# THE ACHIEVEMENT LINK BETWEEN RESPONSE TO INTERVENTION AND STANDARDIZED TEST SCORES IN TWO SELECT MIDWESTERN

## HIGH SCHOOLS: A CASE STUDY

A Dissertation Submitted to the Graduate

School in Partial Fulfillment of the

Requirements for the Degree

Doctor of Education

By

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## ABSTRACT

## THE ACHIEVEMENT LINK BETWEEN RESPONSE TO INTERVENTION AND STANDARDIZED TEST SCORES IN TWO SELECT MIDWESTERN HIGH SCHOOLS: A CASE STUDY

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This descriptive statistical dissertation was designed to evaluate the efficacy of interventions available in a high school district on academic achievement. The district had a variety of academic and behavioral interventions available. Several types of norm-referenced assessment data were administered to students. While the entire student body was monitored for potential identification for interventions, not all interventions were made available to all students. Some were provided on a referral-only basis and others were self-selective, at the choice of individual students.

The researcher developed a database to run descriptive statistical analyses to determine which interventions had the best outcome results on assessments. District assessment data includes NWEA MAP, ACT, PLAN, and Scholastic Reading Inventory. Data on all students was included in the database and the following interventions were tracked: literacy support, supplemental guidance counseling, night school, after-school tutoring, and unit recovery. Growth was measured in both math and reading.

## ACHIEVEMENT LINK BETWEEN RIT AND TEST SCORES

Doctoral Program School of Education and Human Performance Aurora University

**Dissertation Approval** 

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The Achievement Link Between Response to Intervention and Standardized

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High Schools: A Case Study

By: Michelle Zwerling

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## LIST OF ABBREVIATIONS

Abbreviation	Explanation
ACT	American College Test
AYP	Adequate Yearly Progress
EBD	Emotional/Behavioral Disability
ELL	English Language Learner
ENL	English as a New Language
EPAS	Educational Planning and
	Assessments
ESL	English as a Second Language
EXPLORE	8/9 <sup>th</sup> Grade version of ACT
HSGI	High School Graduation Initiative
IEP	Individualized Educational Plan
ISBE	Illinois State Board of Education
LD	Learning Disability
MAP	Measures of Academic Progress
NCLB	No Child Left Behind
NWEA	Northwest Education Evaluation
PARCC	Partnership for Assessment of
	Readiness for College and Careers
PLAN	Pre-ACT
PSAE	Prairie State Achievement
	Examination
RIT	Rauch Unit
RtI	Response to Intervention
SES	Socioeconomic Status
SIG	School Improvement Grant
SIP	School Improvement Plan
SRI	Scholastic Reading Inventory

#### Chapter 1

Initially, this proposed study began with an exploration of the literature related to academic Response to Intervention (RtI) in non-private<sup>1</sup> pre-kindergarten through high schools in the United States. As this study design progressed, the novelty and limited implementation of RtI in 2011 (the second semester of the required mandate of RtI in American schools) became apparent in the scant number of viable studies on the topic in peer-reviewed journals. Concerned that the researcher would not be able to find a sufficient number of appropriate resources on academic RtI, this evaluative quantitative case study was then expanded to RtI in general, both academic and behavioral.

RtI models look different for various age groups; early intervention (kindergarten through third grade) looks different than the RtI that tends to occur in later grades. Controversy over whether RtI can be applied to lower grades also emerged because there are questions as to whether an intervention can exist prior to when instruction has occurred. This controversy led to the exploration of differences between the early intervention and RtI models as they pertain to literacy. Early intervention models, as they existed prior to No Child Left Behind (NCLB) tended to be broader in scope and offered more services to all students and concerned themselves less with targeting specific students. Many elementary schools benchmarked students with various literacy and numeracy screeners long before the government mandated all public schools to engage in such practices. For intermediate, middle, and high schools, assessments for all and

<sup>&</sup>lt;sup>1</sup> This paper does not look at private schools because they are not required to provide the same services as public and charter schools. As research unfolds over the course of my dissertation, more specificity may be explored in the variances between traditional public and charter schools.

interventions have had a trickle-up effect. Schools working with different age groups operate differently from the setup of their schedules, to the length of time that students work with any given teachers, to the resources at their disposal to tackle various instructional deficits. These differences are also compounded by economics and the mobility of their relative populations.

