

Pathways to Reading: A Study on the Effect of a Phonics and Phonemics-Based Program and
Student Achievement in Reading

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Abstract

A quantitative study was done to find the impact of a phonics and phonemic awareness based program on third grade English-Language Arts MAP test scores. The study used archived test data from thirteen school districts across the state of Missouri for analysis. The data showed that there was a statistically positive impact on student test scores through the use of the Pathways to Reading program.

SECTION ONE – INTRODUCTION

Thirty years ago early reading instruction was vastly different than it is today. Students were not expected to come to kindergarten with early literacy skills already in place. Today, with the adoption of the new Missouri Learning Standards, students in early grades are expected to be fluent readers at a much younger age than in past decades. These high standards allow for students to be college and career ready by the time they graduate, but teachers are left with the challenge of ensuring students meet these expectations. Many students come to school with little preschool education, a lack of quality literature in the home, and insufficient exposure to early literacy instruction. Districts have begun to make great gains towards student proficiency in reading, but there are still students who make it to fourth grade significantly behind their peers.

Educators consistently face the problem of finding a literacy program that is not only effective, but motivates their students to read (Ediger, 2009). For this reason, educators ask themselves: What is the best reading program of instruction for my students? Research in reading instruction has changed throughout history. In the early 1900's, books for children focused on whole language instruction, sometimes called the "look and say" method. In the late 1950's, this method came under some criticism. In the late 1970's and early 1980's, a shift was made to include more phonics based instruction when teaching reading. Whatever the methodology used, reading programs in the United States have been around since the creation of the McGuffey Readers in the 1860's, to the Dick and Jane basal series of the 1930's.

Statement of the Problem

The problem this study will address is poor reading scores on state reading achievement tests, known as the Missouri Assessment Program (MAP). The foundational early literacy skills

are acquired before a child sets foot in a public school at age 5. (Strategic Marketing & Research, 2013) Children who do not have adequate “lap time” reading with parents from birth to age 5 miss out on crucial skills such as rhyming, rhythm, fluency, and even a love and motivation for reading. (Strategic Marketing & Research, 2013). There has been some improvement in reading success with research showing that fourth graders reading below grade level has dropped from 44% to 33%, but this number has not changed since 2012. (Strategic Marketing & Research, 2013). To address this issue in education, many districts are turning to research that shows implementing research-based early literacy instruction is critical.

Statement of the Purpose

The purpose of this study is to explore the influence Pathways to Reading has on students’ scores on their third grade reading MAP assessments. The study will look at the percentage of students who scored proficient and advanced on district-wide reading MAP scores both before the districts implemented the Pathways to Reading (PTR) program, and then after students in third grade had gone through the full three year implementation of the PTR program.

Research Questions/Hypothesis

To create my research question, I have reviewed some literature about best practices in early reading instruction in the school system. I also recalled past successes that I have seen in my own school district with using Pathways to Reading to help better student scores. I have one quantitative research question that will help determine the influence behind the Pathways program.

What impact does the Pathways to Reading program have on student achievement on third grade reading MAP test scores?

Ho: Pathways to Reading training and instruction will have no change on third grade reading MAP test scores.

Ha: Pathways to Reading training and instruction will have a statistical increase on third grade reading MAP test scores.

SECTION TWO – LITERATURE REVIEW

Below you will find the literature review I conducted for my quantitative study. This section begins with a review of the Stage Models of Reading theory. Next, the literature review will talk about poor achievement in reading, including what may affect early acquisition of reading skills. The review will then discuss the common types of early reading programs used.

Theory

Multitudes of reading research proves that children go through specific stages while learning to read. Many scholars refer to this set of learning progressions as the “Stage Models of Reading” (Chall, 1976). Very similar to Jean Piaget’s stages of cognitive development, Stage Models of Reading proposes that children must follow a progression of skills when learning to read. Chall (1976) found that there are five stages one must move through in this specific progression of skills. Readers move through these stages in the same order, some children succeeding faster than others.

