evidence-based instruction for all students	20	6	30.0	12	60.0
Problem-solving school based teams	20	3	15.0	15	75.0
Evidence-based interventions for at-risk students	20	8	40.0	10	50.0

Finally, for Group Four, 80% of teachers reported that their school engaged in DIBELS, an early-intervention reading program, at the beginning of the year; and 84% reported that their school engaged in DIBELS throughout the school-year. Fifty-two percent of teachers reported that their school engaged in evidence-based instruction for all students, 52% reported that their school utilized problem-solving school based teams, and 60% reported that their school utilized evidence-based interventions for at-risk students. Please refer to Table 16 for Group Four results.

Table 16

Group Four Teacher Reports of Early–Intervention School Activities

Activity	<i>N</i>	Yes		No	
		<i>n</i>	%	<i>n</i>	%
DIBELS at the beginning of the school year	25	20	80.0	5	20.0
DIBELS throughout the school year	25	21	84.0	4	16.0
Evidence–based instruction for all students	25	13	52.0	12	48.0
Problem–solving school based teams	25	13	52.0	12	48.0
Evidence–based interventions for at-risk students	25	15	60.0	10	40.0

Summary of Exploratory Analyses

None of the groups reported receiving training on RTI or early intervention activities outside of their school system, such as in school or at conferences. However, as expected the majority of teachers in Group One and Group Three reported receiving training within their school system. This is consistent with the school system’s report that Group One received training in RTI and Group Three received training in DIBELS and early intervention activities. Similarly, as expected, the majority of teachers in Groups Two and Four reported receiving no training. As for engaging in RTI, the majority of Group One teachers reported feeling either somewhat or very prepared to engage in RTI which would be consistent with their higher reports of training; while the majority of Group Three teachers were split between feeling either somewhat prepared or very unprepared. The majority of Group Four teachers reported feeling unprepared to engage in RTI, which is consistent with their lack of training. Finally, the majority of teachers in

Group Two were divided between feeling either somewhat unprepared, unprepared, or very unprepared to engage in RTI, again consistent with their lack of training.

Within this section, teachers were also asked to report on the number of early intervening activities that their school may engage in. Greater than 50% of all teachers in Group One reported that their school engaged in all of the early intervention activities that were listed. Group Two results were very similar to Group One which would be logically assumed since the groups come from the same schools. Greater than 50% of Group Three teachers reported being involved with the DIBELS program, both at the beginning of the school year and throughout the school year, which is consistent with the school system's report that these schools were originally only trained in DIBELS as their early intervention activity. Finally, and interestingly, greater than 50% of all teachers in Group Four reported being involved in all of the early intervention activities that were listed. This is interesting because this is the group that had not yet received any training yet and that was not yet involved in the RTI or early intervention process.

CHAPTER IV: DISCUSSION AND CONCLUSIONS

This chapter will discuss the results of the analyses, as well as, discuss conclusions and limitations of the study. The purpose of this study was to address the concerns of whether training in and implementation of Response to Intervention is having a significant impact within school systems by examining data collected from one school system. This study examined the effects of training in and implementation of Response to Intervention (RTI) on reducing special education assessment referrals. This study also examined the impact of this training and implementation on teacher self-efficacy.

Special Education Assessment Referrals

A trend analysis, via Single-Case Design, was conducted to demonstrate differences over time between groups in the number of special education assessment referrals. According to the President's Commission on Excellence in Special Education (2002), special education often becomes an end-point for children instead of an access to more effective instruction as it was originally intended. This commission recommended that children with disabilities be considered within the general education curriculum first (Batsche et al., 2005). Brown-Chidsey and Steege (2005) state that using evidence-based instructional practices through RTI provides students with "critical basic skills that increase the likelihood they will be successful in school and in life" (p. 10). Tilly (2003) conducted a study on 121 schools utilizing a four tier problem-solving RTI program (such as North Carolina's RTI program) and found a decline in special education assessment referrals over four years (as cited in Glover & DiPerna, 2007). Based on this

research, it was hypothesized for the current study that schools where intensive Response to Intervention training had been provided and where Response to Intervention had been implemented would have a decrease in trends of (K-2) special education assessment referrals over time. This decrease in trend would be greater than that seen for grades 3-5 at the same school who were not utilizing RTI and had not received the training, for those schools (K-2) where less training had been provided and Response to Intervention had not been implemented, and for those schools (K-2) who had not received any training and were not implementing Response to Intervention.