In the Midwestern area where this study will be conducted, one of the major factors impacting the budget of schools is property values, so schools in more affluent areas have more resources to invest, in addition to what parents can give to their children outside of school. Districts with more poor families tend to have lower property values, therefore less money is available to be collected from property taxes for the school's general education fund from families with less disposable income to invest in the children's supplemental education (such as private tutoring, books in the home, and various other extracurricular experiences) (see: Karp, 2003).

Additionally, less money in a school's budget means cuts in discretionary spending for areas such as professional development, too. One of the issues brought up in much of the literature was the amount and quality of professional development involved with launching, maintaining, and measuring the success of RtI programs, so that revisions can be made. This led to the notion that RtI is a capacity-building measure for students, faculties, and administrators that requires a systems approach to data-based decision/revision making to schools.

The majority of the intervention research over the past two decades for non-special education students comes from studies focusing on elementary schools (see: Bianco, 2010; Danielson, Doolittle, & Bradley, 2007; Nunn & Jantz, 2009). This is because early intervention has existed in schools for decades, whereas RtI was birthed from No Child Left Behind (NCLB) legislation during the twenty-first century. Without a research base for offering literacy interventions to older students, the early intervention model utilized by elementary schools was initially applied to middle and high schools. For struggling readers, they fall farther behind their peers performing at grade level with each school year, meaning that the size of their academic deficits widens each year. This decreases the likelihood that they will catch up to grade level by the time that they graduate high school (Engle & Black, 2008).

From a legislative standpoint, NCLB legislation replaced what was formerly known as early intervention with RtI and expanded to apply to all grades, first through twelfth, in Illinois.<sup>2</sup> Literacy interventions are further complicated by the fact that there is a pedagogical transition that tends to occur, around the fourth grade level, from learning-to-read to reading-to learn (Vaughn, 2010). Students who do not successfully learn the former in the elementary grades are at a great disadvantage by the time that they reach the intermediate grades, where much of the learning revolves around amassing content. Students who do not learn-to-read are at a disservice when they need to read a science or social studies textbook, but lack the tools to gain meaning from what they mean and, in some cases, do not even have the ability to decode it (Engle & Black, 2008). The differences in learning expectations for younger learners and older ones mean that students in fourth grade or above face greater hurdles when it comes to academic intervention to remediate literacy gaps.

With RtI came the addition of benchmark assessments for all students to identify struggling learners across grade levels and progress monitoring assessments for students whom

<sup>&</sup>lt;sup>2</sup> In Illinois, kindergarten is not legally mandated, creating a grey area as to whether RtI is required for students in kindergarten. Some school districts will provide services to students in kindergarten and pre-kindergarten, but it cannot be mandated in places where public instruction for those grade levels is not required. It should also be noted, in places where kindergarten is available, some schools offer academic/instructional kindergartens focused on the acquisition of literacy and numeracy skills, while others are social and designed to teach children how to interact with their peers. Head Start programs are funded by other different provisions and may be required to provide academic services. It should be noted that students eligible for such programs are considered at-risk in order to gain entry.

are identified as such. Since they are typically administered three times annually (fall, winter, and spring), the first test establishes a baseline, the second two measure growth, and with more data can be used as both formative and summative assessments. Various tests have different methods of scoring, but they tend to specify grade level equivalencies. An average student, defined as one not in need of an intervention, is expected to gain a full academic year of competency over the course of a school year. The purpose of an academic intervention is to accelerate growth, to help struggling students catch up. Therefore, students who are successful with interventions should gain more than a single academic year over the course of a school year.

For an early elementary school student, a second grader might be performing six months below grade because they have difficulty decoding polysyllabic words. After 12 weeks of intervention, that student might be on par with his or her peers and the intervention discontinued. A high school freshman reading at a fifth grade level would require a considerably longer intervention, which means that over the course of a single academic year, more growth should be recorded on their assessments, if the intervention is successful. In the literature for early interventions, there is rarely longitudinal data, even for the duration of an entire school year, because of the brevity of the interventions themselves. With older students and interventions of longer duration, the opportunity to monitor the effectiveness of the intervention over time and the consistency of growth is more readily available with older students.

Since the purpose of an academic intervention is to accelerate student growth and fill the academic gaps that hold them back, this case study will seek to investigate the variance in growth between students identified as at-risk in a specific school district in comparison with the growth of students who do not receive that designation, across two high schools. It should be noted that the target district is ethnically diverse and economically disadvantaged, so the

majority of the students in the school currently perform below the fiftieth percentile nationally. While these circumstances make for a more challenging population, it also provides the opportunity to work with students performing several years below grade level and to follow these students for a longer period of time.

