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# Response to Intervention at the Secondary Level: The Effectiveness of a Tier One Model

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# Response to Intervention at the Secondary Level: The Effectiveness of a Tier One Model

**Abstract**

Research on the effectiveness of Response to Intervention (RtI) models used at the secondary level is limited. Most studies focus primarily on elementary settings. In addition to this, states vary in their progression through RtI implementation process. This study seeks to look at one model implemented at a high school with the purpose of increasing literacy for freshman and sophomore students. The study seeks to determine what are the most effective methods for implementing RtI and who should be tasked with the various roles within implementation.

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by

Kimberly A. Berliner

B.S. University of Northwestern, 2001

Action Research Report  
Submitted in Partial Fulfillment  
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Department of Education  
Dordt College  
Sioux Center, IA  
September 2014

Response to Intervention at the Secondary Level: The Effectiveness of a Tier One Model

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Kimberly A. Berliner

Approved:

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Faculty Advisor

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Date

Approved:

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Director of Graduate Education

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Date

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**Abstract**

Research on the effectiveness of Response to Intervention (RtI) models used at the secondary level is limited. Most studies focus primarily on elementary settings. In addition to this, states vary in their progression through RtI implementation process. This study seeks to look at one model implemented at a high school with the purpose of increasing literacy for freshman and sophomore students. The study seeks to determine what are the most effective methods for implementing RtI and who should be tasked with the various roles within implementation.

## Response to Intervention at the Secondary Level: The Effectiveness of a Tier One Model

No matter how we study, evaluate, test, and research best practices in education one fact remains: there will always be students who excel and students who struggle. Kids are unique and bring unique issues to how we teach and what we teach. So how do we meet all students' needs in this varied educational landscape? One recent approach to differentiating instruction and meeting students' needs using diverse approaches is Response to Intervention (RtI). While the concept of an RtI model first came about in the 1970s, in 2004, the reauthorized Individuals with Disabilities Education Act (IDEA) first used the language offering RtI as an alternative to the discrepancy model. IDEA specifically stated, "in determining whether a child has a specific learning disability, a local educational agency may use a process that determines if the child responds to scientific, research-based intervention as part of the evaluation procedures (Individuals with Disabilities Education Act [IDEA], 2004). Since that time, many districts across the state of Illinois and the country, have implemented various models of RtI based on their understanding of the expectation of the law. The purpose of this study is to evaluate the effectiveness of one district's method for implementing a Tier 1 model of RtI in the secondary classroom.

Since RtI's inception, there have been two primary models used: standard protocol and problem-solving. In the standard protocol approach, researchers look at the causes of reading struggles and seek to develop strategies to remediate these struggles (Griffiths, VanDerHeyden, Parson, & Burns, 2006, p.50). Groups of students are given more standardized, research-based interventions. On the other hand, in the problem-solving approach, "decision-making teams...follow a four-step process: (a) define the



problem, (b) plan an intervention, (c) implement the intervention, and (d) evaluate the student's progress (Berkeley, Bender, Peaster, & Saunders, 2009, p. 86).

Due to the ambiguous nature of RtI, there is a plethora of options for implementation of either model. This seems to lead to a "band-aid" approach to implementation where districts attempt to quickly throw together a new program. One could travel to five different districts in Illinois alone and see five varying approaches to RtI. According to Berkeley et al. (2009), Illinois still maintains a model that incorporates both RtI and discrepancy for learning disability eligibility, where the state board of education is available simply for guidance (p. 88). Due to this lack of state oversight, some districts are much further along in their implementation of RtI as opposed to other districts. In addition to the inconsistency in implementation, data collection, an essential part of a successful RtI model, is not happening regularly.

Further, in the rush to implement RtI, teachers are often left uninformed of who is responsible and what it means to use a research-based approach. Teachers are often told new programs and interventions are "research-based" but are left wondering what that even means. Teachers are left uninformed not only about the background research, but also about the rationale for who will implement the interventions. Some districts see RtI as a general education initiative that should be spearheaded by general education staff alone, while others define it as the responsibility solely of special education teachers. In addition, some districts design models for implementation that utilize both general education and special education teachers.

In the midst of this undefined implementation structure, the education system is left with many more questions than answers in regards to RtI. This study seeks to answer

the following questions: What research-based interventions have proven most effective in the high school general education classroom for Tier 1 students? Is the Academic Support model offered at the high school studied here an effective approach to meeting the needs of Tier 1 students at the secondary level? Is RtI most effective when implemented by special education teachers, general education teachers or both?

The purpose of the following definitions is to help the reader understand the educational context in which this research was performed and to provide clarity to terms commonly used in the field of education.

- According to the National Center for Learning Disabilities (2014), *Response to Intervention* (RtI) is “a multi-tiered approach to help struggling learners. Students' progress is closely monitored at each stage of intervention to determine the need for further research-based instruction and/or intervention in general education, in special education, or both” (para. 1).
- “The *Individuals with Disabilities Education Act* (IDEA) is a law ensuring services to children with disabilities throughout the nation. IDEA governs how states and public agencies provide early intervention, special education and related services to more than 6.5 million eligible infants, toddlers, children and youth with disabilities” (U.S. Department of Education [DoED], n.d.).
- Tucker-Smith (2011) states, “A commonly accepted answer defines *research-based* as the bar set by the What Works Clearinghouse (WWC). The WWC sets standards for reviewing scientifically based research

designed to determine if an intervention shows a positive effect on student learning. To meet evidence standards, studies must be ‘well-conducted randomized controlled trials (RCTs) that do not have problems with randomization or attrition, or regression discontinuity designs that do not have problems with attrition’” (para. 2).

- According to the National Center on Response to Intervention (2010), *progress monitoring* is defined as “repeated measurement of academic performance to inform instruction of individual students in general and special education in grades K-8” (p. 8).
- “*Specific Learning Disability (SLD)* means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. SLD does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage” (IDEA, 2004).
- In this essay, *discrepancy model* is used to mean the method of qualifying students for special services by identifying a discrepancy between IQ and achievement.

- For the sake of this study, *Tier 1*, will refer to universal interventions provided to all or most students in an educational setting.
- *Academic Support* (ASP) is the chosen method of Tier 1 intervention for the district studied for this essay. In this paper, ASP will refer specifically to a literacy push-in model in the high school homerooms.

### **Literature Review**

When considering the many challenges successful implementation of RtI involves, it is essential to look at other research that has already been completed. The RtI model itself is grounded in research-based practices and, therefore, it would be detrimental to implement blindly without first looking at what has been successful and unsuccessful thus far. One major roadblock to a thorough review of the research is the lacking presence of a significant focus on the area of secondary education. “The question of application of RtI at the middle and early high school years...is significant and remains unclear at present” (Mastropieri & Scruggs, 2005, p. 527). While there is a plethora of information on RtI in general, and implementation at the elementary level, there is almost nothing regarding implementation in grades six through twelve. Berkeley et al. (2009) states, “it is important to note that implementation, and even basic guidance for that matter, is scarce when it comes to secondary schools” (p. 94). While there is little research on RtI implementation there is research that supports a difference in instructional needs between elementary and secondary students. Therefore, “any model of RtI used...must take into account the differences in learning needs and instructional demands placed on students in the middle and secondary schools and the increased pressures associated with high-stakes testing” (Mastropieri & Scruggs as cited in Frase-Blunt, 2005, p. 527).

