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Houghton Mifflin Harcourt Journeys Curriculum Series Longitudinal Effects On Grade 4 Student Reading Scores

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HOUGHTON MIFFLIN HARCOURT JOURNEYS CURRICULUM SERIES LONGITUDINAL EFFECTS ON GRADE 4 STUDENT READING SCORES

by

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This dissertation is dedicated to my family.

ABSTRACT

Within the last 100 years, the number of school districts in America has dropped by as much as 90% (Murdock, 2012), from 117,108 in 1939 to 13,452 in 2019 (National Center for Education Statistics [NCES], 2020). Funding and how to provide educational equity, equality, and justice for all is a critical conversation. According to the North Dakota Department of Public Instruction (NDDPI) (2018), 1.94% of the state's $1.448 billion cumulative K-12 expenditures are associated with instructional media related to academic aids such as textbooks.

The purpose of this quantitative study was to identify if the major educational publishing company Houghton Mifflin Harcourt's Journeys reading series is effective in producing student academic growth in reading in Grade 4 elementary school-aged children as demonstrated through a multi-year longitudinal study. It is important to note that Houghton Mifflin Harcourt (HMH) garners a 39% K-12 domestic school market instructional aid share and $1.408 billion in annual net sales (Houghton Mifflin Harcourt [HMH], 2018). For this study, 250 assessment scores were collected from pre- and post-Journeys curriculum implementation from 2009 to 2018 at the Sargent Central Public School in Forman, North Dakota. No sampling occurred within the total population. Data from 2009 to 2018 NWEA MAP (Northwest Evaluation Association Measuring Academic Progress) assessment scores were collected and analyzed.

Through three statistical procedures, the research findings demonstrate that the Journeys reading series increased annual pre- to post-NWEA MAP assessment scores by 2.23%. Compared to 4th grade students nationwide, the Journeys reading series decreased annual pre- to

post-NWEA assessment percentile rankings by 10.54%. The Journeys reading series was also less effective at creating student reading growth when compared to the school's prior reading curriculum. This study demonstrates that school curriculum influences and decisions are far-reaching.

Keywords: Houghton Mifflin Harcourt, Journeys, NWEA MAP

CHAPTER I

INTRODUCTION

"An enlightened citizenry is indispensable for the proper functioning of a republic. Self-government is not possible unless the citizens are educated sufficiently to enable them to exercise oversight. It is therefore imperative that the nation see to it that a suitable education be provided for all its citizens."

- Thomas Jefferson

Education is rooted in the U.S. government's conscience, as most of the public is interested in what goes on day by day in a school in direct relation to the children there (Dewey, 2010). The largest source of variation in student outcomes is indeed directly attributable to what students bring to the school from their skills, prior knowledge, attitudes, and family and community background (Organization for Economic Cooperation and Development [OECD], 2017). For a school system, the quality of teachers directly correlates to student growth and is the most critical factor within a school for the promotion of student learning (Danielson, 2007). Good teachers do not just teach lessons. They teach students, and the personal connections they form will trump the curriculum (Steele & Whitaker, 2019). Research results indicate that the academic growth rate of student populations is primarily a function of the effectiveness of school districts, schools, and, most importantly, teachers (Izumi & Evers, 2013).

Staff members enjoy a greater sense of accomplishment in the classroom when they understand their work, have a purpose, and identify a direction to their work (Marzano et al.,

2011). Yet of all the crucial elements associated with student academics in school organizations, the curriculum may be the most prominent. The school classroom curriculum provides the starting point for an instructional lesson; it lays the foundation for course instruction and is the framework for what students should know, understand, and achieve. Schools need curriculum to aid resource utilization, time management, and facility usage. Some of the fiercest debates in education are concerned with what should be taught and who should decide (Robinson & Aronica, 2016). Developing or choosing a school's educational strategy, its overall curriculum, and instructional program is one of the most important tasks for a school seeking to raise its level of performance (Odden & Archibald, 2001). For almost 100 years, educators have been at war with each other over what the nature of the American school curriculum should be (Schiro, 2013). Figure 1 shows the various influences on school curriculum.

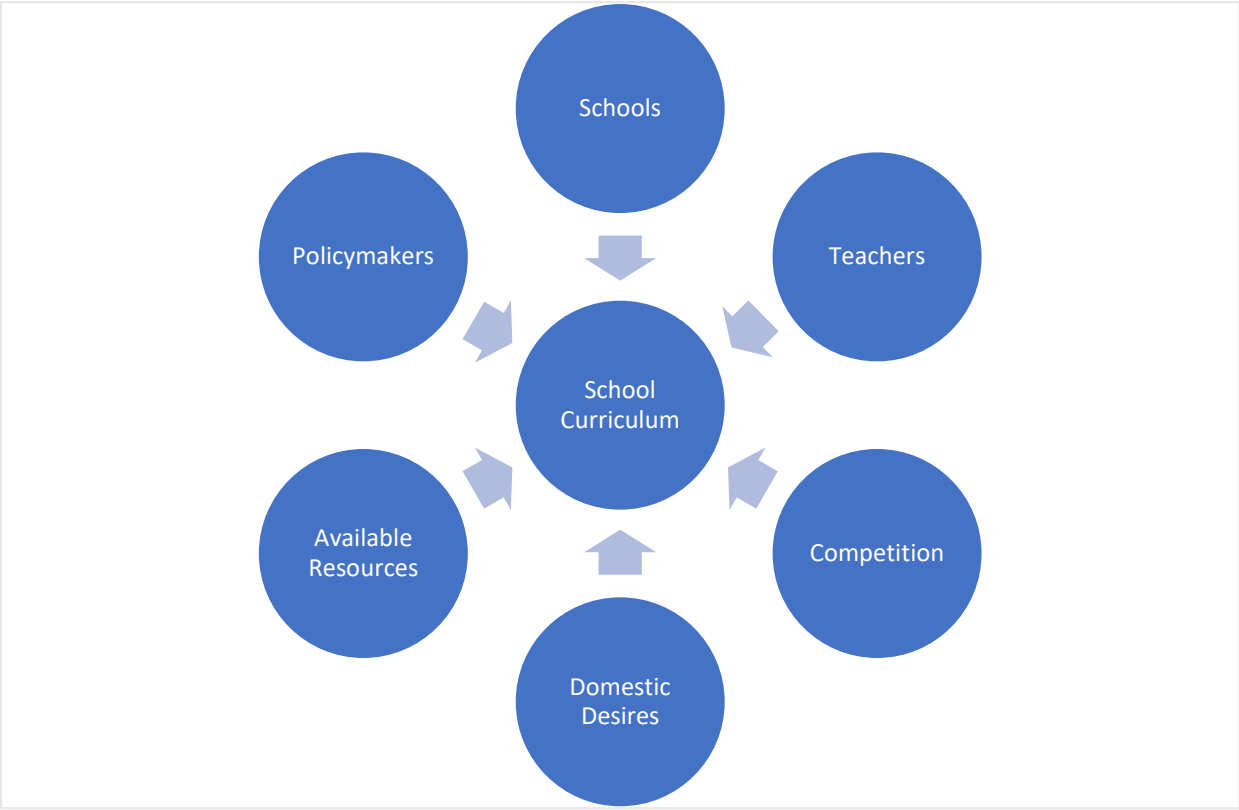
The National Assessment of Educational Progress's (NAEP) semi-annual student national assessment reported that only 28% of 4th grade North Dakota students read proficiently in 2017 (National Assessment of Educational Progress [NAEP], 2018). Alarmingly, only 6% of 4th grade North Dakota students read at advanced levels, with 36% at basic levels, and 30% below basic (NAEP, 2018). Average scores have declined slightly since 2002 compared to the nation's 4th grade NAEP reading average score, which has marginally increased (NAEP, 2018).

One in five U.S. adults (21%) do not have enough English literacy skills to sufficiently complete tasks that require comparing and contrasting information, paraphrasing, or making-level inferences. This translates to 43.0 million U.S. adults who have low literacy skills (National Center for Education Statistics [NCES], 2019). There is no single reason why specific educational systems succeed or fail. Instead, a network of interrelated factors functions differently in different situations (Sahlberg, 2015). Policymakers, domestic desires, available

resources, schools, teachers, and competition directly and indirectly impact critical school curriculum components.

Figure 1

Influences on School Curriculum



Types of Curricula

Sir Ken Robinson, the internationally renowned speaker and author on education, identified three types of curricula in education: formal, informal, and hidden (Robinson & Aronica, 2016). Each of the three types of curriculum impacts students—some more directly than others.

Formal Curriculum

The formal curriculum is the material students are required to cover within a certain period, the planned program of objectives, learning experiences, and the framework for instructional planning that outlines broad goals and strategies to reach them. Formal education is often dictated by state curriculum frameworks and is based on publicly valued intellectual, social, cultural, political, and economic funds of knowledge, often found in written documents and originating in philosophies (Kridel, 2010). Learner-centered goals are the hallmark of 21st century formal education. High-stakes tests, assessments, and state standards are based on the formal curriculum.

