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The Efficacy of After-School Reading Programs: A Case Study of a Midwestern Elementary School

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The Efficacy of After-School Reading Programs: A Case Study of a Midwestern Elementary School

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ABSTRACT (100-200 WORDS):

The development of phonological awareness and reading comprehension skills is an important progression in reading acquisition. In this study, an analysis was used to examine the efficacy of an after-school reading program for 29 children who participated in the program. There were 14 first graders who received between 0 and .98 hours of intervention while another group of 15 first graders received between 1.17 and 2.30 hours of additional support. After an Analysis of Variance test, first group of students who received minimal intervention scored better than the students who received the most support. Despite the amount of services provided, the student who received more intervention performed more poorly on the tests than the other students who did not receive as much intervention. Factors contributing to these results include genetics and the choice of the teacher to withhold the child from services because they are believed to catch up on their own.

Keywords: after-school programs, RTI, Tier 2, reading, benchmark

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How do children learn to read?

For many, the task of learning to read appears effortless. Given minimal instruction, children break down new words into their component sounds, blend those sounds back together to pronounce the word, and use schemas attached to the phonetic production. While children are learning to decode text, they are simultaneously learning the alphabetic principle.

There is extensive research indicating that children who understand the alphabetic principle early on become better readers (Byrne, 1998; Ehri, 1991, 1995, 1998, 2005). This is likely because children who can quickly associate sounds with the letters become fluent readers, allowing them to commit all their time to the comprehension aspect of reading, instead of struggling with the decoding phase. The alphabetic principle is demonstrated when children quickly associate graphemes (letters) with the phonemes (sounds) they represent. According to Ehri (2002), this principle is key in learning to read because once a child has learned to connect the letters of the words to the sounds of the letters, he or she is better able to discern the pronunciation of the word, connecting the written word with a stored lexical representation. As a result, quick grapheme/phoneme association increases the speed at which a child can decode words. This can, in turn, increase speed of reading for educational purposes.

Unfortunately, between 7 to 10 percent of children have difficulty learning to read (Clarke, Snowling, Truelove, & Hulme, 2010). Typically, deficits can be traced back to difficulty with phonological processing which can be broken down into three different abilities (Lonigan, et al., 2009). The first of these is phonological

awareness, or the capacity to perceive, capture, or manipulate individual sounds within actual words or phrases. Phonological awareness provides children with the understanding that words can be divided in to component syllables and sounds and, therefore, decode text. The second is phonological memory, which is the coding of phonological information for storage in the short-term memory system. As children hear unfamiliar words, they must map the word against their underlying phonological system, segment the word into its sound components and then blend it back together to make an actual word. When this ability is active, the child is attaching a particular meaning to the words he or she hears or reads so that when the word is presented later, he or she has a concrete referent in his or her phonological memory. The speed at which a child accesses the phonological code and associates it with the correct meaning is referred to as lexical access. This third component of phonological processing is critical because the faster a child pulls a phoneme from his or her phonological storage and matches it to a grapheme on the page, the more fluent of a reader he or she will be (Lonigan, et al., 2009).

What happens when there are problems in the acquisition of reading skills?

Learning becomes difficult for children when there is a breakdown in the acquisition of these early literacy skills. Providing extra support in terms of teaching phonological processing and the alphabetic principle assists students in achieving success. Research has shown that if children do not have the critical phonological awareness skills present by the end of kindergarten, they will be behind academically and that achievement gap will increase as they age (Clay, 1991; Bast & Reitsma, 1998; Skibbe et al., 2008; Chall, 1983). Chall (1983) coined the "Matthew

Effect," to define phenomena that occur when the struggling student fails to get the assistance required to bring him or her to the level of their peers. Because a child cannot build on early nonexistent knowledge, the educational gap between this child and his or her peers widens with age. Thus, school districts are tasked with ensuring every child meets literacy benchmarks. As a result, schools provide extra support services during the day or in after-school programs in the hope that all children receive the necessary instruction.