Despite the lack of RtI research at the secondary level, there is still much information beneficial to exploring the best methods for implementation. In order to consider the best way to approach RtI, it is important to first understand why there is a

need for RtI. Prior to the use of RtI, most districts used a discrepancy model to determine the need for special education services.

In 1977, when SLD was initially included as a disability category in special education, guidance from the U.S. Department of Education stated that discrepancy between student IQ and achievement should be used as the main criteria for determining SLD. Because each state is responsible for setting its own final regulations, large variability in defining this discrepancy resulted (Berkeley et al., 2009, p. 85).

As many educators, administrators, parents and other stakeholders have witnessed in the last forty years, there are many problems with the discrepancy model. Griffiths et al. (2006) argues, “the process by which most schools identify students as having a learning disability (LD) and in need of intense services has been described as confusing, logically inconsistent, and unfair” (as cited in Bocian, p. 50). The discrepancy model has often been criticized for taking too much time. While students may need services immediately, they often have to wait for a significant gap or discrepancy to present before they qualify for special education. “Some feel this has resulted in a ‘wait to fail’ attitude” (Berkeley et al., 2009, p. 85). Since 1977, it has become clear to the DoED, state and local educational agencies, and most other stakeholders that a new approach is necessary.

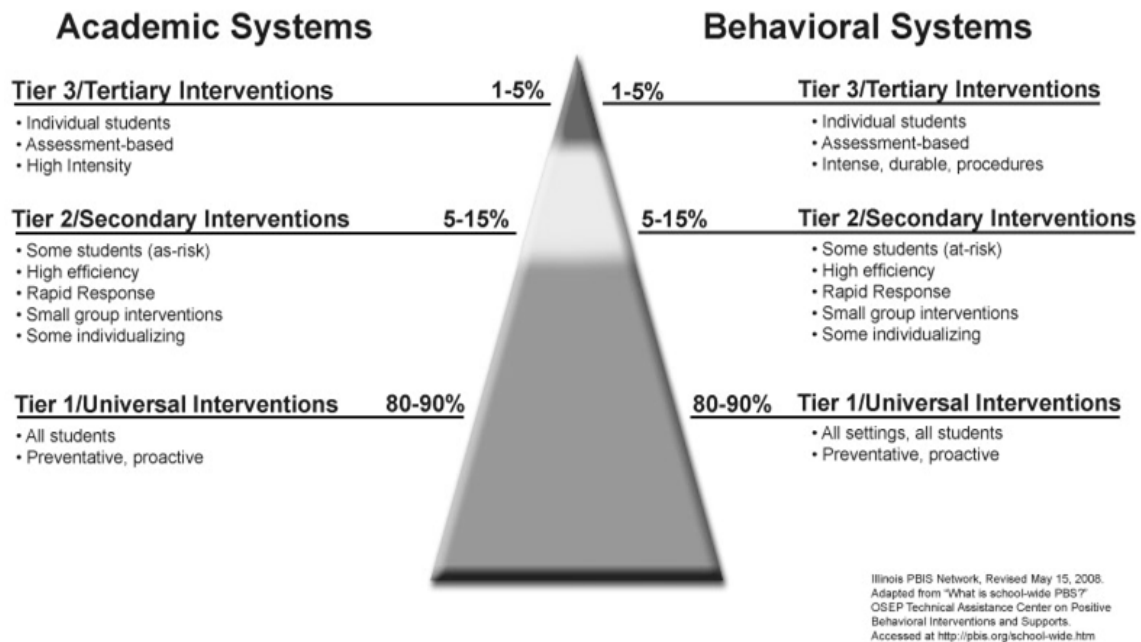
Research by Mastropieri and Scruggs (2005) identifies this trend:

The process of identifying students with LD has come to the forefront of a national discussion. Recently, the Office of Special Education Programs at the DoED convened a series of working groups, LD Summits, and symposia to discuss the issues for identifying individuals with LD. These discussions have

centered on replacing the current procedures for identifying individuals with LD with a RtI model...the current discussion presents compelling arguments from various positions (p. 525).

Thus the RtI model arose out of a need for an alternative approach to special education identification. Different states have chosen different ways to integrate this alternative approach. While some states have gone to an RtI only model, the state of Illinois is in a process of implementing an RtI model that still uses the discrepancy model for identification of more severe learning disabilities.

Researchers have also investigated the aspects of an effective RtI model. Griffiths et al. (2006) found there are three key parts to an effective RtI model, “(a) systematic data collection to identify students in need, (b) effective implementation of interventions for adequate durations, and (c) review of student progress data...” (p. 50). Regular data collection to target students, time, and progress monitoring are widely touted as the most important aspects to ensuring successful RtI implementation. To organize the type and intensity of intervention, RtI presents a three-tiered model as demonstrated in Figure 1.



*Figure 1.* RtI Three-Tier Model. This figure illustrates the three tiers of RtI and the intensity of intervention at each level (Illinois PBIS Network, 2008).

Mellard, McKnight & Jordan (2005) point out, “Another distinctive feature of RtI frameworks is that students’ tier placement are not determinations of permanent status” (as cited in O’Connor, p. 222). Most students’ needs would be met in Tier 1 where universal interventions are offered to support all students. As noted in Figure 1, this is more of a preventative tier. Teachers and administrators use the response to Tier 1 interventions to determine if students need the more intensive support offered at Tier 2. If students continue to struggle with the smaller group support in Tier 2, they would receive Tier 3 support, sometimes referred to as tertiary intervention. Tier 3 offers the highest intensity support and is very individualized. Berkeley et al. (2009) importantly note, “some models consider this tier a post-special education placement tier, whereas other models do not” (p. 87). Some states even identify a fourth tier, which is



specifically for special education students. Marston (2005) also points out: “Paramount to implementation of the three levels is a large scale screening of all students” (p. 540).

When seeking to ensure “adequate duration” for interventions, there are varying approaches to time commitment and expectations.

The current research in RtI varies in the quantity of intervention sessions that have been provided to students. The number and length of intervention sessions appears to depend on the framework (general education classroom or intensive tutoring) within which the interventions were applied, rather than on a prospective analysis of this particular question (Griffiths et al., 2006, p. 51).

Essentially, the amount and time length of interventions was not based on research, but rather on what was feasible for the school or district implementing the interventions.

Regardless of the inconsistency in time across the research, an effective RtI model is still structured to allow time for the intervention to have effect, as well as the need for consistent, timely feedback.