Informal Curriculum

The informal curriculum is the material schools, and teachers can choose to include or the curriculum that often falls outside the prescriptive, structured planning of a teacher (Robinson & Aronica, 2019). Extracurricular activities in school are often associated with informal curriculum. The informal curriculum is not planned or readily agreed upon by governing bodies and is often treated as simply an alternative to formal, didactic instruction (Rogoff et al., 2016). Most learning does not occur in formal, structured training atmospheres, with statistics recognizing that 70-90% of learning takes place through informal measures (Cross, 2011).

Hidden Curriculum

Hidden curriculum is associated with the culture and climate of the school system (Robinson & Aronica, 2019). Education is much greater than just specific instructional learning through textbooks and teacher manuals. With hidden curriculum, lessons are learned but not necessarily intended. The hidden curriculum is taught by school personnel through a cumulative approach rather than by any one particular teacher (Haralambos & Holborn, 2008). Unlike the

official curriculum, with its stated cognitive and affective objectives, the hidden curriculum is rooted in classroom life that is not commonly perceived by either students or teachers and is often shaped by three key analytical ideas: crowds, praise, and power (Giroux, 1988).

Curriculum Work

Implementing curricula requires a great deal of work and is primarily employed in three major areas: classrooms, schools or school systems, and public policy forums (Walker, 2016). Teachers receive direction from school administration in the form of formal orders or directives. Teachers are identified as the instructional level. For a concrete comparison, the instructional level includes the workers that propel an education train with energy and action. Teachers are the staff on the ground and the motion makers. Schools or school systems are responsible for working on the school curriculum. Schools or school systems are identified as the institutional level, the engineers that help design and construct the framework for the education train. Public policy forums are last in the hierarchy of curriculum work. Public policy can impact course offerings, materials, standards, and graduation requirements, as well as many other components. State agencies and policymakers are identified as the policy level, which consists of the owners of the education train that can change the direction of the education train entirely through new policy creation.

Education is Big Business

Education is a vast, multifaceted, and complex enterprise with substantial money flows with total costs approaching $1 trillion (Brewer & Picus, 2014). Many school districts across the nation are by far the most prominent enterprises in their communities in terms of revenues, expenditures, employment, and capital assets (Sorenson & Goldsmith, 2018). Education engages more than 100,000 local school board members in important policymaking activities; employs

millions of individuals as teachers, administrators, and supports; and educates tens of millions of children (Odden & Picus, 2019) with total expenditures for public PreK-12 education around $700 billion in 2015-2016 (NCES Public School Revenue Sources, 2019). In 2014, the United States spent an average of $16,268 on each student in public schools (Watling, 2018).

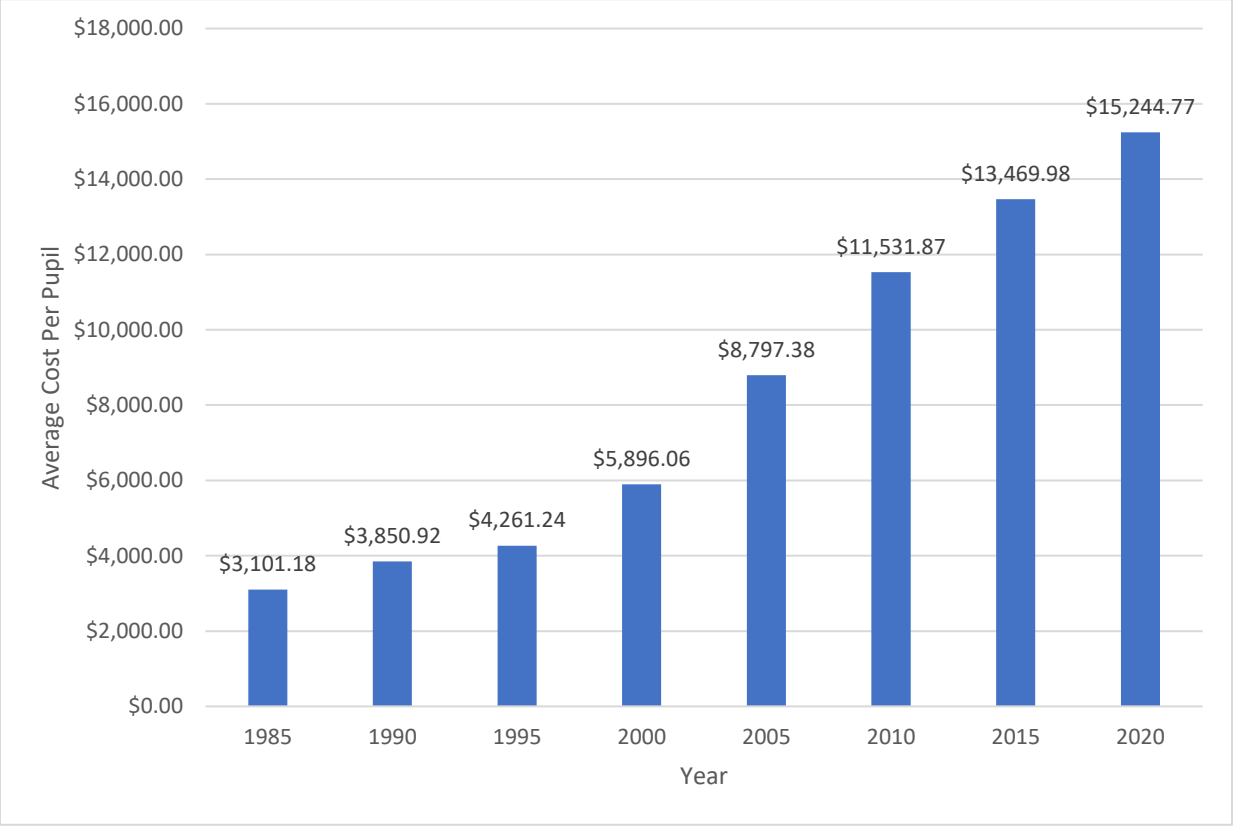
In North Dakota, the total cost of K-12 education exceeds $1.3 billion, with $12,123 spent on average per student (North Dakota Department of Public Instruction [NDDPI], 2019b). Ensuring equity (where all students get the support they need), equality (where it is assumed that all students benefit from the same support), and justice (where all students succeed) is one of the most complex problems facing state legislatures with enrollment declining in rural areas throughout the state (OECD, 2017). In 2012, school districts consisting of 1,500 students or less made up approximately 75% of America's schools (Murdock, 2012). As enrollment in rural areas continues to decline, the per-pupil cost will continue to rise if equity is maintained. Figure 2 portrays the per-pupil cost for North Dakota students. Figure 3 shows the incline of student enrollment in large school districts in ND. Figure 4 shows statewide enrollment for North Dakota K-12 schools.

Funding Resources

Across the nation, state funding used to be the majority revenue provider for public schools. More recently, this trend has changed. Today, local revenue dollars achieved through property tax levies make up almost 45% of public school funding at the national level, with states such as Nebraska, Illinois, New Jersey, Maine, and Massachusetts each exceeding over 50% of revenue coming from property tax revenues (NCES Public School Revenue Sources, 2019). For the 2017-2018 fiscal year, the state provided 64% of ND public school funding, with