The analyses used in this study revealed results that did not provide significant support for the first hypothesis that schools where intensive RTI training had been provided and where RTI had been implemented would have a significantly greater decrease in special education assessment referrals than groups where less intensive or no training had been provided. While none of the single-case analyses completed indicated a significant change in special education assessment referrals over time, there were some indications of a change in trend. However, all schools except one had variability in referral rates from year to year, especially in the last year when the referrals increased in all but the one group. This increase also occurred for those schools where RTI training had been provided but the overall trend still indicated a decrease in special education assessment referrals. However, this decrease did not represent a significant difference between the Baseline and Intervention phases. The schools with the least amount of variability over time were those schools that had received training in early recognition only. The difference in trend from baseline to intervention was so minimal that it provided little support for believing that, even given more time, those schools trained

only in early recognition practices would see a significant decrease in special education assessment referral rates. Those schools where no training was provided had trend lines indicating a slight increase in special education assessment referrals over time.

Both groups who received some training, either in RTI or early intervention services, had an overall average per year decrease; and both groups who did not receive any training had an average per year increase in special education assessment referrals. While there were decreases in trends overall, there was too much variability in the data and not enough data points to state with any certainty that significant decreases in trend for the RTI group could occur with more time.

Past studies were able to analyze the number of special education assessment referrals over multiple years following the implementation of the problem-solving program. However, the current study was only able to examine the number of referrals prior to the program, the year of the implementation of the program, and two years past the implementation of the program. The fact that there was limited impact of RTI indicated during the first few years of its implementation may be related to the complex nature of RTI. One of these complexities is the extent to which the teachers received high quality training on RTI. Reynolds and Shaywitz (2009) report that how the effective instruction within RTI is defined to teachers and how teachers are trained in this instruction is critical to its success. This district may want to consider the need for additional follow-up training. The current results indicate that it is inconclusive at this time to state whether or not RTI had any effects within this school district and it will likely take more than 3 years, and possibly more teacher training and support, in order to see any significant changes in special education assessment referral rates in the future. In

addition, it appears that teachers need more than simply training in early intervention techniques in order for significant changes to occur.

Teacher Self-Efficacy

For teachers to implement RTI services, they need to feel they have the skills and support that is necessary to provide these practices. Teacher self-efficacy is a teacher's belief or feeling that he/she is able to have a positive impact on the academic learning of his/her students, even if those students may be difficult or lack motivation (Hoy & Woodfolk, 1993). The results of this study also did not support the second and third hypotheses of this study that teachers who had received intensive RTI training and were in schools where RTI had been implemented would have higher levels of teacher self-efficacy than teachers who had received less training and were not implementing RTI, than those teachers who had not received any training in and were not implementing RTI, and than those teachers in the same schools but upper grades who had not received the intensive training in RTI. This consistency in ratings was true even though the teachers in Groups One and Two tended to be older with more experience than the teachers in Groups Three and Four. The current study utilized two approaches to measure teacher self-efficacy. The first measured teacher self-efficacy in responses to short vignettes and the other measured teacher self-efficacy in responses to statements of effectiveness within the classroom and with students. The teachers in this study consistently rated themselves on both measures as having high levels of self-efficacy and there were no indications that any level of additional training resulted in higher levels of self-efficacy. Since these results are based on a self-report, it may be that the teachers in this district were artificially rating themselves high or that they, in fact, all had higher levels of self-

efficacy. Teachers with higher self-efficacy are more likely to implement interventions within the classroom; including new methods, such as RTI (Cousins & Walker, 1995; Guskey, 1988). If it is true that all teachers in this school system had higher levels of self-efficacy, then providing additional training would not be expected to increase the teacher's self-efficacy to any significant degree. Since teachers with high levels of self-efficacy are more confident in their ability to implement new practices, this district should be encouraged to continue to provide training in new practices which could lead to further improvements in school factors such as reduced referrals for special education assessment and reduced retention rates.