Regular and consistent progress monitoring is also an essential part of an effective RtI model. There are a variety of ways an educator can monitor success or failure in response to given interventions. Curriculum-based measurements (CBM), anecdotal notes, and charts are just a few of the many tools available for progress monitoring. Griffiths et al. (2006) states, “CBM has been identified as ideally suited to monitor progress within RtI” (as cited in Burns, Dean & Klar, p.54). One challenge that may be faced when using CBMs, or any progress-monitoring tool, is time constraint. Because regular data points are essential to validity, progress monitoring can be a burden on educators tasked with not only providing interventions but also collecting data. Research

also supports that when reviewing collected data students should be “compared to individuals who have had access to similar instructional and educational resources” (Griffiths et al. (2006), p. 54). This allows for an assessment of how a student is performing related to given and available resources.

Due to the lack of research on successful RtI implementation at the secondary level, there is also limited information regarding the most effective tier-specific interventions for high school. However, there is quite a bit of information regarding tier-specific intervention across the grade levels. Within a three-tier framework, interventions at the Tier 1 level are often focused on core-content instruction “strongly tied to research-based practice” (Martson, 2005, p. 540). Essentially, the intervention is usually day-to-day instruction in the regular education classroom with a greater focus on a curriculum with research to support its effectiveness. Marston (2005) also cites the 2002 *Common Ground Report*, regarding other aspects of successful tier interventions, when stating the significance that interventions are “timely and matched to specific learning and behavioral needs” as well as the fact that “intervention is most effective when it is implemented consistently with fidelity to its design, and at a sufficient level of intensity and duration” (p. 542). It is also important to note the importance of defining specific criterion for success within each tier. Mellard et al. (2010) summarizes tier effectiveness with three points for RtI decision makers to consider, “first, tier structures need to align with the school’s intended purpose for RtI...second, tier structures need to be coherent...finally tier structures need to be supportable within the current organizational capacity” (p. 219).

One of the research questions this study seeks to consider is who should be responsible for implementation of RtI. While many districts are training and implementing RtI using only their special educators, Berkeley et al. (2009) points out, “in all three-tier models, special education placement is considered to be a separate process that occurs after RtI remediation interventions have been exhausted” (p. 91). However, special educators should be specialists in intervention and support and already regularly collect data and complete paperwork regarding student progress. Some districts, instead, have turned to multi-disciplinary teams that include a variety of teachers and specialists prepared to provide necessary interventions. Few, if any schools and districts, have left the full weight of RtI on general education teachers.

Mastropieri & Scruggs (2005) express this question effectively:

RtI presents challenges for the changing roles of general and special education teachers as well as diagnosticians and school psychologists. Before these challenges can be met, the field needs to fully operationalize what is meant by the RtI model and provide answers to questions such as...who is responsible for ensuring that the procedures are implemented fully and with fidelity—special educators or general educators? (p. 526)

It seems the limited research that has already been completed in regards to who is responsible for implementation supports a multi-faceted approach that involves people in various roles in the educational system: “Our study suggests that RtI practices involve all staff and provide an alternative framework to the idiosyncratic piecemeal approaches that have historically characterized students’ educational experiences” (Mellard et al, 2010, p. 223).

In summary, there is varying information related to the research questions posed in this study. It is clear that the discrepancy model is no longer the best or only way to identify students who may need special education services. As an alternative, an effective RtI model will include the three components of data collection, sufficient time for intervention and regular progress monitoring. An effective RtI model also includes clearly defined tier interventions with criterion for upward or downward movement. Finally, research shows that the most effective implementation of RtI occurs when a multi-disciplinary approach is instituted utilizing the skills and expertise of general education teachers, special education teachers, related services and administration.

### **Methods**

In a large school district in suburban Chicago, IL, a new RtI model, known as Academic Support (ASP) in the district, was introduced at the middle school and high school levels. The special education teachers were tasked with providing literacy and math support. At one of the high schools, literacy support was provided twice a week to all freshman and sophomore homerooms for twenty-five minutes a day, while math support was provided to regular math classes four days a week for a duration of fifty minutes a day. The high school uses the ASP model in forty-eight ninth and tenth grade homerooms and seven math classes.

### **Participants**

For the student data portion of this study, six tenth grade ASP literacy homerooms were selected from homerooms where it was confirmed that literacy instruction was happening on a regular schedule. Some homerooms were not regularly participating in literacy ASP and, therefore, would not be a good measure of the program's success or failure. In addition, some homerooms' class lists were no longer available and, therefore, were eliminated for lack of access. No homerooms or students were purposefully left out of this study and selection was as random as possible. The average class size ranged from 28-32 students. In total, data was collected on 131 students. These students attend one of the larger high schools in the state of Illinois with enrollment near 3700 students. The school population is forty-nine percent male and fifty-one percent female. Seventy-five percent are minority students (Education Rankings, 2014). Fifty-eight percent of students are from low-income households. Forty-nine percent of students met or exceeded requirements in reading proficiency on the Prairie State Achievement

Examination (PSAE) and forty-five percent met or exceeded requirements in math proficiency (Illinois School Report Cards, 2012).

For the collection of teacher data, participants were completely random and by choice. Out of the 229 teachers at the school, forty-eight were special education teachers who participated in the ASP program. These special education teachers provided both math and literacy support and taught in classrooms across all curricular areas. They provided instruction in both general and special education classrooms. The survey was sent to all forty-eight special education teachers. The survey was only sent to special education teachers because they are the only staff members who provide the specified ASP being reviewed in this study. Of these forty-eight teachers who received the survey, thirteen completed it anonymously. Seven teachers who completed the survey were specifically providing literacy support, while the other six were in math or social science classrooms.

## **Methods**

While the goal would be a truly experimental design, for the sake of practicality and reliability a quasi-experimental design had to be used. In order for the data to be reliable, it was important that the literacy support was provided on a regular basis to the same students. Not every homeroom received the regular support they were supposed to, due to teacher preference, time and other factors. Therefore, the researcher narrowed the group of homerooms to choose from down to only those that regularly, at least ninety percent of the time, received literacy instruction. While only one group of students was used for this study, the control would be the students' freshman year scores, when no intervention was given, while the experimental group would be the same students' scores

sophomore year when they received literacy support. The reason the same group of students had to be used for both control and experiment was because there were no homerooms offered at the freshman or sophomore level that did not receive the literacy intervention.