Figure 2

North Dakota's Average Cost Per Pupil for All Cost of Education Expenditures

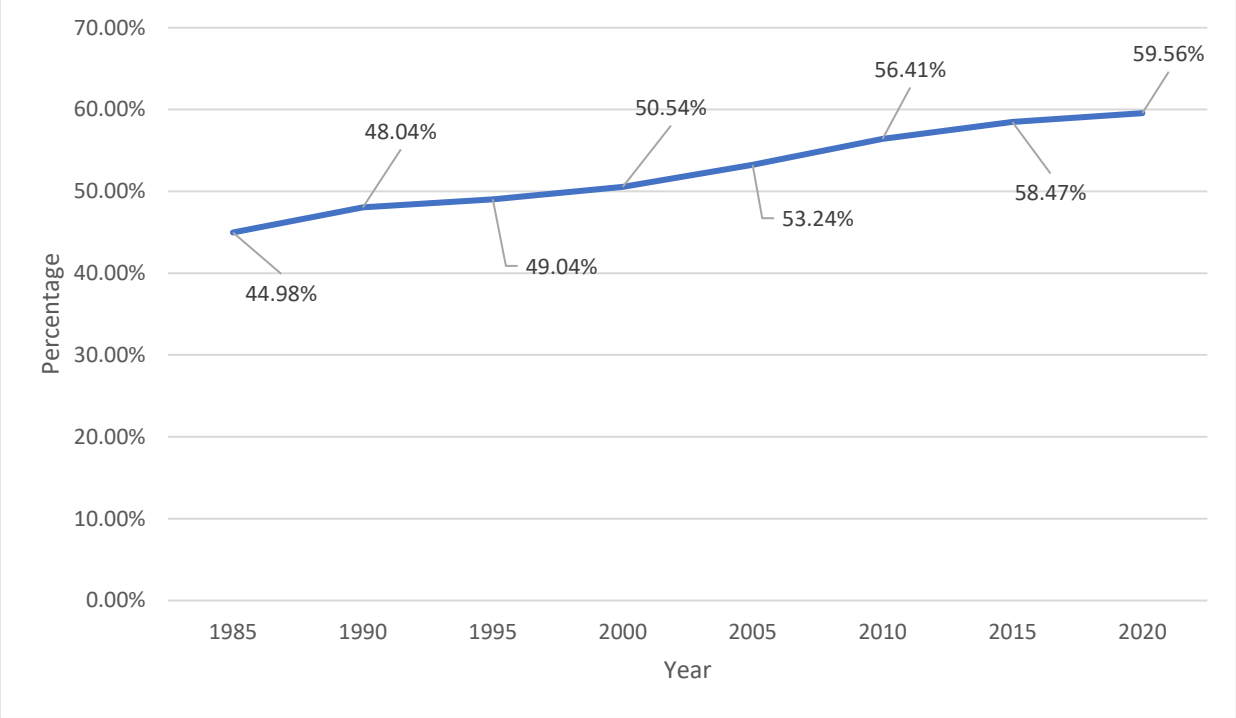


Note. Adapted from North Dakota Department of Public Instruction (NDDPI) (2021).

only 24.79% coming from local sources such as taxes, tuition, and transportation, in lieu of taxes and other revenue (NDDPI, 2019b). Yet, some rural North Dakota schools with less than 350 students can exceed 50% of total annual revenue coming from local sources alone (NDDPI, 2019b). Findings from the Organization for Economic Cooperation and Development (OECD) (2017) have shown school funding that is heavily dependent on local bases may have adverse effects on matching resources to student needs as districts with more disadvantaged students are likely to have fewer resources available to meet student needs.

Figure 3

Percent of ND Enrollment Attending One of the Ten Largest School Districts in ND

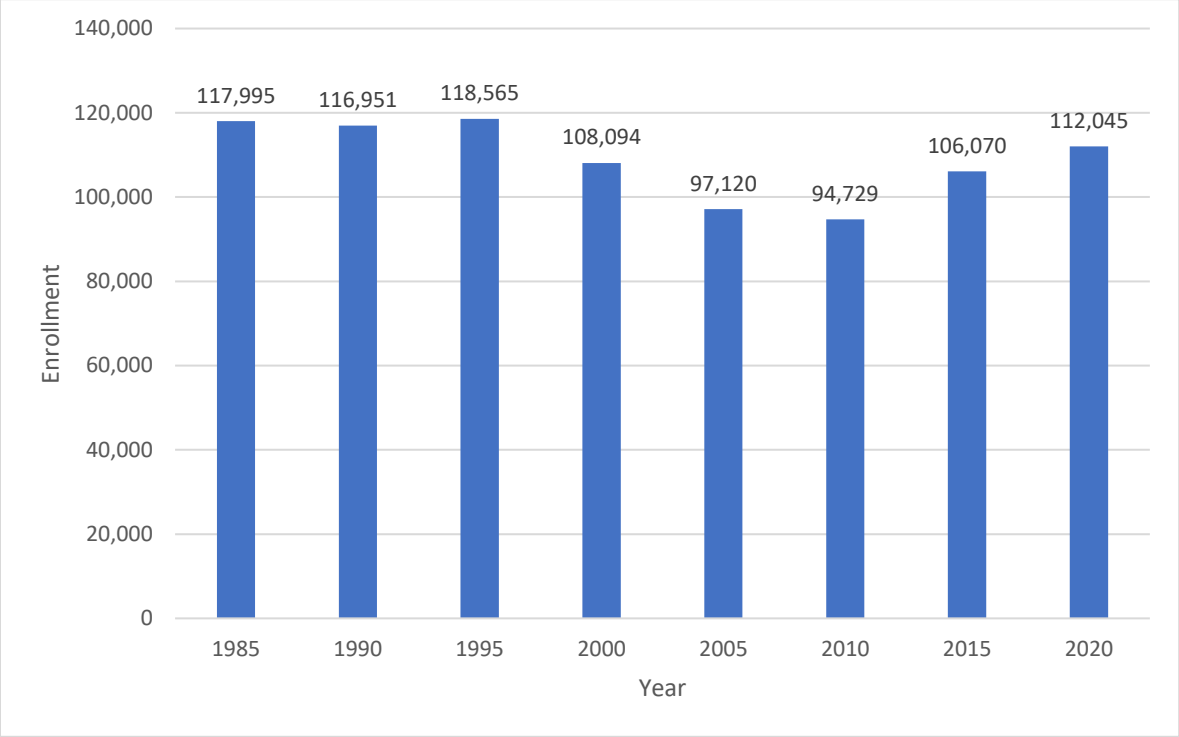


Note. Adapted from NDDPI (2021).

In North Dakota, the major ways schools are financially supported are through property taxes, income taxes, sales taxes, corporate taxes, and energy taxes (Houdek et al., 2007). The current funding formula provides a base of financial support per student sufficient to provide an adequate education by school districts, regardless of location or taxable valuation (North Dakota K-12 School Funding Formula, 2014). Due to significant declines in enrollment in the last 35 years, Sargent Central Public School relies more heavily on local revenue than other school districts in the state. Sixty-four percent of annual revenue comes from the state, 34% from local sources such as tax levies, and 2% from the federal level.

Figure 4

ND Statewide Enrollment



Note. Adapted from NDDPI (2021).

Influence of Curriculum

Commercially published curriculum materials dominate teaching practice in the United States (Goodlad, 2004), with expenditures to purchase new curriculum increasing each year. States create the framework for curriculum as demonstrated through state grade-level mandated standards. At the local level, keeping the school supplied with adopted texts are the primary and appropriate routine in most school districts with an update or review cycle of five to seven years, unless policy or standards change sooner (Wiles, 2009). According to Ball and Cohen (1996), curriculum materials are often part of an agenda for schools to improve instruction, as the curriculum is a set of plans made to guide learning in a school. Curriculum is usually represented

in retrievable documents of several levels of generality and the actualization of those plans in the classroom, as experienced by learners and as recorded by an observer (Glatthorn et al., 2019).

Most school boards have policies identifying the procedure for purchasing and implementing the school curriculum, such as curriculum or ad hoc committees that review purchasing new school textbooks. There are no specific guidelines as to when a school board is required to provide a minimum amount for purchasing as North Dakota Century Code (NDCC) 15.1-09-34 states:

> "The board of a school district may not enter a contract involving the expenditure of an aggregate amount greater than fifty thousand dollars unless the school board has given ten days' notice by publication in the official newspaper of the district, received sealed bid, and accepted the bid of the lowest responsible bidder." (NDCC – Chapter 15.1-09 School Boards, 2019b)

Exempt from statute 15.0-09-34 are textbooks and reference books (Appendix A). School superintendents will generally seek school board approval if a purchase price exceeds $20,000 in rural North Dakota schools.

Curriculum Purchases

Most states provide recommendations for school boards to identify policy for the adoption of school curriculum purchases. The North Dakota School Boards Association (NDSBA) provides recommended and required curriculum-based school board policy templates for local district adoption (Appendices B, C, & D) and reviewing complaints of instructional and resource material (Appendix E). A portion of the policy template states that after annually reviewing the recommendations of the curriculum committee, budgetary data, other pertinent information, and ensuring the curriculum meets all requirements under district policy and law,

the Board shall vote on the curriculum for the upcoming school year. The superintendent shall assist in this process to ensure the curriculum is comprehensive and meets all applicable legal requirements (North Dakota School Boards Association [NDSBA], 2018). At the local level, school boards, under advisement from state school board associations, may implement local policies that "comprise of professional staff as appointed by administration to assess curricular needs, review curricular inclusions, and make curricular recommendations on expansion and improvement (North Dakota School Boards Association [NDSBA], 2016).

Curriculum purchases can require extensive new materials and supplies, therefore becoming quite costly for school districts. Between 2000 and 2017, the average cost per pupil for a student in North Dakota increased by 151.67% (as previously seen in Figure 3), with expenditures for instruction not reported as salaries and benefits of teachers or support staff growing by 63.25% (NDDPI, 2019b). For the same period, the North Dakota statewide student enrollment in public schools declined only 3.23% (as previously seen in Figure 4). Staffing expenditures associated with school staff salaries and benefits consist of the most significant expenses within school districts. While most public and private organizations and businesses have 35-40% of their budgets tied to personnel and benefits, the comparable number in public schools is, on average, more than double, between 80% and 85% (Ellerson, 2013).