The district offers a variety of interventions, both those self-imposed by students, such as peer tutoring in the mornings and after-school tutoring (with certified teachers), and those that are assigned by the school during and after the school day including supplemental direct instruction, courses segregated based on skill level, additional instructional support in the classroom (co-taught courses, teachers' aides), night school, and credit recovery programs. Using assessment data, students will be tracked during the course of a school year to measure growth and determine variances in results among the different interventions offered. Ideally, the conclusions drawn from the research could be used to drive how schools invest in RtI to maximize student growth by targeting investments toward the interventions that maximize growth.

## **Purpose Statement**

The purpose of this quantitative, evaluative case study is to examine the relationship between Response to Intervention (RtI) and improvements in academic achievement as measured by the state's assessment protocols (PSAE), Northwest Evaluation Association's (NWEA) Measures of Academic Progress (MAP), and the Scholastic Reading Inventory (SRI). This study will explore whether students in Tiers II and III of a district's RtI framework, who received interventions, exceed the growth of students in Tier I, who do not receive any supplemental instruction. Growth for students who need interventions but do not receive them, due to limited resources, will also be compared and analyzed.

#### **Relevance of Study**

Response to Intervention has been legally mandated for several years. Most of the academic intervention research has focused on literacy at the elementary level. This is because early intervention has occurred in elementary schools for decades. Tracking students in middle and high school has gone in and out of fashion as a recurring trend. The research presented in the literature review will demonstrate that struggling students require instruction at their instructional level rather than at their grade level and both the student and teacher need to be invested in the instruction.

During the course of research for this study, the jargon surrounding intervention changes so much that many school districts have switched from referring to intervention programs as RtI and moved to calling them Multi-Tiered System of Supports (MTSS) (Metcalf, 2015). Interventions are a jargon-heavy business and this most recent shift in terminology resulted from the US Department of Education changing RtI to MTSS.<sup>3</sup> With this change, Title I monies could be spent to cover interventions with less specificity to the level of economic status of the students who benefit.

#### Definitions

• Response to Intervention (RtI): A multi-tiered intervention system for academics and behavior, designed to provide alternative learning modalities to those who have not mastered grade-level skills as quickly as their same-aged peers. In the three-tiered

<sup>&</sup>lt;sup>3</sup> Beginning in the 2014-2015 school year, NCLB grant applications were no longer allowed to make reference to "Rtl" and were instead only allowed to reference MTSS. Failure to comply resulted in grants being returned to schools by state agencies for revision.

system, the majority of students are considered to be Tier I, where core instruction takes place. Tier II varies between districts, but tends to reflect students somewhere between the tenth and twenty-fifth percentiles and utilizes small group instruction. Tier III is normally for students performing at or below the tenth percentile; specialists, rather than classroom teachers, usually work with a few students at a time in intensive interventions. Students unsuccessful with Tier III interventions are often referred to problem solving committees to move forward with evaluation by a school psychologist.

- Muti-Tiered System of Supports (MTSS): The new terminology for RtI as referenced in government grants, effective 2014.<sup>4</sup>
- Tracking: An educational trajectory for middle and high school students that involves placing students in classes of varying difficulty based on their aptitudes. In some schools, this can be done on an individual class basis, placing a student in an honors math class because she excels there, but in a regular English class because she does not perform above grade level in reading. The type of tracking that is often condemned places students at the same level for all classes, such as placing students in a remedial track because of low math scores for a student who excels in reading, social studies, and science.
- Intervention: Intentional instruction designed for students performing below grade level.
- Growth: Improved scores for the same student between benchmark assessments or an upward trend in progress monitoring data.

<sup>&</sup>lt;sup>4</sup> The change in terminology may have also been a corrective measure on the government's part to reinforce that interventions are designed to supplement the academic curriculum and not replace it. There were instances of schools trying to change students' core class (putting them in special education environments without diagnosing their needs or getting them services via Individualized Educational Plans [IEPs]).

- Title I: Federal grant monies awarded by state agencies based on the number of students in attendance who are eligible for free and reduced lunch.
- Benchmark Assessment: A research-based assessment administered at least three times per year, usually fall, winter, and spring, to measure student performance. It provides school personnel with a pulse on students at the beginning of the year, measures how much students grow and whether their trajectory is at, above, or below grade level. The data can be used as an artifact in the data collection process.
- Progress Monitoring Tool: An interim research-based assessment used to monitor students receiving interventions. A student in a Tier II intervention might be assessed every other week while a student in a Tier III intervention could be assessed weekly.
- Triangulation: In the RtI/MTSS decision-making process, using at least three pieces of data before making a decision to commence, continue, or discontinue interventions. This method is also used for further referring students to school psychologists for evaluation if they are not successful with interventions.
- Artifact: A piece of student data used in the RtI decision-making process.