### **Materials**

There were a few instruments used to investigate the research questions posed in this study. The main instrument used to evaluate student progress in the area of reading prior to and following intervention was the Measures of Academic Progress (MAP). The computer-based MAP assessment is a thoroughly researched evaluative tool that uses adaptive technology to measure student achievement at their current learning level. It is not grade level specific, and, therefore, met the needs of this study that compared data over two grade levels. “Because the RIT score is consistent, it can be used to accurately measure a student's growth over a period of time” (RIT Scores, 2012, para. 4). The MAP assessment is used in schools nationwide as tool for benchmarking, screening, progress monitoring and more. According to the Northwest Evaluation Association’s (NWEA) website (2014), the MAP assessment offers:

- Precision- “fully adaptive tests that produce a true measure of student growth and achievement
- Consistency- “student growth that can be measured over time from kindergarten through high school”
- Scalability- “aggregated data that meets the needs of decision-makers at all levels
- Flexibility- “create instructional groupings, determine place, predict proficiency on high stakes tests and more”

The MAP assessment is also aligned with state and national learning standards to keep “MAP tests relevant to the educational community” (NWEA, 2014).

Within the classroom setting, two resources were used as literacy intervention tools: *Text and Lessons for Content-Area Reading* (2011) and *Text and Lessons for Teaching Literature* (2013). According to the publisher’s website, “with *Texts and Lessons for Content-Area Reading*, Harvey “Smokey” Daniels and Nancy Steineke support content-area and language-arts teachers alike by pairing more than 75 short, kid-tested reproducible nonfiction texts with 33 simple, ready-to-go lessons that deepen comprehension and support effective collaboration” (Daniels and Steinke, 2011). Many of these resources were pulled from commonly recognized sources such as the New York Times, The Washington Post, etc. Daniels and Steineke (2013) also comment on their follow up to *Texts and Lessons for Content-Area Reading*, “the experiences provided in these [*Texts and Lessons for Teaching Literature*] 37 lessons parallel the readings and tasks recommended by the Common Core State Standards. The main difference is that our lessons put student curiosity and engagement first” (Daniels and Steineke, 2013). Neither of these resources is specifically found on the WWC website, however, there is data to support teaching literacy through content-area instruction and promoting student engagement.

The final instrument used in this study was aimed at gaining information from the teachers providing the intervention. As stated earlier, teachers were varied in their approach to providing the literacy intervention. While some teachers provided the support as mandated by the district, others adjusted to their understanding of student needs and the time available. It was important to understand the perspective of the



teachers and, therefore, a survey was created. A ten-question survey was developed on Google docs with four multiple-choice questions and six short answer questions (see Appendix). Using this tool allowed the survey to be sent and submitted electronically, as well as being returned anonymously.

### **Procedure**

The intervention for the course of this study was provided by the teachers within the school. During the participants freshman year, 2012-2013, no literacy interventions were provided in addition to the general curriculum. In the following year, 2013-2014, all tenth grade homerooms received literacy intervention. Students were told that literacy intervention would be offered twice a week during homeroom and was not optional. On days when literacy intervention was provided, no passes to labs or the resource center were allowed. Students received half a credit for homeroom where literacy instruction occurred, and, therefore, students were graded. Students were informed that they would receive two points a day for literacy. One point for participation and one point for work completion. The intention of providing a grade was that this would encourage students to more fully embrace the literacy instruction being taught. The literacy instruction offered varied between direct instruction, small group or partner work and whole class reading and discussions using the resources mentioned previously. The literacy intervention was provided on Tuesdays and Thursdays between the end of August and mid-December.

The survey was sent to teachers via district email in the summer following the intervention period. Teachers were told the survey be used to analyze data related to the ASP/RtI model being used in the district. The survey's directions also explained that all responses would be anonymous and would only be read by the researcher and advisor.

No names or identifying information would be shared with anyone. Due to a recent breakdown of trust between teachers and their supervisors, it was also reiterated that no specific information would be shared with district administration. Teachers were given 1-2 weeks to complete the online survey. Responses were collected and automatically distributed into a spreadsheet created by Google docs. By nature of the online survey, no identifying information is given when responses are collected.

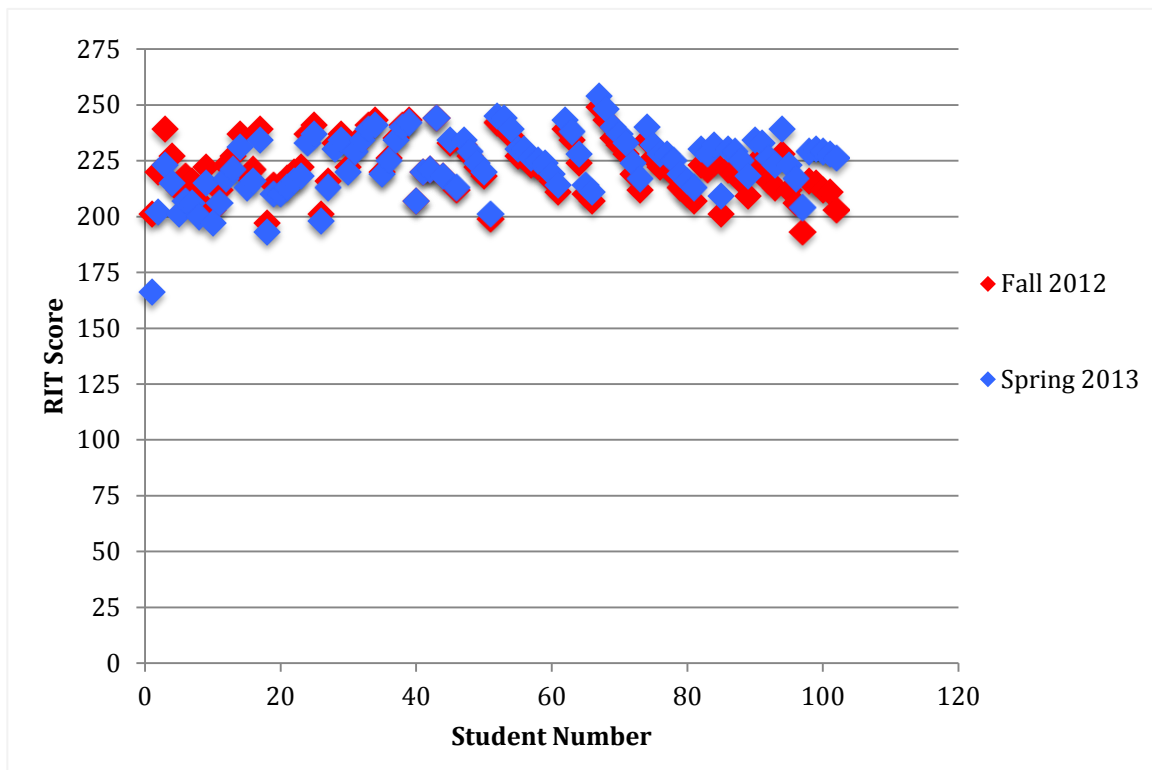
The MAP assessment was implemented in the district during the 2012-2013 school year. The assessment is given in the fall and spring of each school year in both Reading and Mathematics. The fall testing window fell between mid-September and mid-October. The spring testing window fell between late March and mid-April. The school's Director of Assessment assigned each English and Math class to a computer lab on a given date during a specific class period. Staff were trained how to proctor and administer the MAP test during a fall professional development day. On the assigned testing day, the students reported to their assigned lab and chose a computer. The teacher and an assigned proctor helped students to logon to the computers and select the appropriate test. Students were given unlimited time to complete the computer-based assessment. Students with testing accommodations in their Individualized Education Plans (IEPs) were given the documented accommodations. Throughout the test the proctor monitored testing via the computer and the teacher monitored by walking around the room. When students completed the test, their score was displayed instantly. They were then asked to log off the computer, sit quietly and wait for the period to end. If they tested into a second period, they were given a pass back to class. Map scores were posted to the NWEA website within 2-3 months of the testing period completion.