Purpose of the Study

The purpose of this quantitative study was to identify if the Houghton Mifflin Harcourt educational publishing company's Journeys reading series is effective in producing student academic growth in the areas of reading in Grade 4 elementary school-aged children as demonstrated through a multi-year longitudinal study. This study utilized 250 assessment scores from pre- and post-Journeys curriculum implementation from 2009 to 2018 at the Sargent

Central Public School in Forman, North Dakota. The multi-year longitudinal study focused on the Houghton Mifflin Harcourt (HMH) Journeys reading series and its effectiveness in creating student growth in reading or increasing grade-level percentile rankings in elementary school-aged children. By reviewing Sargent Central Public School's 2009-2018 reading achievement scores for Grade 4 on NWEA MAP testing and comparing the results to prior curriculum assessments in reading, the study tested if the Houghton Mifflin Harcourt (HMH) Journeys reading series is effective in creating student growth and increasing whole student percentile rankings in the area of reading.

Very few independent research studies have examined Houghton Mifflin Harcourt's Journeys reading series. Research has been conducted on the previously published elementary academic reading school curriculum series called Storytown, but the data compiled was limited in its duration and shallow in its scope (Clark, 2012). In the Journeys brochure, it recognizes that proof of Journeys's effectiveness has been demonstrated using randomized control trials with a total of 46 classrooms and 700 students participating in a two-year experimental study (Houghton Mifflin Harcourt, 2017). Analysis has indicated that using Journeys caused students to perform better on reading achievement tests than similar students using other programs with meaningful conclusive educational effects (Resendez & Azin, 2014).

From 2009 to 2013, the researcher taught 6th grade at Sargent Central Public School in Forman, ND. On April 14, 2009, the patrons of the Sargent Central Public School District No. 6 voted on passing a $3.8 million Quality School Construction Bond to build and update the existing school facility and the 26-year-old temporary modular classroom units located outside of the main facility. The capacity of funding was a segment of President Obama's American Recovery and Reinvestment Act (ARRA) of 2009. North Dakota Department of Public

Instruction (NDDPI) was awarded $70 million for qualifying school districts (U.S. Department of Education, 2009). Having received more than the requisite majority, the bond passed with 512 voting in favor and 269 voting in opposition (Appendix F). The bond was 100% subsidized by the federal reserve with no interest rate to the patrons of the school district and holds a maturity date of May 1, 2024. Extensive facility updates included technological updates that impacted curriculum decision-making.

During the researcher's time as a former 6th grade teacher at Sargent Central Public School in rural North Dakota, school administrators began exploring the implementation of a new reading and language arts curriculum series. A variety of vendors were brought in, such as Pearson and McGraw-Hill. The Journeys curriculum was selected for its colorful illustrations, developed scope and sequence, extensive library of supplemental on-level readers, and its digital content library that allowed staff to fully utilize the technological resources such as Smart Boards and high-speed internet, which became available throughout the facility after the bond work was completed. For the first time, teachers at Sargent Central Public School could project a variety of worksheets and activities onto a large interactive touch-sensitive screen for increased student attention and focus.

During the purchasing period, the researcher noted that all elementary staff were asked to conduct their investigation into the curriculum series with curriculum samples provided by the elementary principal. These were the reported strengths of the Journeys series: easily organized, interesting adventure units, guided reading support, write-in readers, and other material for ELL (English language learners). Most importantly, it was aligned to the new standards and emphasized the importance of vocabulary development. Sargent Central Public School's

research at that time indicated vocabulary knowledge to be the most critical element in determining a child's ability to read with comprehension.

The elementary staff was split on deciding which reading curriculum to purchase with pros and cons to each curriculum. With the deciding vote, the researcher determined which curriculum to purchase. The researcher chose the Journeys curriculum for its ability to utilize technology as a driver for educational change and student growth. On June 15, 2010, the superintendent of Sargent Central Public School submitted a purchase order in the amount of $23,137.70 to purchase a new K-6 Reading series titled Journeys from the Houghton Mifflin Harcourt publishing company. Published in 2010, the Journeys series curriculum was released with limited to no independent research studies conducted on it. Sargent Central Public School elementary staff incorporated the series into their daily lessons beginning the fall of 2010.

Need for the Study

Houghton Mifflin Harcourt introduced a new elementary reading series titled Journeys in 2010. Aligned with the Common Core State Standards, the Journeys program is a comprehensive K-6 literacy program that targets key elementary literacy including reading comprehension, vocabulary, fluency, grammar, and writing. At Grades K-2, phonics and phonemic awareness are targeted as well (Resendez & Azin, 2012). The Journeys program was developed by consulting author Irene Fountas through a collaboration of program and consulting authors. The series supports leveled readers, guided reading, vocabulary development, phonemic awareness, and focuses directly on small-group instructional theory. Supplemental resources include digital focus walls, weekly planners, quick start pacing guides, write-in readers, language workshop resources, benchmark and unit tests, intervention assessments, and flashcards. Limited research has been conducted on the reading series efficacy as it pertains to student academic growth and

NWEA MAP achievement. The previous reading series curriculum utilized in the elementary setting was MacMillan/McGraw-Hill, which was published in 2003.

Schools utilize significant funds for curriculum purchases and must be concerned with the financial impact these curriculum purchases create to meet local, state, and federal public school funding. To be effective and considerate stewards with tax funds, schools must prove the effectiveness of the money spent. More than ever in public education, schools must formulate a cost analysis to consider both the results and cost of school interventions such as curriculum purchases (Levin & McEwan, 2000).

Research Questions

The following research questions were formulated for the investigation of the HMH Journeys curriculum series:

1. How does the Houghton Mifflin Harcourt Journeys reading series affect pre- and post-NWEA MAP classroom assessment scores over an extended period?
2. How does the Houghton Mifflin Harcourt Journeys reading series compare to the previous reading curriculum regarding NWEA MAP classroom assessment scores?

Research Hypotheses

For this study, the following hypotheses were formed for research questions 1 and 2, respectively:

1. The Houghton Mifflin Harcourt Journeys reading curriculum series will provide consistent student growth from pre- to post-NWEA MAP assessments scores.
2. The Houghton Mifflin Harcourt Journeys reading curriculum will provide an increase in pre- to post-NWEA MAP assessment scores as compared to the previous reading curriculum utilized.

Researcher's Background

The researcher of this study is a middle-aged white male with 11 years of professional experience in education, consisting of four years as a 6th grade classroom teacher at Sargent Central Public School, three years as an elementary principal/K-12 counselor in a rural northeast North Dakota school, and five years as the superintendent at Sargent Central Public School. He was raised on a family farm in rural North Dakota. The researcher earned his Bachelor of Science in Elementary Education in 2008 and Master of Science in Educational Leadership in 2012 from Minnesota State University Moorhead.

The researcher has served on regional-level educational boards, including the South Valley Special Education Unit Board of Directors. He has received national administrative honor roll certificates for two years, was awarded $1,000,000 in local, state, and federal grants in his educational career, and was involved in various school system capacities, including assessment director and standards committee member. He has been instrumental in establishing PreK programs, paid maternity leave, schoolwide Title I, and support of AdvancED Accreditation. The researcher was part of the selection committee for incorporating the Houghton Mifflin Harcourt Journeys series into the Sargent Central Public School district in 2010. The researcher's vote was the decisive vote for selecting the Journeys series over other reading curricula presented.

Delimitations

Research conducted in this study only examined one grade level in one school district with a relatively small sample size.

Assumptions

1. The data collected is an accurate reflection of student aptitude.

2. The 4th grade teacher was pedagogically proficient in the utilization of the reading course curriculum.

Definitions of Terms and Acronyms

For this study, the following terms and acronyms are defined:

• *Average Daily Attendance* – calculated at the conclusion of the school year by adding the total number of hours that each student in a given grade, school, or school district is in attendance during a school calendar and the total number of hours that each student in a given grade, school, or school district is absent during a school calendar, and then dividing the sum by:

a. Nine hundred sixty-two and one-half hours for elementary school students; or

b. One thousand fifty hours for middle and high school students (NDCC – Chapter 15.1-27-35 Average Daily Membership – Calculation, 2019)

• *Common Core State Standards* – a set of shared national K-12th grade standards in mathematics and English language arts that identify what a student should learn by the end of each school year

• *Curriculum* – a school document that identifies the content to be taught and the suggested methods to be used

• *Effectiveness* – the ability of a curriculum series to improve student academic scores and promote knowledge of learners (Walker, 2016)

• *Enrollment* – student enrollment for K-12 (NDDPI, 2021)

• *Growth* – tracking the test scores of students from one point in time to another, usually from year to year (Marzano & Toth, 2013)

• *Mean* – the arithmetic average of a group of scores (NWEA Connection, 2017)

• *Median* – the middle score in a list of scores, the point at which half the scores are above, and half the scores are below (NWEA Connection, 2017)

• *NDSBA (North Dakota School Boards Association)* – an association governed by a seven-member board of directors to support North Dakota school boards in their governance role through education, services, information, and legislative advocacy (North Dakota School Boards Association [NDSBA], 2021)

• *NWEA MAP* – Measures of Academic Progress (computer-adaptive tests that result in an RIT score)

• *NWEA MAP Reading Growth* – student-assessed RIT score growth from year to year in reading (NWEA Connection, 2017)

• *NWEA MAP Writing Growth* – student-assessed RIT score growth from year to year in writing (NWEA Connection, 2017)

• *Percentile Rank (PR)* – a norm-referenced score that provides a measure of a student's ability compared to other students in the same grade nationally (Renaissance STAR Reading Score Definitions, 2019).