Exploratory Analyses

The sample consisted of 80 elementary education teachers; the majority of whom had their Bachelors degree. Teacher reports regarding amount of training in RTI or early intervention programs were generally consistent with what the district had reported. However, the fact that a few teachers at those schools where no training had yet been provided reported having received that training is contradictory and may reflect some confusion regarding this question. In addition, the information obtained would have been clearer had this question been split into two questions – one asking about RTI and the other asking about early intervention programs.

Teacher reports regarding the use of early intervention programs indicated that while more of the teachers who had received specialized training reported using these programs, there were many teachers who had not received the training that also reported using the programs. This can be partially explained by one of the groups who reported that their school utilized these programs being from the same schools as the RTI group,

but encompassing 3rd through 5th grades, which had not received the training. Therefore, while they themselves were not utilizing the program, they still reported that these programs were used within their school. Therefore, the similarity of their results for early intervention activities supports the accuracy with which these events are occurring within their schools. However, it still leaves unexplained the last group, whose schools had not received any training, having a large majority of teachers report using these programs. This finding is contradictory to what the researcher had originally been informed from the district, that these schools had not received any training in RTI or early intervention programs, and that these schools were not utilizing any of these programs. This finding could have occurred because at the time of the study, this last group of schools was just being informed about these programs from their school district and was about to begin training in these programs and services.

Limitations

There were several limitations to the current study. First, one main component of the analyses was unable to be conducted. The study originally had a hypothesis to also examine the effects of training in and implementation of RTI on reducing yearly grade retentions. However, the school district had switched computer systems which housed the number of grade retentions the year prior to the study; and therefore, the number of grade retentions over time could not be provided to the evaluator for each school for the school years included in this study (2003-2004 through 2008-2009). The school system was only able to provide retention data for all the schools for the last school year, 2008-2009, which would not have allowed for a trend in differences to be observed.. This was an important component of the study as research suggests that utilizing programs such as

RTI can reduce the number of children retained in grade (Harman & Fay, 1996; Kovalski, Gickling, Morrow, & Swank, 1999).

A second limitation of the current study was the time constraints for the completion of the study. Many studies used as evidence in this study for the benefits of RTI utilized data from over four or more years following implementation of the RTI program. The current study was only able to observe the 3 years prior to the study, the year of implementation, and 2 years following implementation. As discussed previously, the findings from the current study suggest that more significant findings may have occurred had the study been extended over a longer period of time following implementation of RTI.

A third limitation of the current study was the presentation of the special education assessment referral data. For this study, the number of referrals per year was reported without taking into consideration how many teachers were in each school each year that could potentially make a referral. Since comparisons for this study focused on progress made by individual schools with less emphasis on comparisons between schools this may have impacted the results only if there had been significant changes in faculty over the six years included in this study. However, stronger comparisons could have been made between Groups One and Three, specifically if this data had been reported in a ratio format, which would have been the number of referrals per number of teachers, for each group, for each of the years involved in the study. While the district reported that there had been only minimal changes in number of faculty in each school during this six year period, specific data regarding these changes was unable to be obtained prior to the completion of this study.

A fourth limitation of the current study was the training the teachers received in Response to Intervention. Based on the information received from the school district, the teachers were only trained in RTI to address academic concerns and behavioral concerns were not a focus. However, when we are looking at the number of special education assessment referrals, some of those referrals are likely behavioral. Since the teachers' training only focused on academics, it would have been nice to be able to tease out the behavioral special education assessment referrals from those included in the study. Similarly, the actual teachers making the referrals each year change; however, there was no way to control for not having the same teachers for every year of the study.