Data was collected throughout the summer following the 2013-2014 school year. Most of the data used in this study was retrieved from the NWEA website including MAP Reading scores for the control group (year one) as well as the fall testing scores for the group that received intervention (year two). The spring testing scores for year two had to be acquired directly from the school's director of assessment as they had not yet been posted on the NWEA website. The specific information pulled was the Rausch Unit (RIT) score and percentile rank of each student for fall and spring of each year. The information was then placed in a multi-page spreadsheet for data analysis.

## Results

### Data Analysis

When looking at the results of the study there are various data points that need to be considered to get the best picture of the relationship between literacy intervention and student achievement on the MAP assessment. In Figure 2, the first data set is presented showing RIT Scores from year one for all students tested.



*Figure 2.* 2012-2013 RIT Scores. This figure shows students' RIT scores for the fall and spring testing periods during year one.

A scatter plot was used to represent the information because there were numerous data points. 102 students scores were recorded for both the fall and spring testing periods.

The scatter plot also showed the general upward shift of students from fall to spring.

Most of the RIT scores fell between the 200 and 250. There were some outliers above or

below this range, most significantly one student's spring score of 166. The standard deviation for scores in this figure was 12.9.

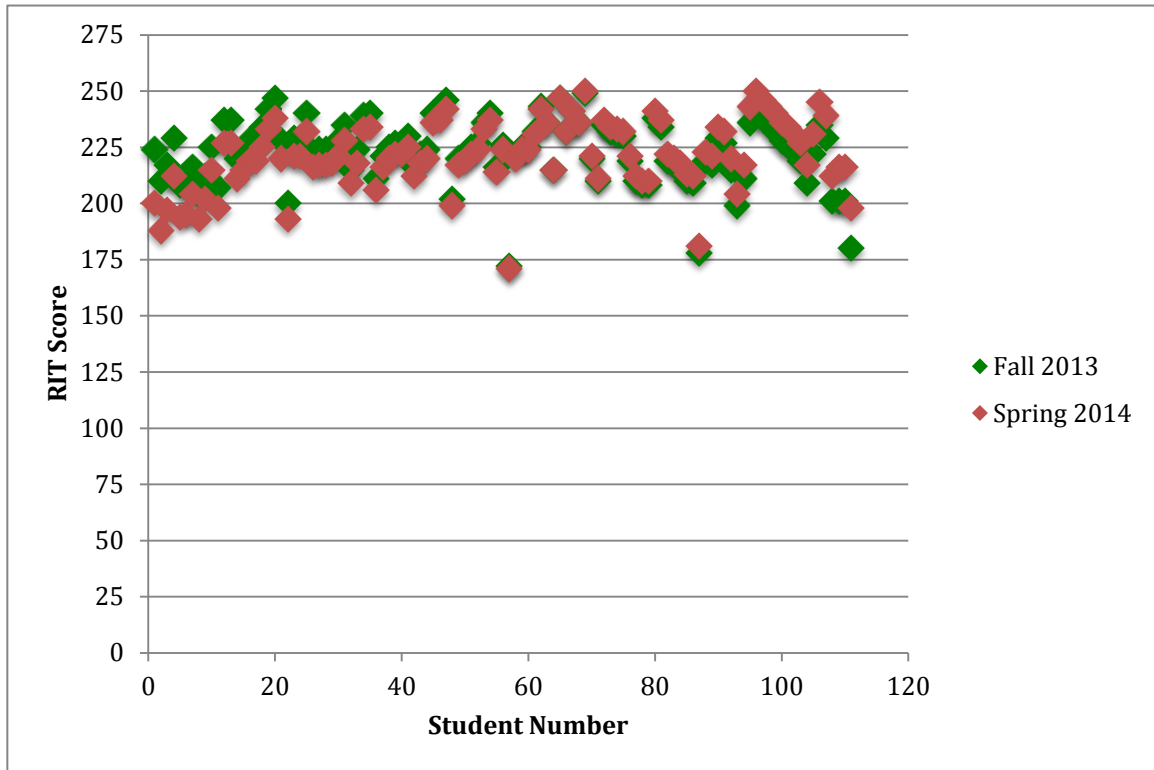


Figure 3. 2013-2014 RIT Scores. This figure shows students' RIT scores for the fall and spring testing periods during year two.

In Figure 3, similar data is shown but for year two. While overall the data in this figure was dispersed in a similar manner to the previous year, there were a greater number of outliers on the lower side of the test score range, which also resulted in a greater standard deviation of 14.5. Also, there was a more noticeable downward shift in the data from fall to spring.

Since percentile ranks are often divided into four groups, Figures 4-7 show the percentile rank breakdown for fall and spring semesters in both year one and two. In assessment analysis anything below the tenth percentile was considered significantly

below average. The 10<sup>th</sup>-24<sup>th</sup> percentile was slightly below average. The 25<sup>th</sup>-74<sup>th</sup> percentile was the average range and anything above that was above average.