• *RIT* – the RIT (Rausch Unit) Scale is a curriculum scale developed by NWEA that uses the individual item difficulty values to estimate student achievement (NWEA Connection, 2017).

Organization of the Study

The research study is organized into five chapters. Chapter II presents the review of literature, which examines curriculum and policy changes that have impacted school curriculum since the 18th century in America. Chapter III identifies the methodology associated with the research. Chapter IV presents the results of the research study. Chapter V identifies the

researcher’s interpretation of the findings, implications, limitations, recommendations, future research, and summary.

CHAPTER II

LITERATURE REVIEW

Introduction

The purpose of this literature review is to examine how the progression of educational change in the United States played a significant role in impacting curriculum change in public education with decisions affecting 21st-century curriculum offerings such as the Houghton Mifflin Harcourt Journeys reading series. The topics discussed in this chapter support this research study by reviewing influences of policymakers, international and national competition, domestic desires, and resources within schools. This chapter also discusses teachers having less of an impact on curriculum and school direction in America. The chapter is divided into various sections beginning with the Industrial Revolution and concluding with local, state, and national educational decisions in the 21st century.

Diffusion of Knowledge

Before the Industrial Revolution, a period from about 1760 to 1840 in America (Olson, 2002), relatively few people had any formal education (Robinson, 2017). During the early years of the United States, elementary education among white Americans was accomplished through parental initiatives and informal local control of institutions (Kaestle & Foner, 2011). Textbooks and curriculum consisted of heavy rote memorization (Monaghan, 2005). There was no uniform public education system (Adams & Adams, 2003). A few towns tried to provide schooling, but

attendance was not mandatory. Funding for established schools came from a variety of sources. Much of the education children received at this time came from family.

Shortly after authoring the Declaration of Independence, Thomas Jefferson proposed Bill 79 “A Bill for the More General Diffusion of Knowledge” in 1779. It outlined that states should be responsible for providing society equality of opportunity through accessible education (Hunt et al., 2010). The bill proposed to create separate wards or school districts approximately five to six square miles in size that local citizens would provide funds to educate elementary-aged children at no cost for three years. Jefferson believed “public happiness should be rendered by liberal education worthy to receive, and able to guard the sacred deposit of the rights and liberties of their fellow citizens” (Alexander & Alexander, 2019). In Virginia, Bill 79 ultimately failed, but a heavily revised version was passed into law in 1796 as the Act to Establish Public Schools.

Curriculum and textbook use were limited in the early 19th century, and teachers often emphasized religion and morals through songs and recitals. The most common texts used were the Bible and the Hornbook (Adams and Adams, 2003). The hornbook was not a book at all but rather a piece of board with a handle shaped like a tennis rack. On the front of the hornbook was either a piece of animal skin or paper upon which the lesson was inscribed and was protected to keep the lesson from the possible stain from a pair of dirty little hands (Plimpton, 1916).

Common School

Preoccupation with the school curriculum did not appear suddenly. There had been signs in the 19th century of growing attention to what would become curriculum study in American schools (Kliebard, 2004). Curriculum changes, literacy, and moral training became the pillars of proper schooling from the Colonial era to roughly the 1830s. After 1830, American education

entered a period of far-reaching change from small, local schools paid for by parents to state-supported publications open to all (Walker, 2016). The public school, as it is now known, was born. Its founders called it the common school and moved education more fully into the public conversation, which made it amenable to public policy (Tyack et al., 2006). Attendance became mandatory for specific age groups, and assessments, if conducted, were given orally (Vinovskis, 2019).

Common schools were championed by American education reformers, such as Horace Mann, who were pushing for schools to teach the same things to every white child of a neighborhood or area, in the same classroom, and with the same teacher (Reese, 2011). Textbooks were filled with teachings on ethics and character growth and were often heavily influenced by the public faith of the Protestant majority. *Lectures on School-Keeping*, originally published in 1829 by Samuel Hall, was the first widely used teacher-training book in the United States and the textbook of choice in most schools in the country during the 1840s and 1850s (Jeynes, 2007). Around this time, about 50% of children were enrolled in public schools, and students attended school for about 132 days. Slates and chalk were often utilized for memorization and reciting information retained. McGuffey Readers, a six-part series of elementary school reading books, were widely used. The written material in the McGuffey Readers was built to be age-appropriate, with student growth founded around increasing difficulty as student abilities developed. McGuffey Readers reformed the content of America's textbooks and the way that content was presented to students (Smith, n.d.). Interestingly, almost 150 years after its original publication, the McGuffey Readers had a renaissance with over 200,000 copies sold in 1983 alone (Hechinger, 1984).

Federal Department of Education

The formation of the Federal Department of Education in 1867 emphasized the importance of education in America. The ACT of 1867 directed the Department of Education to gather and report the condition and development of education in reports to Congress. In the first report of 1870, the commissioner reported nearly 7 million children were enrolled in elementary schools, and 80,000 were enrolled in secondary schools (National Assessment of Adult Literacy [NAAL], 2014).

By 1890, 30% of Americans lived in cities, and a common pattern of public school governance had emerged. The locally appointed or elected public school board ran the schools, and many issues created a nationwide torrent of criticism, innovation, and reform that soon took on all the earmarks of a social movement (Cremin, 1961). Despite some uncertainty about centralization, state departments of education grew steadily in size, yet there were only 129 state departments of education in the entire nation (Steffes, 2012). One-room schoolhouses were attended by students in Grades 1-8 and were the norm throughout the country. Teachers taught subjects in reading, writing, arithmetic, grammar, history, rhetoric, and geography. Philosophers and educationalists recognized that there is a theory of curriculum-formulation that is no less extensive and involved than that of the method. As educationist John Franklin Bobbitt stated in *The Curriculum,* the first textbook published on the subject of curriculum research in 1918, “to know what to do is as important as to know how to do it” (Bobbitt, 1918).

Models of Schools

There are often only two models of schooling: traditional and non-traditional. Traditional instruction includes obedience to authority through punishment and rewards, skill and drill, authoritarianism, and rote learning (Kohn, 2003). In the 20th century, progressive education or

non-traditional schooling began to strengthen and broadcast educational philosophies on recognizing students as individuals with individual needs with a de-emphasis on school textbooks. In the case of 20th century progressive education, John Dewey and Jean Piaget most certainly developed the progressive movement and its philosophies of progressive education (Little & Ellison, 2015).

Progressive Education

Often recognized as the "father of progressive education," John Dewey was one of the most notable figures of the early 20th century in education. Dewey believed curriculum was much more than just textbooks or materials that teachers utilized within the classroom and that curriculum should be relevant to students' lives (PBS Online, 2013). Progressives believed the traditional curriculum involved rigid regimentation and discipline that overlooked the capacities and interests of a child's natural or instinctual inclination to learn (Dewey, 2015). Progressive education was tied to a larger context. Students were taught through (a) artistic opportunities, (b) learning by doing, (c) development of problem-solving and critical thinking through shared experiences and activities, and (d) social development in preparation for contributing to a good society. Progressive education was tied to the principles of teaching the whole child.

A giant in the field of modern human development, Jean Piaget, a Swiss psychologist and self-proclaimed experimental philosopher, formulated a grand theory of intelligence in 1936 that identified what made children who they are, rather than their environment or their genetic constitution, the primary force in the development of thought (Bjorklund & Causey, 2017). The wildly known theory became known as Piaget's theory of cognitive development which includes four stages of development: sensorimotor stage (0-2 years of age), preoperational stage (2-6 years of age), concrete operations (6-11 years of age), and formal operations (11-adult).

According to Piaget, children are the engineers of their individual intellectual development and the notion that children are born with the natural capacity to create their learning provided the connection to progressive education. Progressive educators believed educational change became stagnant primarily due to the massive impact of the industrial revolution. Progressives thought that the academic curriculum was inconsequential for most students, as most students would not attend higher education (Hartman, 2011).