Solutions for students who have problems with reading

Response To Instruction/Intervention (RTI) is a method for reforming and instituting teaching and learning environments that are effective, pertinent and long-lasting for all students, their families and the educators who serve them (National Center on Response to Intervention, 2012). The Illinois State Board of Education required RTI to be fully implemented in Illinois school districts by January 1, 2008. The Illinois model is truly a response to instruction plan, in that teachers and other supporting professionals (e.g. speech-language pathologists, audiologists, psychologists, etc.) closely monitor what children are learning by collecting and analyzing quantitative data. This plan allows teachers to meet students where they are in terms of learning levels and give necessary support prior to academic failure, increasing the probability of later success.

Within RTI, the expectation is that the majority (80%) of students will learn via the planned grade level curriculum. The remaining 20% will need additional supports in order to benefit from the regular curriculum. After receiving small group activities focusing on areas of need, 15% of the children will be able to benefit

from the regular curriculum. Five percent of children will require intensive support in order to benefit from the regular curriculum. Figure 1 illustrates the three tiers of instruction.

In terms of literacy skills, tier two services can be provided to a small group of children by the classroom teacher, one-on-one or small group services provided by a specialist. Additionally, a classroom teacher can incorporate special accommodations for the child within the different lessons that he or she is teaching at the moment. Because there is a limited amount of time in the school day, after-school programs allow the students to maximize their learning by benefitting from all classroom activities and then receiving extra assistance after the teacher has taught certain subjects.

The purpose of this study is to determine if there is a significant difference in the spring reading ability between two groups of children who did not meet the initial fall benchmark of reading nonsense words. The first group did not receive services while the second group received Tier two services through Title I and/or an after-school program.

Figure 1
Three Tiers of Instruction (RTI)

http://eghs.d214.org/staff_resources/rti_response_to_intervention.aspx

Title I Reading Program

Title I is a section of the Elementary and Secondary Education Act (1965) that provides funding for disadvantaged students who need extra help to achieve academic success. According to the statement of purpose, there are several ways this overarching goal can be achieved. These include preparing teachers with excellent curricula and improving the quality of education, trying to close the achievement gap between students who perform at different levels, and holding schools and school districts accountable for the education and success of the children in their school district. Schools can have two different approaches to the system (National Center on Response to Intervention [NCRT], 2012). They can have a school wide system or they can have targeted programs. For the school who use the school wide approach, the Title I funds are used to improve the educational experience of the whole school and not just those that are falling behind (NCRT, 2012). However, schools with who utilize the targeted approach use the Title I funds to provide additional services to students who have been identified as falling behind or a failure to meet minimum requirements. The school targeted in the current study used a school wide Title I system.

After School Reading Program

The after-school reading program provided to some of the children in this study consisted of one hour and fifteen minute weekly sessions focused on increasing children's phonological awareness and reading comprehension skills. One to two first graders were paired with a university student who was enrolled in a class focusing on phonological awareness and emergent literacy. Phonological

awareness activities included rhyming, segmenting words into syllables and sounds, blending syllables and sounds together to make words, and talking about how sounds can be reordered to make new words. There are many different activities that require students to blend, sound out words, and remove or add sounds within words (Lonigan, et al, 2009) resulting in increased phonological awareness skills. For example, when students pair words that start with the same sound, they begin to understand that words are the combination of multiple sounds and these sounds can be manipulated to create new words. The ultimate goal is to help the child realize words can be broken into syllables and those syllables can be broken down into sounds. Likewise, individual sounds can be put together to make syllables and words.

Because children must have a good understanding of sound/letter correspondence to sound out novel words, each session started by singing an alphabet song that included the letter, a word that started with that letter, and the sound of the letter. The final activity of each session was writing a letter home. Children verbally stated what they wanted to write. There were encouraged to sound out the desired words and write down the associated letters. The children were allowed to write the letter exactly how they thought it should be written. In other words, spelling was not corrected but if sounds were incorrectly used, this error was corrected. The goal of this activity was to increase sound/letter correspondence and segmenting and blending words that will help the child to quickly decode words.