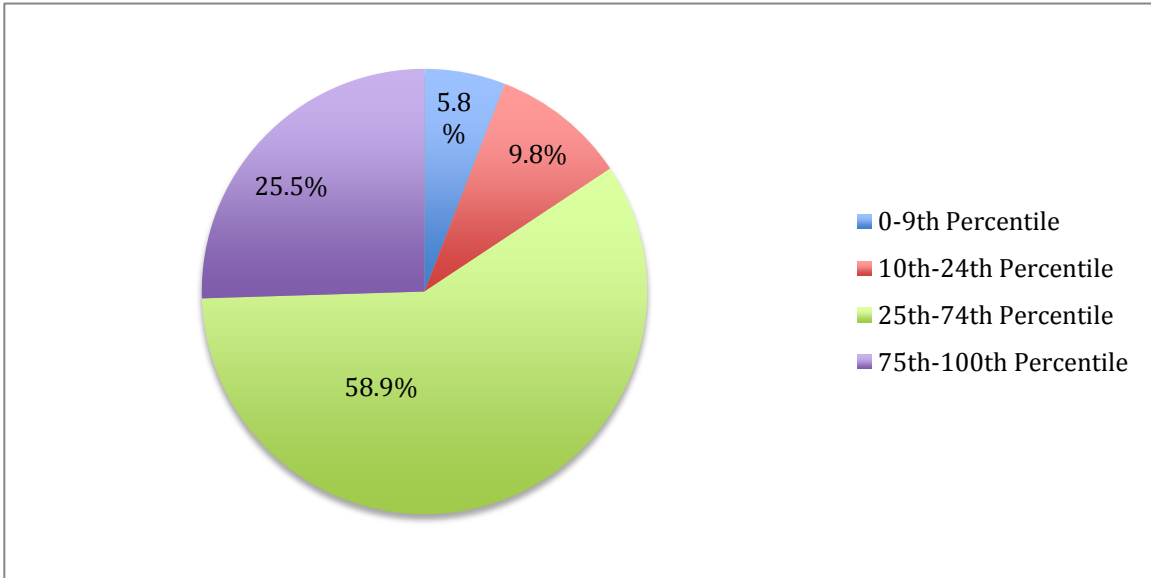


Figure 4. Fall 2012 Percentile Ranks. This figure shows students’ percentile ranks for the fall testing period during year one.

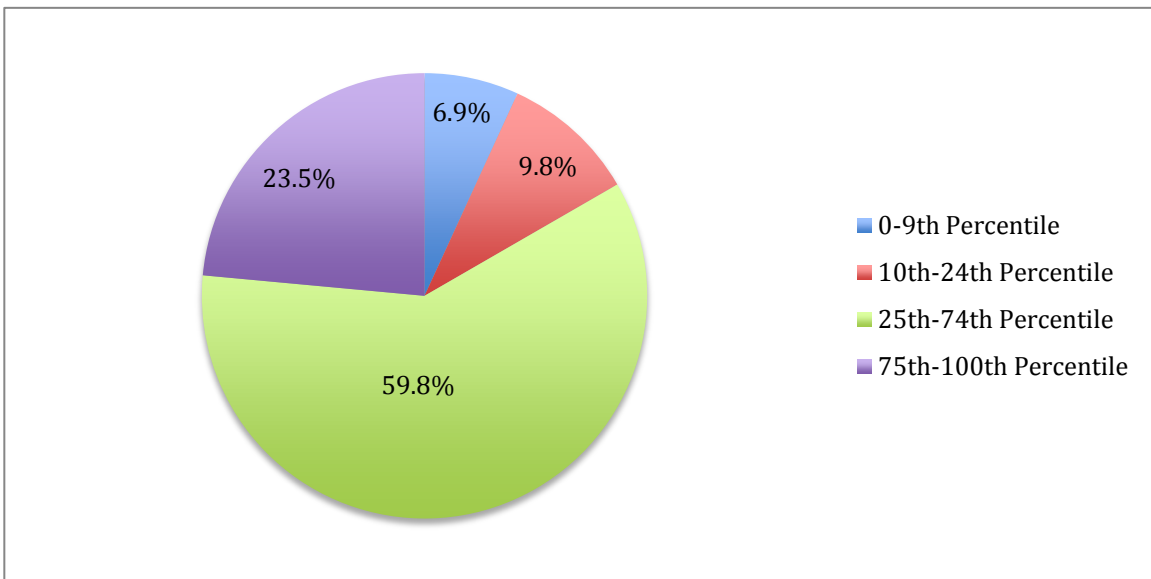


Figure 5. Spring 2013 Percentile Ranks. This figure shows students’ percentile ranks for the spring testing period during year one.

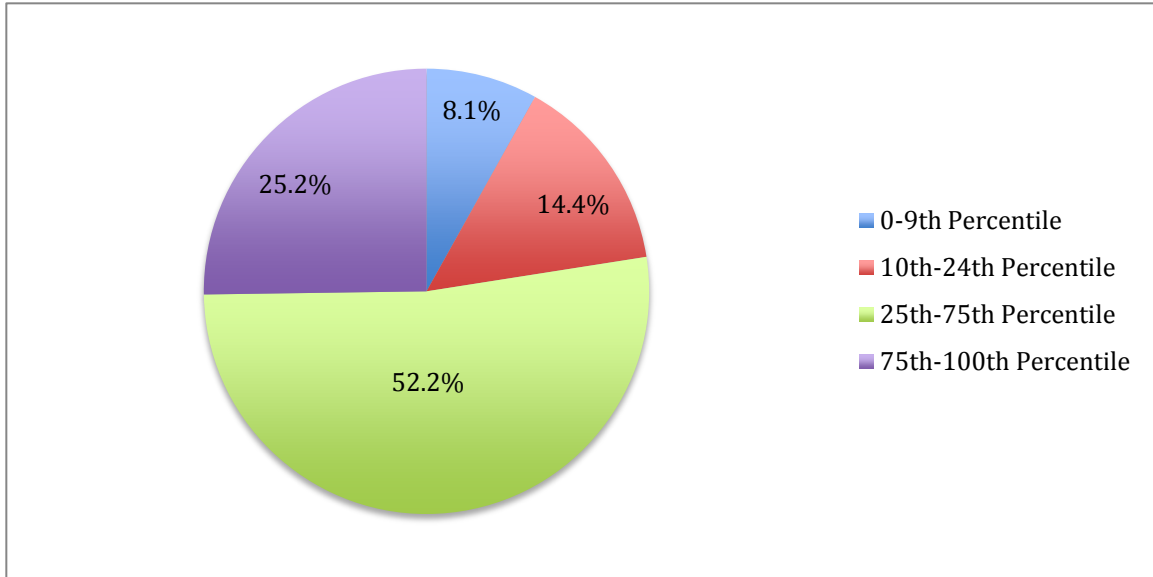


Figure 6. Fall 2013 Percentile Ranks. This figure shows students’ percentile ranks for the fall testing period during year two.