The first level in the theory is called the Prereading Stage, in which children aged birth to around six years old acquire the first reading skills such as visual-motor, auditory perception, and language/vocabulary development. In stage 1, students aged six to seven years old learn the crucial skills of letter recognition and assimilating those letters with represented sounds. This crucial stage is where most children acquire knowledge of phonics and phonemic awareness.

Stage 2 consists of students learning to read fluently through familiar stories and easily recognized words. Stage 3 happens around ages nine through 12, with students begin to read more for knowledge once fluency is a cemented skillset. Students in high school move on to stage 4 in which they begin reading to look for multiple viewpoints. Students are able to consider multiple theories and facts, and connect those new ideas to previously learned knowledge. The final stage is acquired around the age of eighteen when students enter college. This stage involves reading and comprehending higher levels of text, as well as connecting, comparing, and dissecting multiple texts on the same subject. A reader at stage 5 knows exactly how much of the text they need to use for their purpose, selecting chapters, pages or even paragraphs that best fit their information needs.

This progression suggests that the early literacy skills taught from preschool through second grade are crucial in building a solid foundation of reading success in the future. Without acquiring those early learning skills, students will not be able to move on to the next skill set (Chall, 1976). Wagner et al. (1997) also found that early phonological processing abilities were clearly related to the progression of reading knowledge. In a similar study, Lonigan & Burgess (2000) made the connection between early reading skills and success in reading later in elementary school. In relation, several studies have proven that non-reading children do not possess basic understanding of phonological awareness (Jong & Leij, 1999).

Poor Achievement in Reading

According to the 2000 report of the National Reading Panel (NRP), only around 60% of fourth graders were reading on grade level in the United States (National Reading Panel, 2000). This is startling to educators who are challenged to take almost 40% of students and bring them

up to grade level. More recent reports from the U.S. Department of Education show that students have made little improvement since the NRP report in 2000 (U.S. Department of Education, 2005). Overall, reading is a core skill in acquiring knowledge in every subject. When students are not reading on grade level, their ability to succeed is greatly diminished. For this reason, it is crucial for school districts to improve skill instruction to increase the number of students reading on grade level. According to Moats (1999), “Low reading achievement, more than any other factor, is the root cause of chronically low performing schools” (p. 5).

One of the biggest causes of poor reading achievement in students is the lack of teacher knowledge in best practices for reading instruction (Cheesman, McGuire, Shankweiler, & Coyne, 2009). In their study, Cheesman et al. (2009) found that a large percentage of first year teachers did not have appropriate knowledge of effective early reading instructional strategies. This lack of teacher training means students may not be acquiring those crucial building blocks of reading such as phonics and phonemic awareness.

Types of Programs Used

While the study of the effectiveness of early reading programs will continue into the future, many advantages and disadvantages have been gleaned from previous research. In their study, Foorman and Moats (2004) found instruction that develops vocabulary, comprehension, phonemic awareness, alphabetic coding, fluency, spelling, and writing is more effective than other instruction that leaves out one of these key elements. Many recently published basal reading programs include these key focus areas, while some in the past did not. Although basal programs have improved over the years, researchers and educators still wonder if they are the best method of literacy instruction.

In grades Kindergarten through second grade, students are taught foundational reading skills such as phonics and phonemic awareness. Phonics is the connection between the visual cue of the printed letter, whereas phonemic awareness includes the auditory understanding of the individual sounds in words. Students practicing phonemic awareness are asked to dissect, replace, blend, and manipulate the sounds in words. Phonics is defined as the connection between printed letters and the various sounds represented by those letters. Moats (1999) found that effective phonics and phonemic awareness instruction in the early grades prevented reading failure in later years.