Post World War I

In the 1930s, textbooks became more substantial, more colorful, and easier to read and use (Walker, 2016). Education had become a tremendous constructive tool of civilization (McCulloch, 2011). Authors controlled the vocabulary of early readers to include only the simplest and most familiar words repeated many times. Textbooks gradually progressed from ordinary to new and from simple to complex. Students lacked interest in the schools' curriculum, and schools reported that about 25% of students dropped out of school because of a lack of interest in the school curriculum (McCulloch & Crook, 2014). Reformers in the 1950s began to experiment with flexible, integrated organizational patterns similar to those of elementary schools. This usually consisted of a single female teacher in a self-contained, age-graded classroom teaching all subjects to the same children all day long (Walker, 2016). This education practice placed more emphasis on a highly efficient and organized textbook curriculum series.

Following World War II, both the United States public and university educational systems grew, both physically and culturally. By physical standards, the sheer number of new classrooms and the dramatic student population increase caused welcomed growth pains. Culturally, a stronger emphasis on education, especially in the sciences and math, increased U.S. levels of education, but they did not bring with them increasing levels of happiness and life

satisfaction (Lane, 2005). Furthermore, an ethnically destructive racial divide, still felt today, gave the American society its unjust education identity (Vanneman et al., 2009). During the 1940s, more than half of the U.S. population had completed no more than an 8th grade education, with only 6% of males and 4% of females completing four years of college (NAAL, 2014).

Great Space Race

In October of 1957, the Soviet Union launched the first artificial satellite. Sputnik I orbited the earth, and the great space race was on. Through Sputnik, the country became aware that America was not the sole leader in science and discovery (Rudolph, 1990). During this time, scientists and mathematicians organized and led curriculum development projects to revise and modernize school textbooks (Walker, 2016). In January 1961, President John F. Kennedy called science a dark power and stated that the U.S. and the U.S.S.R must "begin anew the quest for peace before the dark powers of destruction unleashed by science engulf all humanity" (Fishman, 2019). President Kennedy stated that the Americans and the Russians needed to invoke the "wonders of science instead of its terrors" (Fishman, 2019). The Sputnik Crisis caused a substantial amount of federal money to be invested in secondary and elementary education through the National Science Foundation (Houdek et al., 2007), and in turn, the education curriculum at the time became centered around science and math (Urban & Wagoner, 2009). The math curriculum was overhauled with two very different goals in mind. The first goal was to increase the number of engineers, scientists, and mathematicians. The second goal was to develop a workforce that could complete complicated calculations to support the military and the country's great space race efforts (Levitt & Dubner, 2019).

High Standards of the Elementary and Secondary Education Act (ESEA) in 1965

The Elementary and Secondary Education Act (ESEA), as established by President Lyndon B. Johnson in 1965, brought education into the forefront of the national attack on poverty and represented a landmark commitment to equal access to quality education. Since its inception, ESEA has reliably remained the single largest fiscal source of federal support for educationally disadvantaged schoolchildren (Thomas & Brady, 2005). ESEA was initially developed and passed by Congress to address the needs of individual students recognized as disadvantaged and falling within lower socioeconomic groups through the development of compensatory and supplementary programs. ESEA emphasized high standards and accountability through evidence-based activities, strategies, and interventions (National Center on Improving Literacy, 2018) and has been reauthorized every five years since with various revisions made. Compensatory and supplementary programs funded through ESEA include: (a) Title I, (b) Bilingual Education and English as a Second Language, (c) Gifted and Talented, (d) Vocational Education, (e) American Indian, Native Hawaiian, and Alaska Native Education, and (f) Special Education (Hunt et al., 2010). The curriculum influenced by standards was designed around increasing assessment scores in math and reading.

Test Scores as Indicators of Quality

Since the early 1900s, the federal government has increased involvement in everyday societal life. Yet, states took a much more active role in public schools and curriculum concerns during the Nixon administration. Schools were held accountable for producing measurable results in student achievement and academic growth. From an economic standpoint, individual income and state financial resources were falling, and costs rose across the board. School

budgets reflected a drop in local support from 60% to 30% with states and the federal government garnering a firmer grasp of education (Glatthorn et al., 2019). Test scores gained a more substantial public acceptance as indicators of educational quality and helped support a movement to strengthen the academic rigor of curriculum in the 1980s and 1990s (Chubb & Moe, 1990).

National Commission on Excellence in Education's *A Nation at Risk*

In the 1980s, President Ronald Reagan's National Commission on Excellence in Education released *A Nation at Risk* (United States National Commission on Excellence in Education [USNCEE], 1984). The report identified that the U.S.'s once unchallenged preeminence in commerce, industry, science, and technological innovation was being overtaken by competitors throughout the world and the educational foundations of society were presently being eroded by a rising tide of mediocrity that threatened the U.S.'s future as a nation and a people (USNCEE, 1984). The report described that what was unimaginable a generation ago had begun; the United States was falling behind other countries academically. The highly criticized report included a long list of recommendations to improve public schools in the United States which included:

1. Adoption of rigorous standards and state and local tests to measure achievement;
2. Stronger graduation standards;
3. Sufficient financial resources; and
4. Curriculum changes. (Strauss, 2018)

Although the media's initial reaction to the *A Nation at Risk* report was mostly enthusiastic, the document did have its critics (Hayes, 2004). Many criticized the lack of transparency, negative apocalyptic tone, biased omissions of data reporting, and a recognition of

a statistical effect known as the Simpson's Paradox (Kamenetz, 2018). Simpson's Paradox is a statistical phenomenon where an apparent trend in statistics, caused by a mystifying variable, can be removed or inverted by separating the data into natural groups (Reinhart, 2015). Regardless of the critics, the findings in the National Commission on Excellence in Education report created extensive changes at the federal, state, and local levels, mainly focusing on developing national and state standards.

States Compete

Following the highly criticized release of *A Nation at Risk* (USNCEE, 1984), states were ranked by educational attainments identified from student assessment scores such as the ACT or SAT (Vinovskis, 2009). School days became longer, homework increased, and more tests were given to students (Berliner & Calfee, 2004). According to Graham (2013), states adopted rigorous, measurable academic standards to outline what is essential for students to master since standards form the basis for learning and creativity and describe what to teach (Wong & Wong, 2009).

No Child Left Behind (NCLB): Educational Consequences

Before President George W. Bush's administration introduced the No Child Left Behind (NCLB) Act in 2001, the federal government required students to take six tests throughout their K-12 careers, one each in reading and math in elementary school, middle school, and high school (Robinson & Aronica, 2016).

In 2002, the NCLB Act was signed into law by President Bush and was the reauthorization of the Elementary and Secondary Education Act (ESEA) of 1965. The purpose of the NCLB Act (2002) was as follows: (a) ensure that all students achieve high academic standards, (b) provide professional development for teachers, (c) keep schools safe, and

(d) promote innovative educational strategies and practices (Baesler, 2015). Nevertheless, schools were punished or rewarded for academic achievement on standardized assessments with accountability measures linked to *A Nation at Risk* (Ravitch, 2016). To qualify for federal funding, schools were required to administer fourteen standardized tests in reading and math to public school students (Robinson & Aronica, 2016). The federal structure of the American polity in education effectively confirmed that implementation of standards, testing, and accountability reform fell to the states (Rhodes, 2014).

Within the law, NCLB (2002) forced states to identify schools that were failing based on assessment scores earned through standardized tests and then proceeded to advise states on how to fix those schools with the ultimate goal of every single student being able to read and do math at proficiency levels determined by the states (Nelson, 2015). Additionally, schools were mandated to make adequate yearly progress (AYP). For low-performing schools that failed to make progress, consequences occurred. States were required to select a standardized test to administer that was based on federal testing requirements.

National Curriculum is Born

NCLB (2002) had theoretically and technically ended the United States history of no national curriculum. States were required to adopt college and career-ready standards in reading/language arts and mathematics. As a result, a national curriculum was born with the official launch of Common Core State Standards (Common Core) by the National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO) in 2010 (Zhao, 2012).

Little more than a vague idea in 2008, the Common Core was introduced in 2009. It was revealed and adopted by thirty-nine states and the District of Columbia in 2010, with other states

to follow in subsequent years (Hess & McShane, 2014). The Common Core referred only to math and English language arts (ELA) and were designed to ensure that students graduating from high school were prepared to enter college or the workforce with the standards designed to provide clarity and consistency for learning expectations in English and math across the country (Baesler, 2013).

In 2010, school administration and teachers throughout the country began attending massive workshops and conferences that reviewed and informed all those in attendance on the Common Core State Standards (CCSS). The release of the standards was not huge news, but it sent most American schools on an unprecedented journey – a journey toward a standard, almost national curriculum (Zhao, 2012). The aim of the CCSS was to replace old state standards, increase accountability, revamp school instruction, and force changes to teacher prep and professional development. To deliver on this idea, states, districts, and schools needed to make a lot of changes to school curriculum, testing, and teacher training (Hess & McShane, 2014). Alignment practices, scope and sequence, and curriculum mapping were discussed and shared. The time had arrived for schools to begin overhauling what curriculum to use and how the curriculum was taught. As a result of NCLB (2002), options and opportunities to exhibit creativity and personalized school curriculum narrowed for many U.S. schools (Shirley, 2017).