An additional limitation was the use of a self-report questionnaire to determine teacher self-efficacy. Self-report measures can lend themselves to higher self ratings and it is possible that more significant findings could have occurred with a more objective measure of teacher self-efficacy. A final limitation of the current study involved the formatting of the demographics question inquiring about the number of RTI and early intervention trainings. This question should have been divided out into two questions; thereby demonstrating more reliable reports between Group One, who had been trained in RTI, and Group Three, who had been trained in an early intervention program.

Conclusions

The current study was meant to demonstrate the differences between groups based on Response to Intervention training and implementation. Two major limitations of the current study discussed above include the small time frame for completion of the study and the inability to access grade retention data. Despite this, some changes in trend did occur when observing the single-case design analyses for the groups on special education

assessment referrals. Although none of the findings were significant, the group that had been trained in and had been implementing RTI did have the largest per year average decrease in special education assessment referrals. Similarly, the group that had only been trained in early intervention strategies also had an overall average decrease; however, this decrease was so small it suggests that early intervention training alone is not sufficient to produce significant and lasting effects on special education assessment referrals. Finally, the two groups that had not received any training both demonstrated average per year increases in special education assessment referrals. However, due to variability within the data and few intervention data points, it is not possible to state whether or not RTI is currently impacting this school district's assessment referrals as intended.

A similar lack of significant findings occurred for teacher self-efficacy. All of the teachers in the current study tended to rate themselves as having a high level of teacher self-efficacy, suggesting that they either inflated their scores on the self-rated items or they all truly have high levels of teacher self-efficacy. Self-report measures, while the most convenient and least obtrusive data collection procedures, can lead to higher self-ratings and while this is a limitation of the study, it is difficult to say whether a more objective measure of teacher self-efficacy is available. Due to these high ratings across groups, significant findings between groups were not found. Although, teachers from groups that had been trained in and were implementing RTI did report feeling more prepared to utilize RTI than any of the other groups.

There is significant research in the literature to support the use of programs such as Response to Intervention to both reduce the number of special education assessment

referrals and reduce the number of children retained in grade each year. Although the current study was not able to add to this literature base with any significant findings, it still provides evidence that simply training in early reading interventions will not produce any lasting or significant changes and more time is required to observe changes in trends for special education assessment referrals.

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APPENDICES

Appendix A: Informed Consent Form

Appendix B: Ashton Efficacy Vignettes survey

Appendix C: Teachers' Sense of Efficacy Scale

Appendix D: Demographics Questionnaire

Appendix A: Informed Consent Form

Informed Consent Form

(Please keep one copy for contact information and turn in the other one signed)

Western Carolina University
Department of Psychology
Killian 301
Cullowhee, NC 28723
Phone: 828-227-7361
Fax: 828-227-7005

Principal Investigator (PI): Melinda Smith Rogers, Graduate Student
Email: masmith8@catamount.wcu.edu
Thesis Advisor: Lori Unruh, PhD

Purpose of Study:

You are invited to participate with no obligation in a research study designed to understand teachers' perceptions of early intervention services and on training in these service areas.

Description of Participation:

If you choose to participate in this research study I will give you three questionnaires to complete. One questionnaire is simply a demographics questionnaire and the other two are designed to understand your perceptions. The questionnaires will take about 15 to 20 minutes to complete.

Confidentiality:

To protect your confidentiality these questionnaires are designed to be completely anonymous; please do not put your name on them. Your name will only occur on the consent form which will be filed separately.

Voluntary Participation:

Your participation is strictly voluntary. You may choose to withdraw from the study at any time.

If you have questions or concerns regarding this study, you may contact Melinda Smith Rogers (masmith8@catamount.wcu.edu), Dr. Lori Unruh (lunruh@email.wcu.edu), or you may also contact the chair of the WCU Institutional Review Board at 828-227-3177.

YOU ARE MAKING A DECISION WHETHER OR NOT TO ALLOW THE PRINCIPAL INVESTIGATOR TO USE YOUR QUESTIONNAIRES FOR RESEARCH AND PRESENTATION PURPOSES ONLY.

I AGREE DO NOT AGREE (Circle one) to participate in this research study.