In opposition to phonics and phonemic-based instructional programs, another type of reading program is called “Whole Language” instruction. In Whole Language instruction, students are instructed with high-quality literature as the focus. Skills are taught in context in relation to the literature the students are reading. Many opposers of whole language argue that the early learning skills are not taught as explicitly enough (NICHD, 2005). Batjes & Brown (1997) found that “phonics instruction lead to higher achievement in word recognition, spelling and vocabulary” (p. 24). For this reason, a vast majority of public schools have moved to incorporating curriculum that focuses on instructing children using the explicit phonics and phonemic skills in succession when teaching students in grades Kindergarten through second grade.

The Missouri State Board of Education voted in 2016 to adopt new standards called the “Missouri Learning Standards.” These new standards include a focus on phonics and phonemic awareness instruction for early grades. Many other states across the country have included explicit phonics and phonemics instruction in their early learning standards.

Pathways to Reading

Pathways to Reading is a teacher professional development and reading curriculum program designed by Terry Clinefelter in the late 1990's. Clinefelter was a first grade teacher and later directed a learning disability clinic at Crittenton Center, a hospital for disabled children. She eventually set up her own clinic called Applied Learning Processes, which is still operating in Kansas City, Missouri. After seven years in a clinical setting she realized to make a difference she needed to start training teachers. In 1997 she started training teachers and writing Pathways to Reading curriculum. She took her clinical experience, knowledge of basic foundational reading and developed the curriculum. She authored and organized the material herself over a 10-12 year time.

Terry used the five main components vital to the success in reading to design the PTR program: phonics, phonemic awareness, vocabulary, fluency, and comprehension. Students are taken through a whole group lesson, and then teachers work with small groups of students focusing on their deficits in required skills. Assessments are included to check for progression through the set skills outlined in the lessons.

One of the biggest advantages of the PTR program is the teacher training component. Before being allowed to purchase materials or teacher's guides, schools must send their teachers to a rigorous five day training. This training goes over the fundamentals of early reading instruction. Aphthorp (2010) found that teachers who went through the extensive PTR training had significantly higher scores on a test of relevant early reading competencies. This means that teachers trained in the PTR process are not only given textbooks to use with students, they begin

teaching the curriculum with an in-depth knowledge of best practices. In addition to the five day introductory training, schools receive coaching from an on-site trainer in the first two years of implementation. This continued support includes the teachers being observed by the PTR trainer with feedback given for improvement.

PTR was first used in schools in 1998 when Independence, Missouri school district trained all Kindergarten through second grade teachers. Success of teachers and increased student achievement on local reading assessments spread the use of PTR to many other districts in the state of Missouri.

Summary

The literature review shows the importance of early learning instruction for success later in school. Many of our students are not reading on grade level, and this affects their success in all areas of school. Waiting until students are much older to intervene may not be successful as students must move through the proper stages of development and acquire those skills early. A crucial piece of this early instruction should include phonics and phonemic awareness to allow students to grasp the building blocks of reading. Once students have this basic understanding of early learning skills, they may move through the higher stages of reading. Pathways to Reading is a program that includes these critical elements of phonics and phonemics, as well as a high level of teacher support through the process.

SECTION THREE – METHODOLOGY

This section of the paper will look at the research method and design I used for this study. Also, information about the school districts used in this study and how they were chosen is

included. This section also includes a brief discussion of the diversity of the sample. Finally, information about how the data was collected for the study is reviewed.

Research Method/Design

For this study, quantitative data was collected. Quantitative is the best choice for the project because student test scores provide the most accurate representation of student knowledge of basic reading concepts. By third grade, students are expected to have mastered all the basic phonics and phonemic awareness concepts and are moving into the application stage of reading. The third grade MAP scores from archived data will show the correlation between student reading knowledge before and after PTR instruction.

The research design was quasi-experimental due to the fact that student groups across school districts can not be altered. The MAP data was pulled as student performance in third grade for the district overall. Student performance before receiving any Pathways to Reading instruction were the control group, while students who had received full PTR instruction were the experimental group.