Increased State Competition

During President Barack Obama's inaugural address in January 2009, he stated that the country needed sweeping federal efforts to improve the U.S. public schools and that schools fail too many people. President Obama asserted that "we will transform our schools and colleges and universities to meet the demands of a new age. All this we can do. All this we can do" (Phillips, 2009). As part of the American Recovery and Reinvestment Act (ARRA) of 2009, the U.S.

Department of Education (2009) released $4.35 billion in competitive grants to states (McGuinn, 2011). In the grant program, Race to the Top, the core focus was on helping states construct the administrative capacity to implement new educational innovations effectively and creating the political cover needed for state education reformers to transform and to innovate (McGuinn, 2011). In doing so, its aim was to principally raise standards and align strategies and structures to the goal of college and career readiness with a renewed emphasis on science, technology, engineering, and mathematics (STEM) curriculum offerings.

The Department of Education asked states to advance school reforms around four specific areas:

1. Adopting standards and assessments that prepare students to succeed in college and the workplace and to compete in the global economy;
2. Building data systems that measure student growth and success, and inform teachers and principals about how they can improve instruction;
3. Recruiting, developing, rewarding, and retaining effective teachers and principals with a focus on high demand areas; and
4. Turning around the lowest-achieving schools. (U.S. Department of Education, 2019)

Within three phases of Race to the Top, North Dakota did not participate in Phase 1 or Phase 2 and was not invited for Phase 3. Both Phase 1 and Phase 2 of the competition included education policy priorities upon which each applicant would be evaluated. States were asked to describe their current status and outline their future goals in meeting the criteria in each of these categories (Howell & Magazinnik, 2017). Of the $4.35 billion allocated for Race to the Top state grantees, over $4 billion was awarded to 18 states (Bakeman, 2015), and the remaining $500 million was unawarded (Shah, 2013).

Researcher's Personal Experience with Common Core

In July of 2012, the researcher attended the Building Capacity for Implementation of Standards-Based Instruction/Common Core July 23-26 in Fargo, ND, at the Hilton Garden Inn and Carl Ben Eielson Middle School. School staff were told to bring "your Common Core Flip Books, a laptop computer/iPad, an extension cord or power strip, a printed copy of the Common Core Standards, or a copy downloaded on your computer along with lots of other Common Core resources." For four days, the researcher and hundreds of other state educators and administrators listened to why CCSS are effective and how to teach the CCSS. As noted by the researcher, a female attendee asked about the creative, non-standard-based lessons some of her students had come to enjoy and look forward to each year. The CCSS speaker shared that teachers are to follow the standards, and teachers will need to discontinue using any non-common core standard material. Teachers were told to begin using preapproved curricula, assignments, and tests rather than make their own lesson plans or permit students to do free-choice activities (Tampio, 2018).

Also in 2012, the South East Education Cooperative (SEEC) scheduled a one-day training. Staff members were told to "come and learn about the Common Core State Standards from the Authors of The Common Core: Clarifying Expectations for Teachers and Students." Two years after the CCSS were implemented, we were still being asked, "Have we figured out what a Common Core classroom and building look like?" The answer was a resounding "no." Schools were not ready for the homogenization of student learning. The standardized tests developed by each state assessed student learning and ushered in the overall need and concern for a curriculum textbook series to fulfill school academic needs. Unsurprisingly, the varied nature of Common Core State Standards adoption, implementation, and testing appears to have

resulted in lower test scores (2015 Normative Data, 2019). This concern was confirmed with the 2019 release of the federally mandated National Assessment of Educational Progress (NAEP) reading and math test, given every two years to students in Grades 4-8. The 2019 NAEP test shows that average reading student test scores have dropped for the third year since 2015. From 2017 to 2019, 4th grade students at or above the NAEP reading proficiency levels declined from 37% to 35%, while 8th grade students' proficiency levels declined from 36% to 34% (National Assessment of Educational Progress [NAEP], 2019). Coincidently, national ACT scores for the graduating class of 2019 show record-low college readiness rates in English and math based on declines in reading and math scores (Anderson, 2019).

North Dakota Standards

In the 2014-2015 school year, North Dakota rolled out new assessments aligned with the ND Academic Content Standards. The new high-stakes tests developed by the Smarter Balanced Assessment Consortium were created to gauge how well students were mastering the standards. Pencil and paper tests were replaced with computer-adaptive assessments that adjusted the difficulty of questions based on student responses. The Smarter Balanced Assessment Consortium's overarching goal was to ensure that all students leave high school prepared for postsecondary success in college or a career through increased student learning and improved teaching (Smarter Balanced Assessment Consortium, 2010).

Reduction in Student Assessments

Every Student Succeeds Act (ESSA) (2015) was signed into law by President Barack Obama on December 10, 2015. ESSA reduced the assessment requirements on states and repudiated the intrusive prescriptiveness of the No Child Left Behind Act (2002). Student well-being and not just student test scores were given a higher priority (Shirley, 2017). In 2017, North

Dakota concluded its use with the Smarter Balanced Standardized Tests. At the time of this study, the North Dakota Department of Public Instruction had contracted with the American Institutes for Research (AIR) for the development of a new online assessment system to replace the North Dakota State Assessment for English language arts (ELA) and mathematics with the first online assessment administered in the spring of 2018 (North Dakota Department of Public Instruction [NDDPI], 2019a).

International Comparisons

New standards directly impact curriculum decision-making in schools. After the rollout of the Common Core State Standards, many schools throughout the country purchased new curriculum for better alignment as reflected in state assessments. Common Core standards were based on the common primary school of thought that all public schools were to educate students similarly using a common system for developed equity. According to Kane et al.'s (2016) research, the Center for Education Policy Research (CEPR) at Harvard University surveyed a representative sample of teachers (1,498 teachers) and principals (142 principals) in Nevada, New Mexico, Massachusetts, Maryland, and Delaware to explore the impact the Common Core and changing standards had on teachers. The study found that 82% of mathematics teachers and 72% of English teachers changed over half of their instructional materials, with 80% of ELA teachers and 72% of mathematics teachers using, on at least a weekly basis, curriculum materials that they or their colleagues created (Kane et al., 2016).

Common Core standards were used throughout the country for three years, with some schools adopting the standards sooner. Despite all the influences on the curriculum from policymakers, schools, teachers, competition, domestic desires, and available resources, 4th grade reading scores remained relatively flat since 1992 with no significant change in average

scores since 2005 (U.S. Department of Education, National Center for Education Statistics, 2020).

Today, the concept of globalization and the term have become omnipresent in political, educational, and social conversations. Globalization and international competition heavily influence the education conversation for policymakers. Countries look beyond their borders for competition and comparisons. Nations now look at ways to improve upon their Programme for International Student Assessment (PISA) scores. When first administered in 2000, PISA was recognized as a new way of looking at student performance (Piro, 2019). Unlike state standardized tests, the PISA test includes more open-ended questions designed to measure critical thinking and problem-solving.

The Textbook Influence

Studies of teachers as they plan curriculum and weekly lessons show that most teachers start with a textbook or district curriculum guide as a course outline and adapt it to their specific classroom situation. Teachers, in general, rely heavily on textbooks for weekly lessons (Zahork, 1975). A summary of a teacher's job description (Walker, 2016) would include:

- Selecting and planning daily classroom activities;
- Scheduling and pacing the activities throughout the year;
- Presenting activities to students in a way that enables them to comprehend and follow them;
- Motivating students to participate in activities; and
- Evaluating students' performance on activities.

The school curriculum is sturdy, built to last (Walker, 2016), and the curriculum is a framework for what students should know, understand, and do. Some parts of the curriculum are

compulsory in most schools. Some are optional, and some are voluntary, like clubs and after-school programs (Robinson & Aronica, 2016). The curriculum can be formal such as classroom material that is assessed or informal parts of the school day that are not required. Formal and informal school curriculum can vary drastically between school districts. Several studies (Komoski, 1976; McCuthcheon, 1981) revealed that approximately 50% to over 90% of activities and assignments covered in the classroom over a school year involve published instructional materials like textbooks. Printed instructional materials can be costly, but they provide teachers with the following: (a) scope and sequence, (b) organization of school curriculum in a chronological body, (c) lesson plans, (d) aids scheduling, (e) incorporation of teacher strategies, (f) ties with most recent research, and (g) exploration of technological opportunities. Additionally, printed instructional materials are written, researched, and designed by experts. Textbooks contain the exact words teachers are to say in introducing lessons, questioning students, and assessing learning outcomes (Weis et al., 2006). According to Venezky (1987), textbooks typically contain a manifest curriculum, a latent or hidden curriculum, and a pedagogical apparatus. Textbooks may include teaching suggestions for teachers or offer recommendations for study techniques and self-evaluation for students (Scott & Lawson, 2002).