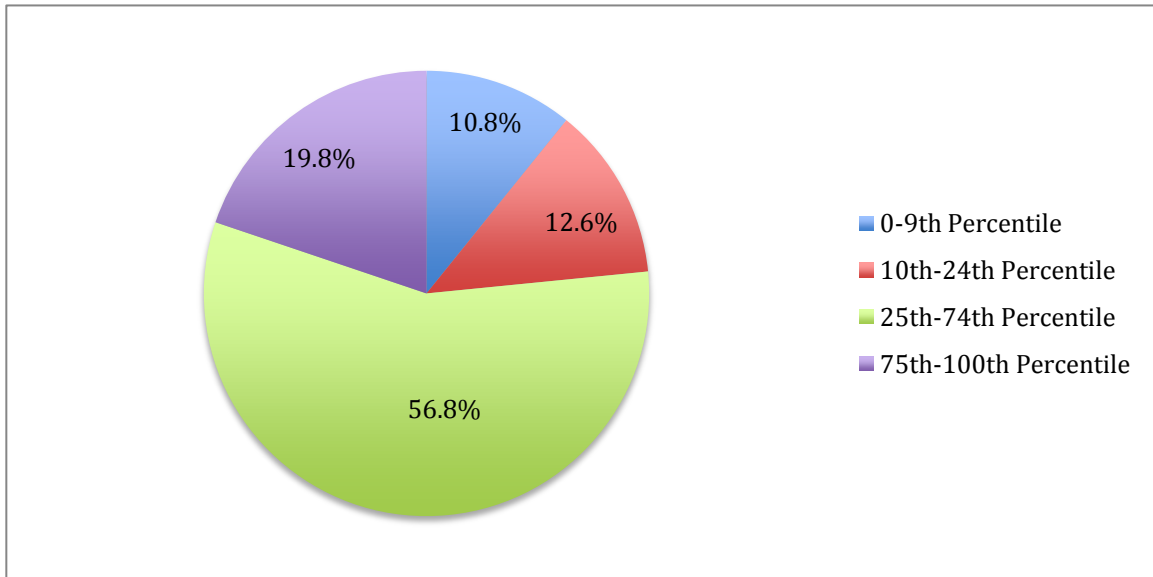


Figure 7. Spring 2014 Percentile Ranks. This figure shows students’ percentile ranks for the spring testing period during year two.

When looking at the progression of students percentile ranks the most alarming trend was the growth of the percentage of students who were below average or significantly below

average. Each semester this group grew, going from 15.8% in the fall of 2012 to 23.4% by the spring of 2014, while the average group generally stayed the same size and the above average group shrunk.

Another way to analyze the data is using measures of central tendency. Table 1 demonstrates the mean, median and mode for each semester of the two years studied.

Table 1

*Measures of Central Tendency in RIT and Percentile Rank*

	Fall 2012	Spring 2013	Fall 2013	Spring 2014
Mean RIT Score	222.0	223.4	223.2	221.5
Mean Percentile Rank	50.9	52.2	51.8	46.6
Median RIT Score	221	225	225	221
Median Percentile Rank	49	55	55	43
Mode RIT Score	222	234	224	220
Mode Percentile Rank	52	76	52	41

As a result of the outliers seen in the above figures, multiple data analyses are necessary.

Table 1 gives a greater picture of the how the data can be summarized.

In order to effectively answer the posed research questions, analysis of variance (ANOVA) was used to examine and scrutinize the data. Specifically, the means of the group receiving intervention were compared to the means of those with no intervention.

The independent variable was the literacy intervention provided to students with the dependent variable the test scores on the MAP assessment.

### **Findings**

The data presented above illustrates some interesting trends. Table 2 consolidates the data into yearly change showing both growth and decline.



Table 2

*Yearly Changes in RIT and Percentile Rank*

	Year 1	Year 2
Mean Growth (by RIT)	.68 %**	-.74%
Mean Growth (by Percentile Rank)	-17.4%**	-37.9%
Median Growth (by RIT)	1.12%	-.88%
Median Growth (by Percentile Rank)	1.4%	-11.3%
Increases	58	44
Decreases	43	68
Special Education Mean Growth	3.1%**	-1.2%
General Education Mean Growth	.5%	-.7%

*Note:* \*\*Denotes data sets with significant outliers.

So, does this data support an effective research-based intervention for Tier 1 students and is the ASP model specifically used in this study effective? As discussed in the literature review, research has little to no information on successful secondary interventions currently in place at the Tier 1 level. Thus, a study of a specific program could add understanding to the information currently available. Unfortunately, the data here failed to support this intervention program. When looking at mean percent growth, in year one, when no intervention was given, students gained .68% on RIT scores. In year two, when intervention was offered, there was an average decline of -.74%. Due to outliers mentioned in Table 2, the median growth may be a more accurate measure of actual growth in these categories. Yet, even using a different measure, there was still growth (1.12%) in year one, and decline (-.88%) in year two. Another important data point to consider, which was not as hindered by outliers, was the number of students who increased their scores versus the number of students who decreased. In year one, 58 students (56.9%) increased their MAP scores between fall and spring, while 44 students (43.1%) stayed the same or decreased. On the other hand, in year two, those numbers almost completely reversed with 68 students (60.7%) decreasing or staying the same and

43 students (38.3%) increasing. Table 2 also shows the difference in growth and decline between special education students and regular education students. The implications of this data will be discussed later.

In addition to data collected from students, a survey was sent to teachers to help answer if RtI is most effective when implemented by special education teachers, general education teachers or both. While the research shows that a multidisciplinary approach is best, the survey was sent to special education teachers, who, in this case, were the sole providers of RtI. All teachers that responded provided support the four days a week expected by the district. The time ranges for literacy intervention were between fifteen and twenty-five minutes a day. All but one teacher followed the district-approved literacy program and four of the seven added supplemental materials such as general curriculum or resources from the internet. No teachers performed regular progress monitoring, although this was not directed or mandated by the district. One teacher explained that, "Grades were given daily for work completion but NEVER monitored whether or not they learned/used the strategies that were being taught." When asked about training for providing literacy intervention, all teachers reported minimal to no training. Several teachers did mention that they were placed in subjects they already taught, and therefore, had a degree of expertise. When asked about their perception on the effectiveness of the intervention all teachers found it was not effective. Most claimed lack of engagement from students and no protocol for regular data collection and review as the main reasons for their negative response. In general, the sense from the special education teachers survey was they felt ill-equipped to provide the intervention and that

there was little to no buy-in from stakeholders. This information also supports the need for a multidisciplinary approach to RtI.

## Discussion

### Summary

In the ever-changing world of education, the idea of meeting needs of a diverse population of students can be a daunting task. This is especially true when seeking to effectively identify students who require special education services. While the discrepancy model was once the be all end all in eligibility determination, following the reauthorization of IDEA in 2004, RtI became the alternative to a discrepancy-only approach. Many districts nationwide, including in Illinois, have struggled with how to best implement an effective RtI model. This leads to questions numerous questions. What research-based interventions have proven most effective in the high school general education classroom for Tier 1 students? Is the Academic Support model offered at the high school studied here an effective approach to meeting the needs of Tier 1 students at the secondary level? Is RtI most effective when implemented by special education teachers, general education teachers or both?

In an attempt to answer these questions, districts have turned to current research. Research has defined the characteristics of an effective three-tier RtI model. These include the use of research-based interventions targeted to meet student needs, regular progress monitoring, time to respond to the given interventions, and instructional fidelity (Berkeley et. al, 2009, p. 86). Unfortunately, there is little research on effectiveness of interventions at the secondary level. Research does, however, support a multidisciplinary approach to providing tiered support including the involvement of teachers, administrators, and related services. The purpose of this study was to look at the effectiveness of a Tier 1 RtI model in the secondary classroom.

## Conclusion

**Implications.** While there may be a number of factors that affected the data collected in this study, the simple fact was that growth, on the whole, did not happen as a result of the intervention provided. So what can be taken away from the information gathered?