Participant's name (please print) _____ Date: _____

Participant's Signature: _____

If you would be interested in finding out the full results of this study, please fill in an email address below where you can be contacted:

Appendix B: Ashton Efficacy Vignettes survey

Ashton Efficacy Vignettes

Read each situation carefully. Consider similar situations from your own teaching experiences. Indicate how effective you would be in handling each situation by circling the appropriate number:

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

1. One of your students misbehaves frequently in your class and is often disruptive and hostile. Today in class he began roughhousing with a friend in the back of the class. You tell him firmly to take his seat and quiet down. He turns away from you, says something in a belligerent tone that you can't hear and swaggers to his seat. The class laughs and then looks to see what you are going to do. How effective would you be in responding to this student in a way that would win the respect of the class?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

2. Maria, an educable mentally retarded student in your class, has been working diligently, but still performs below grade-level in all subjects. At a conference the mother says that she doesn't expect much of the girl, because Maria is "dumb" just like herself. How effective would you be in talking to Maria's mother about her feelings and about the effect that parents' expectations can have on their child's school achievement?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

3. Your county has mandated that all teachers must restructure their course requirements to insure adequate development of students' basic skills by including these elements in each lesson plan. How effective would you be in incorporating achievement of basic skills objectives into your lesson plans?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

4. Students in your school gang together in same sex, same race cliques. Your principal has requested that each teacher work to promote more positive interactions among these groups. How effective do you feel you would be in helping your students develop more positive interactions?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

5. Half a dozen low-achieving female students are not getting much from your class. Lately they have begun to "hang around together" and to advertise that they don't like you or your class. They have begun to fool around, disrupt our lessons, and occasionally "talk back." When you attempt to involve them in class work they either make jokes or sit sullenly. How effective would you be in eliminating their disruptive behavior?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

6. This year your principal has assigned you to teach a class of low ability students in your subject matter area. The teacher who taught this class last year tells you that these are the slowest students that she's taught in her twenty year teaching career. How effective would you be in increasing the academic achievement of the students in this class?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

7. You have a student who never hands in assignments on time, seldom gets to class before the bell rings and inevitably forgets to bring books or pencil to class. He obviously has the ability to do above average work, but you have discussed this matter with his parents, and they don't seem to understand the importance of school achievement. How effective would you be in motivating this student to get to work?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

8. A new student has been assigned to your class. Her records indicate that she never does her homework and does not seem to care about her education. Her IQ score is 83 and her achievement scores have been below the 30th percentile. How effective would you be in increasing her achievement test scores?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

9. The student-teacher ratio in your class of compensatory education students is 20 to 1. You must plan your lessons to meet the individual interests and abilities of the students. How effective would you be in designing activities to match the individual interests and abilities of the students in your class?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

10. Because of repeated failure, one of your students confides to you that she has given up and will attend school only until she can find a way to drop out. How effective would you be in persuading her that she can be successful in school?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

11. A number of your students have been sleeping in class. They do poorly on in class assignments and seldom turn in homework. You learn that they are taking drugs. How effective would you be in helping the students with their drug problem?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

12. A learning disabled student has been mainstreamed into your classroom. He has been described by his previous teachers as being extremely hyperactive and having severe reading problems. How effective would you be in teaching this student?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

13. A new teacher in your school has been reviewing cumulative records for her students and asks you to explain the difference between grade equivalent and percentile ranks for several of her students on the standardized achievement battery. How effective would you be in explaining the difference between these two types of scores?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

14. You have been selected to work on a curriculum selection committee to choose textbooks and materials to be used in your county for the coming year. The materials chosen must fit a wide range of instructional needs for students of differing abilities. How effective would you be in doing this work?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

15. Your school has adopted an instructional textbook series in your area with excellent objectives and teaching materials, but almost nothing in the form of tests or exercises to monitor student progress. How effective do you feel you would be in developing a set of evaluation procedures to accompany the text for your grade level?