## Conclusion

While interventions are an expensive endeavor in any district, they tend to be the most expensive and necessary in the neediest districts. School districts charged with educating highpoverty, at-risk students are the ones most likely to educate students who struggle with reading and math. More students who require interventions mean hiring more interventionists, purchasing more intervention materials, and buying progress monitoring tools without any budget infusions. Overall costs to districts can be reduced by providing interventions to students when they are younger and catching them up before they fall too far behind. The farther behind that a student falls, the greater their need for interventions, the more money it will cost, the longer it will take, and the less likely a student is to catch up to their grade level peers.

Students who are unable to read or perform math tasks on grade level are at a greater risk for failure/retention and thereby can turn into students at risk for dropping out. RtI/MTSS programs are supposed to help increase the number of students who graduate from high school, college and career ready. To complicate matters further, the Common Core standards were rolled out by the Department of Education for all grade levels at once. In most states, they were more rigorous than the previously existing state standards. For instance, students are expected to become competent at conducting research earlier and grasp higher-level math concepts sooner. For middle and high schools, this can be interpreted to mean that students should have had three or more extra years of instruction that they have never received when it comes down to a high stakes test. Then, when this is applied to a high poverty school where students were struggling under the old standards, far more students are in need of interventions that are more intensive than schools have ever seen.

Every school is looking for a magical cure-all and, in some cases, this perpetuates the cycle of schools buying new programs and discontinuing them before the full brunt of their effectiveness is known. This is being done in a climate of tighter budgets and the government is mandating that schools need to find the money somewhere. The goal of this research is to determine which interventions across the two high schools in this Midwestern school district provide the best outcomes for the energies and monies invested.

#### Chapter 2

RtI was birthed during the George W. Bush administration and has seen many changes with the introduction of the Common Core and a new president. If RtI is the nation's strategic plan for increasing student achievement and reducing the number of students performing below grade level, then, like any strategic plan, it should be tested before it is revised. Covey argues that strategic plans require three to five years of implementation prior to making revisions just to see if they work. He also argues that entities need to start with a common vision (Covey, 2013). RtI in the United States began with a very general overview from the federal government and actual implementation left up to states and school districts with limited guidance. Related revisions and Common Core objectives related to RtI continue to be added and changed.

As a government-mandated program, the legislation mandates that intervention must be data-driven, but the government neither provides money to support the endeavor nor specifically outlines how students should be identified, leaving the problem of application of RtI widely interpreted, depending upon the individual state. The single area where most states agree is that they create a graphic to depict their RtI programs as a pyramid that shows the majority of students at the bottom of the pyramid and not receiving external interventions. The number of tiers in the pyramid, whether special education students are included, and what occurs in each tier vary by state and sometimes even from school district to school district within a county (Walker, 2010; Cox, 2009).

In some large districts, plans can vary between schools within the district and some people argue for good reason (Carlson, 2011). Early intervention has been working at some elementary schools who possessed the resources to offer it for decades and have elected not to discontinue what they have and in place and have found success with (VanDerHeyden, 2010). Early intervention programs, generally, do not fit in middle and high schools because of less fluid scheduling and differences in the needs of students and the resources available in those schools (Daly, 2008).

The purpose of this review of literature is to present information about the rhetoric and observed results of Response to Intervention in American public schools while exploring the observed successes and failures. The review will start with an overview of RtI, its shape at its origination, and how it has morphed since. Competing RtI pyramids will be compared and contrasted. Within the RtI overview, delineations and overlap between special education and interventions will be analyzed along with political and economic drivers of NCLB legislation, specifically Titles I and III of the Elementary and Secondary Education Act.

RtI is often difficult to separate from Title I services, which are designed to help economically disadvantaged students catch up. Children who are eligible for free and reduced lunches have more services available to them, as do their parents, and their access predates NCLB. The access to such interventions accounts for why there is more longitudinal data on students and families in poverty. This group has had access to programs such as Head Start since the Reagan administration. To some extent, the federal funding has created more established markets for programs like early literacy interventions and accounts for some of the disparities in current availability and research outside of and beyond early literacy.

Literacy programs for elementary, middle, and high school students certainly exist, but the available resources and interventions decline as students age. Early programs like Head Start also seek to add a parent education component to support literacy and, in some cases, overall