First, in order to implement an effective RtI model, the program needs to be consistent. In the case of this quasi-experimental study, there were teachers that didn't regularly and consistently provide the intervention. While the researcher chose homerooms where the intervention was provided consistently, imagine the results if all homerooms were included, even those where the literacy support was practically nonexistent. Even when evaluating the survey responses of teachers, there were somewhat varying time allotments and approaches to providing intervention.

The data collected from teacher surveys also showed another detriment to effective RtI implementation: insufficient student buy-in and engagement. There is no question that engagement is linked with achievement. Students learn more when they are engaged and when they buy in to the methods used to engage them. In this particular case students did not buy in to the literacy intervention and therefore were disengaged. Unfortunately, it is not possible in this case to clearly link the decline in scores directly to the students' disinterest in the given intervention. However, clearly disengaged students weren't making any significant growth.

Research also supports regular progress monitoring and data collection. In the study done here, it is clear that regular progress monitoring and consistent, defined data collection were not happening. This most likely prevented teachers providing the

intervention from informing their instruction with real-time data. It is difficult to teach well when there is lack of data to guide the direction instruction will take. When an intervention program is too rigid (i.e. you must read this article for this many minutes a day) it is destined to lack the flexibility needed to meet the needs of a diverse group of learners.

In order to effectively monitor progress, it is essential to define criteria for success. What success will look like in each independent school and district may not be identical, but there has to be a goal in mind. This goal also has to be effectively outlined and presented to stakeholders. This will create greater trust and investment. It may be beneficial to create conversations around goals and definitions for success to create a culture of open communication and teamwork. When identifying what success looks like for RtI, a timeline for interventions, monitoring and assessment is also necessary. In education, we often work with the end in mind. It should be no different with RtI. While there is no research-backed expectations for time allotment, schools and districts need to start with an idea of the length of interventions and how much time should pass between assessments. The greater point here is that RtI cannot just be thrown together without purpose and planning.

As discussed in the literature review, research supports RtI implementation involving professionals from various areas of educational services. For an RtI process to succeed, ‘regular education must assume active responsibility for delivery of high-quality instruction, research-based interventions, and prompt identification of individuals at risk while collaborating with special education and related services personnel’ (Marston,

2005, p.541). This demonstrates a need for quality professional development at all levels, including general education teachers.

Berkeley et al. (2009) outline a trend in RtI professional development:

Information related to professional development for RtI was almost always found through the special education link of state Web sites. According to Denton, Vaughn, and Fletcher (2003), ‘If models for the identification of students who are provided with special services are to take into account their responsiveness to high-quality classroom instruction and intervention, effective practices must go beyond the research setting and be routinely integrated into the everyday practices of our schools’ (p.94).

It is time to stop treating RtI as a special education initiative that no one else needs to deal with and this begins with strong, directed professional development for all teachers, administrators and related services.

It is hoped that this study encourages future research into RtI implementation and success, specifically at the secondary level. Pyle and Vaughn (2012) reiterate, “Results showed that there are unique features of an application of RtI in the secondary settings that vary from elementary settings” (p. 275). If this is to happen, there are some suggestions for improving on the design used here. First, it may be informative to use a comparative study of multiple implementation models. This may give a greater picture of what is working, rather than one model that simply didn’t work. Additionally, working with multiple schools could provide a greater pool of teacher information as opposed to the more limited observations of a smaller group of educators. While it was not within the scope of this study, more research is needed on RtI in other curricular areas,

especially math. While most of the research is centralized in the lower grades, it is also heavily focused on literacy. It would be interesting to see what is working in other curricular areas and even in relation to behavioral interventions. Any future research that focuses on the secondary level and what is working to meet the needs of all students would be helpful in better preparing educators to understand best practices for RTI implementation.

**Limitations.** In any study, there are limitations. As a special education teacher, the researcher will have bias in her ideas. While the goal is a bias-free examination of the facts, this is never completely possible. Put simply, human nature is a limitation on any study.

First, it is important to consider that there may be other factors, out of the researcher's control, that affected the decline in test scores. In the particular school used for this study, there was much upheaval in the past two years. During the participants first year, a new principal was hired who established high expectations and strict rules. During the second year, this principal was forced to resign and the school was left in a bit of chaos. Safety issues also came to the forefront of the school's focus during year two. When students do not feel safe at school, it can impede learning.

The personal preference of teachers also could bias this study. While the researcher did everything possible to get honest answers from teachers regarding the literacy intervention, there is no way to measure or control if the answers are a hundred percent accurate. Also, many of the teachers surveyed had strong opinions on the ASP program and this may have prevented them from looking for any good in it.



A final limitation out of the control of the researcher was the limited amount of data to analyze in regards to measuring the success of literacy intervention. The only consistent data collected on student literacy achievement was the MAP tests. Grades may be too biased of an indicator to use and can often be affected by other factors. There was also limited information on the secondary aspect of RtI. While assumptions can be made from research at other levels, there is no guarantee that these ideas would play out the same at both levels.

**Delimitations.** Whereas some limitations were out of the researcher's control, others were possible to control to some extent. For example, in the selection of students, the researcher could have completely chosen homerooms at random. This may have skewed the results or it may have given a more accurate picture of what is happening. Also, the researcher could have chosen to look at intervention models offered at other schools in Illinois, or even in other states. As mentioned earlier, a comparative study like this could give a clearer picture of what works for RtI.

Additionally, the researcher was limited in time. Given more time, there are endless possibilities to expand the research parameters. This is true for most studies, but in this case the timeframe for collecting data was limited. It was also during the summer when many school officials and teachers are out of the building and out of contact. This may have limited information gathering, specifically with teacher surveys.

Regardless of limitations, it is clear that the educational community is in the midst of defining RtI implementation and this process must start with clear goals and understanding of what RtI is and how it can be most successful. For RtI to truly achieve its original purpose, it is essential that all stakeholders are actively involved in the

process and feel involved in decisions being made. RtI has potential to change the face of education and reaching multiple learners in diverse ways, if implemented well.

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## Appendix

### Academic Support/RTI Survey

1. What Academic Support were you assigned for first semester of the 2013-2014 school year? Check all that apply.

- Literacy
- Math
- Other:

2. How many days a week did you deliver instruction or support?

3. How many minutes a day (approx). did you spend on direct instruction or support (not planning)?

4. Did you use any type of progress monitoring in your Academic Support?

- Yes
- No

5. If so, what type of progress monitoring?

6. What, if any, training did you receive to equip you to provide academic support?

7. Did you find the support you provided to be effective, in your opinion? Why or why not?

8. Did you follow the district-assigned reading program? \*\*Literacy Teachers ONLY\*\*

- Yes
- No

9. Did you supplement the district assigned reading program? \*\*Literacy Teachers ONLY\*\*

- Yes
- No

10. If your answer to the previous question was "yes," what other resources did you use?