Diversity

The study looked at thirteen school districts across the state of Missouri. These districts include schools of varying size and demographic. Students attending these schools come from all races, ethnicities, socioeconomic status, and gender. This will provide data from a broad sample of students. In districts where there were more than one elementary school, data from all elementary schools in the district was gathered as long as the school implemented PTR instruction.

Data Collection/Instrument

Archived MAP test data from pre and post Pathways to Reading instruction was collected from the Missouri Department of Elementary and Secondary Education (DESE). The thirteen school districts used in the study were chosen because they had previously implemented PTR with enough time to provide for students to receive the full three years of instruction in Kindergarten through second grade. First, schools were contacted to find the year PTR was implemented. Then, third grade ELA MAP data was collected from the DESE website on each district three years prior to PTR implementation and recorded. Next, data was collected on third grade ELA MAP scores starting four years after the year of implementation and the three years following. Waiting four years after initial implementation allowed students to receive the full three years of PTR instruction in Kindergarten, first, and second grades.

SECTION FOUR – DATA ANALYSIS

Discussion of variables/constructs

For this study, the two variables that were looked at were state Missouri Assessment Program (MAP) English Language-Arts scores of third grade students from two different time frames. Scores from three years prior to PTR implementation were compared with scores from three years following PTR implementation from thirteen school districts across the state. Scores for the after effects of PTR were taken after students in third grade would have had three full years of PTR instruction in Kindergarten through second grade.

Analysis

For this study, a two-sample t-test assuming equal variance was used to determine if Pathways to Reading training and instruction increased students' reading MAP test scores in third grade. The null hypothesis was that PTR will have no significant effect to student reading

MAP test scores. The alternative hypothesis was that PTR will increase student reading MAP test scores.

Results

The results of the calculations for the data showed that t-value of 3.039 was greater than the t-critical value of 1.665. This proves that there is a statistical significance between the pre and post test scores collected. The mean of the scores was 58.04, and the degrees of freedom was 76, and an N of 39 for both pre and post test scores from all thirteen districts. Based on analysis of data the null hypothesis is rejected. the ha hypothesis will be accepted.

SECTION FIVE – SUMMARY

Conclusions

After reviewing the literature and analyzing the results of the study, the researcher was able to make several conclusions and recommendations. Based on the quantitative data collected from MAP test scores pre and post Pathways to Reading instruction, there was a statistical significance between the pre and post test data. The original research question inquired about the impact of Pathways to Reading instruction on student achievement on third grade reading MAP scores. This study supports the idea that PTR instruction had a positive impact on student test scores on the third grade MAP tests.

Implications

The implications of these results suggest that other schools should use the Pathways to Reading program or similar phonics and phonemics-based literacy instruction in their primary

grades. This focus on critical skills early on sets the foundation for improved reading achievement in later years. PTR allows teachers to participate in high quality and long-term training that allows them continued support in delivering effective reading instruction. This instruction benefits students throughout their entire schooling, not just in the early years.

Recommendations

To build upon the research done in this study, a more widespread study could be done to include districts across the country that use the PTR program. This would allow for a larger sample size to increase validity of results. Also, more grade levels could be assessed to include students in all upper elementary grades. This would look at the effectiveness of PTR as carried throughout the school career of students.

While Pathways to Reading is widely used across the state of Missouri for early literacy instruction, the individual use by teachers can vary. This can make pinpointing the effectiveness of any literacy program difficult. Hoffman and Baumann (1998) found that 56% of the 1,207 teachers surveyed used their basals, but supplemented them with children's literature. Ten percent of teachers surveyed used the basal, but did not rely heavily on the teacher's guide suggestions for instruction (Hoffman & Baumann, 1998). These variations on the actual implementation of the basal programs suggested lessons and activities can make an analysis of program effectiveness very difficult.

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