Reading comprehension was targeted by helping the children develop schemes of the Reading A to Z book used for a given session. The children made predictions of the book's content after reading the title and looking at the pictures. Additionally, the university students pre-taught all of the words presented in the book prior to asking the child's first reading attempt. Further, sight words were targeted in a variety of games so children would begin to automatically recognize them without having to spend time with decoding. When children read the text more quickly, they are more likely to understand the content.

Table I. Schedule

3:45	Snack in library (sound/letter correspondence activities)
3:55	flash cards assessments (**sound/letter correspondence or sight words**)
4:00	Read book title and take a picture walk through book looking for clues to help determine book topic
4:10	Use games to teach sight/content words from book
4:20	Read book(s)
4:30	Sound and Letter Games (rhyming, segmentation/blending, sound dominos, word wheels, sound/letter boxes); for more advanced children (comprehension assessments and discussion topics)
4:40	Write letter home – child writes at least one sentence (to reinforce sound/letter correspondence)
4:50	Play group phonological awareness game and pick a prize
5:00	Child takes home book and letter

Methods

Information was obtained from the school district after receipt of University Institutional Review Board and school district approval. Participants included 29 first graders at a Midwestern elementary school. The nonsense word recognition subtest of AIMSweb benchmarks was used to identify children who were at risk for

reading difficulty. For the task, children read as many nonsense words using typical letter/sound conventions as possible in one minute. This is a beneficial measure because if a child is able to decode a nonsense word for which they have no schema, they have the necessary segmentation and blending skills to real novel words.

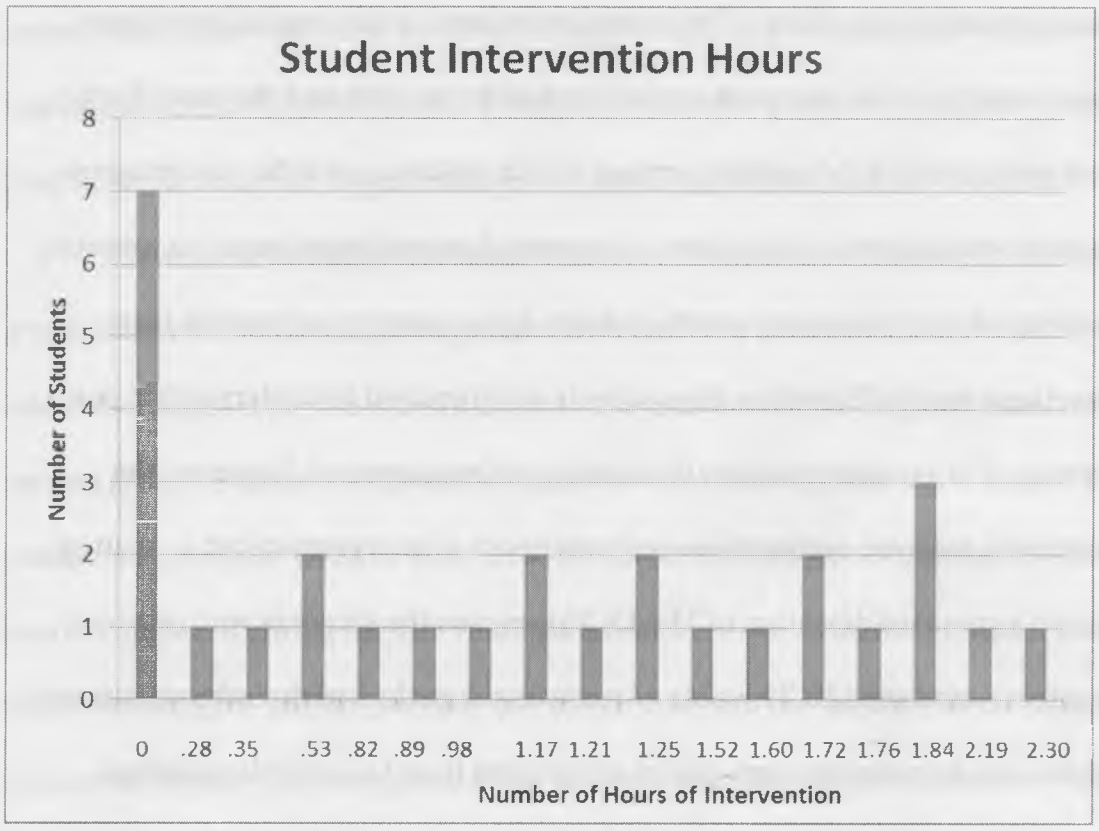
There were two distinct groups that were compared in this study. The first group consisted of fourteen first graders who received between 0 and .98 hours of additional support per week in Title I or in the after school reading program. The second group consisted of fifteen first graders who received between 1.17 and 2.30 additional hours per week in Title I and/or the after school reading program. The scores compared during the 2009-2010 academic year were across groups to see if there was a significant difference between the scores of the children who received additional support and the scores of the children who did not. The scores are based on the Spring AIMSweb Oral Reading Fluency Assessment. During this assessment, the child is required to read a passage aloud for one minute. There are several sections of reading. The words that are read correctly are calculated for the student (WRC) and the middle score of three passages is taken as the official score for the child (AIMSweb, 2011).