1	2	3	4	5	6	7
extremely ineffective			moderately effective			extremely effective

Appendix C: Teachers' Sense of Efficacy Scale

Teachers' Sense of Efficacy Scale

Directions: Please indicate your opinion about each of the statements below. Your answers are anonymous.

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal

1. How much can you do to get through to the most difficult students?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal

2. How much can you do to help your students think critically?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal

3. How much can you do to control disruptive behavior in the classroom?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal

4. How much can you do to motivate students who show low interest in school work?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal

5. To what extent can you make your expectations clear about student behavior?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal

6. How much can you do to get students to believe they can do well in school work?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal

7. How well can you respond to difficult questions from your students?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal

8. How well can you establish routines to keep activities running smoothly?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Nothing Very Little Some Influence Quite A Bit A Great Deal

9. How much can you do to help your students' value learning?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

10. How much can you gauge student comprehension of what you have taught?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

11. To what extent can you craft good questions for your students?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

12. How much can you do to foster student creativity?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

13. How much can you do to get children to follow classroom rules?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

14. How much can you do to improve the understanding of a student who is failing?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

15. How much can you do to calm a student who is disruptive or noisy?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

16. How well can you establish a classroom management system with each group of students?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

17. How much can you do to adjust your lessons to the proper level for individual students?

1 2 3 4 5 6 7 8 9

Nothing Very Little Some Influence Quite A Bit A Great Deal

18. How much can you use a variety of assessment strategies?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

19. How well can you keep a few problem students from ruining an entire lesson?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

20. To what extent can you provide an alternative explanation or example when students are confused?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

21. How well can you respond to defiant students?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

22. How much can you assist families in helping their children do well in school?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

23. How well can you implement alternative strategies in your classroom?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

24. How well can you provide appropriate challenges for very capable students?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite A Bit A Great Deal

Appendix D: Demographics Questionnaire

Teachers Demographic Questionnaire

Please respond to some simple demographic information. Circle the response that best applies to you. Thank you.

What is your gender?	Male	Female				
What is the highest degree/certification you have earned?	Bachelors	Masters	National Certification			
Including this year, how many years have you been teaching?	0 to 4	5 to 10	11 to 15	16 to 20	21 or more	
What grade level do you teach?	Kinder- garten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade
How many years have you taught at this grade level?	0 to 4	5 to 10	11 to 15	16 to 20	21 or more	
How many trainings from your school system have you received on either Response to Intervention or early-intervening services (including DIBELS)?	None	0 to 1	2 to 3	4 to 5	6 or more	
How many trainings for either Response to Intervention or early-intervening services (including DIBELS) have you received outside of your school system?	None	0 to 1	2 to 3	4 to 5	6 or more	
Did you receive any undergraduate/graduate training on Response to Intervention or progress monitoring?	Yes	No				
How prepared do you feel you are to engage in Response to Intervention early-intervening services in your school/class?	Very Prepared	Prepared	Somewhat Prepared	Somewhat Unprepared	Unprepared	Very Unprepared
My school has been engaged in response to interventions for:	Less than 1 year	1 year	2 years	3 years	4 years	5 years or more

Approximately what percentage of students in your class are experiencing significant academic difficulties and are not identified as special education?	0-5%	6-10%	11-15%	16-20%	21-25%	25% or more
Approximately what percentage of students in your class are experiencing significant behavioral difficulties and are not identified as special education?	0-5%	6-10%	11-15%	16-20%	21-25%	25% or more
Approximately what percentage of students in your class are currently receiving special education services?	0-5%	6-10%	11-15%	16-20%	21-25%	25% or more
Please check any of the following activities that your school is involved in:	<input type="checkbox"/> DIBELS at the beginning of the school year. <input type="checkbox"/> DIBELS throughout the school year. <input type="checkbox"/> Evidence based instruction for all students. <input type="checkbox"/> Problem-solving school based teams. <input type="checkbox"/> Evidence based interventions for at-risk students.					

Please review your survey to ensure that you have not skipped any items. Then fill out your name on a slip of paper in the front of the room and put it in the box to be entered into the drawing. Again, thank you very much for your participation!