Results

An Analysis of Variance test indicated there was a significant difference ($p=0.028$) between the groups. An examination of the mean scores of both groups indicated the children receiving the least intervention accurately read more words in one minute than their peers who received more intense intervention. Table 2 gives the total number of students and the number of hours of intervention

received. The students who received one hour or less had a mean of 3.71 and the standard deviation was 20.163. The scores are related to the reading benchmark. The benchmarks are related to the grade level of the student and the time of year the test was taken (i.e. fall, winter, spring). As the children get older and progress through the educational system, they are expected to read more words in a minute. They must not only read more words, but also be as accurate as possible when reading these words. Therefore, the students who received less intervention read, on average, 3.71 more words than the benchmark requirement. However, the students who received between one and two hours of intervention had a mean of -10.71 and a standard deviation of 11.612. This means the students who received more intervention read 10.71 words or more less than the benchmark requirement. The difference between the two groups of students based on an individualized education plan (IEP) was also calculated. There proved to be no significant difference between these two groups (p=.747), indicating there was not a significant different in the number of IEPs between the two groups of children.

Table 2. Hours of Intervention



Discussion

The purpose of the study was to examine the efficacy of Tier 2 services for children who failed to meet a fall literacy benchmark. The children who received more intense intervention were expected to score at or above the level of the children who received little to no intervention at all. However, the results indicate this did not occur. Instead, children who received the most support performed the lowest. Therefore, it is possible there were other outside uncontrolled factors that affected the results. Information from only one subtest of the AIMSweb was used to identify children for the study. It could be that a child was unsure of that subtest and tested poorly in the fall but did have the emergent literacy skills necessary for reading.

The results received from the current study may be explained using genetic factor influences. Since the study did not test for language disorders or separate children based on known disorders, the expected results should have held true. It is possible genetics plays a part because prevalence of language disorders is 20-40% in children who have a family history of the disorder (Choudhury & Benaisch, 2003). However, the prevalence of language disorders in children who come from typically developing families is on 4%.

According to Choudhury and Benaisch (2003) children who are from families who have a family history of specific language impairment (SLI) scored lower on standardized expressive and receptive measures. Although the scores fell within normal range, they were still lower than the group who did not have a family history of SLI. Also, these children scored just as well as the children without a family history of SLI on nonverbal measures. This could be because there is a visual stimulus the child can depend on instead of using his or her language.

Another potential variable that may have influenced the results is the fact that teachers know the needs of their students. Teachers may have not recommended students for additional supports because they were confident the children would catch up on their own. This would drastically change the results. If more children were given more intensive services based on their demonstrated ability versus their test scores, there might have been a statistical difference between the groups.

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