The curriculum itself has arguably changed very little over the last 100 years, either in terms of its officially stated purposes or in basic curriculum content and design, despite considerable changes in the more expansive socioeconomic and physical worlds (Moore, 2015). Today's classrooms can have an abundance of powerful technology readily available, including laptops, desktops, interactive boards, virtual reality sets, tablets, smartphones, and high-speed wireless internet access. Many are surprised to learn that there is more computing power in a

modern smartphone than in all the Apollo computing systems together, both the onboard ones and those on Earth (Launius, 2019).

Limited Curriculum Change

In an age of globalization, data-driven decision making is integral to the educational decision-making process (Ysseldyke et al., 2006). The world and its many cultures and ways of thinking are smaller and more connected than ever before in human history (Jacobs, 2010). Students in the 21st century are compared to peers within their district, state, country, and other students throughout the world. School curriculum in how it is utilized and decided upon has changed very little. If curriculum is viewed as an indicator of the direction in which students are heading, most have to agree that they are being prepared to travel back in time to the 20th century (Hale & Fisher, 2013).

Unlike teachers in the United States, teachers in European countries can decide on their curriculum and are free to make their selection (Lawton, 2014). Finland, a high Programme for International Student Assessment (PISA) achieving country, has the most competitive and academically challenging teacher education system in the world (Sahlberg, 2015).

Mooney and Mausbach (2008) created the following steps to encourage school systems and stakeholders to plan and develop school curriculum:

1. Establish the Foundation
    a. Analyze state and national standards
2. Data Analysis
    a. Review federal, state, and local test data
    b. Review surveys from parents, teachers, students, and administrators
3. Assessments

    a. Develop benchmark assessments around big ideas in the curriculum

4. Writing
    a. Develop Scope and Sequence and curriculum map
5. Resources Review
    a. Review relevant texts with the team
6. Pilot Process
    a. Teachers pilot two units from each pilot text
7. School Board Approval
    a. Board of Education reviews curriculum and approves
8. Staff Development
    a. Staff trains with new curriculum and materials
9. Implementation
    a. Administration monitors implementation through curriculum maps

As recognized, curriculum selection is not an overnight process but rather carried out over a substantial period of time. Implementation (Step 9) is anticipated to begin around year three and should be carried out for at least four years. Schools with limited resources and finances will have increased difficulty carrying out the extensive process with fidelity. Good instruction is 15 to 20 times more influential than family background and income, race, gender, and other explanatory variables. What is actually being taught is recognized as the strongest possible predictor of gains in achievement (Wong & Wong, 2009). Legislators, the press, parents, and even the students are all insisting on an engaging curriculum.

Money and Mapping

While specific budget lines and items vary from district to district and from state to state, most school budget categories consist of transportation, facilities, energy, health and safety, instruction, curriculum and development as it pertains to curriculum, training and instructional, support to ensure teachers can provide students with necessary skills and knowledge, food services, library services, counseling services, and school leadership and support (Ellerson, 2013). North Dakota Century Code requires the superintendent of public instruction to implement a uniform system for all accounting (Appendix G) and budgeting, along with finance facts (NDCC – Chapter 15.1-09 School Boards, 2019a) (Appendices H & I). Public schools in North Dakota utilize the North Dakota School District Financial Accounting and Reporting Manual (NDSFARM) (2019) to provide a consistent financial and accounting structure and is based on the Financial Accounting for Local and State School Systems series published by the U.S. Department of Education. The NDSFARM manual is designed to serve four primary purposes:

1. Provide structure to permit Local School Agencies (LEAs) to demonstrate prudent use of funds;
2. Supply the means for collecting the financial data necessary to examine the comparability of educational outcomes at the local level;
3. Meet the many demands of the education community for accountability in terms of educational programs; and
4. Be consistent with generally accepted accounting principles (GAAP) advocated by the National Council on Governmental Accounting. (NDSFARM, 2019)

Financial transparency and communication are significantly important in public schools as isolation is the enemy of all school improvements (Sahlberg, 2015). Nothing is more important than creating time for teachers to collaborate and analyze data together (Kallick & Colosimo, 2008). Teachers are asked to create stimulating lessons that maintain student interest, address multiple intelligences and special needs, make connections with disciplines, and include a variety of modalities and approaches. On top of these tasks, teachers are expected to teach in a heterogenous/mixed-ability setting, with limited planning time and resources (Langa & Yost, 2007). Direction and guides are a requisite for an educational journey that brings curriculum mapping and assessment analysis together.

Curriculum mapping is a generic term used to refer to a document that represents a small step in a student's learning path (Hale, 2008). It can also refer to a document that maps everything, in all subject areas, that a teacher needs to cover in a given school year (Glass, 2007). Curriculum mapping is quite laborious and requires an extensive amount of time and collaboration from a variety of school staff. Curriculum mapping is a very beneficial approach to aiding student growth and filling in gaps within the school curriculum; however, curriculum decisions are often made in a vacuum (Jacobs, 1997).

Among curriculum creators, the main organization of the curriculum is embodied in a practice known as scope and sequence (Kridel, 2010). Scope and sequence are often recognized as the scope of classroom material/curriculum to cover within a period of time with the sequence identifying the timeline. Collectively, the two work in sync with each other, and both significantly impact the other. If teachers are using a set of published curricular materials, chances are that the publishing company will provide some sort of scope and sequence for the

content included and intended to be mastered (Hosp et al., 2014). In many ways, the scope and sequence become the blueprints for teachers.

Implementation of curriculum takes a substantial amount of time. After receiving the curriculum, teachers begin to review their weekly, monthly, and yearlong lesson planning. Initial plans and schedules are devised, but students and their individual needs can significantly impact how long it takes to cover lessons initially identified. Most researchers recognize that new curriculum will take at least two years to be fully embedded into the school's education. Staff turnover and changes can extend this time as well.

Staff Training and Journeys Overview

The Houghton Mifflin Harcourt reading series titled Journeys was released domestically during the summer of 2010. A new version with updated scope and sequence (state and federal alignments) was released in 2017. The program brochure states that Journeys is "built upon the research-based instructional design and proven efficacy results, [and] Journeys is the most widely used reading program across the country" (Anderson & Fountas, 2017).

A Houghton Mifflin Harcourt representative trained the Sargent Central elementary staff during after-school sessions through the spring of 2011. Sessions were held in the 6th grade classroom and lasted from two to three hours per session. The training was designed to provide teachers with basic knowledge and practical experiences to implement the Journeys series with fidelity. All licensed elementary teachers were required to attend each of the sessions in addition to the elementary principal.

The Journeys lessons are separated into weekly lessons. Activities throughout each week could consist of big idea and essential questions that pertain to the whole class weekly reader, opening routines, teacher read aloud, vocabulary words, comprehension skills/strategies, stop

and think within the main selection story, your turn for critical thinking development, fluency, deepen comprehension, and small group reading activities. A typical daily/weekly timeline is shown in Table 1.

Table 1

Daily/Weekly Journeys Activities

Daily Activities	**Weekly Activities**
Opening Routines	Comprehension Skills/Strategies
Teacher Read Aloud	Stop and Think
Vocabulary – words to know, context cards	Your Turn
Fluency	Deepen Comprehension
Small group activities	Assessments
Grammar, spelling, and writing activities	

Teachers involved in the training were told to teach concepts essential to reading development and instruction. Scheduling and pace were determined by their individual class needs with state standards as guides for implementation. Completing each Journeys program, lessons varied among teachers with available time choosing available and necessary curriculum components. Teachers used the Journeys scope and sequence that aligned with the Common Core State Standards. Consistent student resources utilized included student edition texts and leveled readers distributed by the teachers. Resources available to the teacher included teacher edition textbooks, focus wall posters that outlined each weekly lesson, benchmark tests, unit tests, diagnostic assessments (1-3), audio text (1-3), vocabulary context cards, leveled readers, assessments, and supplemental grab and go resources. Digital resources included online access to

student and teacher textbook editions, printable assessment resources, phonemic and phonics activities, and leveled readers with audible reading.

Journeys Curriculum Researchers and Authors

The leading researchers and authors of the Journeys series include James F. Baumann, David J. Chard, and Jamal Cooks.

In 2011, James F. Baumann was the Wyoming Excellence Chair of Literacy Education and a professor in the Elementary and Early Childhood Education department at the University of Wyoming. He was formerly a professor of reading education at the University of Georgia, Purdue University, and North Texas State University. Dr. Baumann began his career in education in the early 1970s as an intern in the Native American Teacher Corps project. He taught elementary school and engaged in community service in a rural Winnebago Indian community in Wisconsin.

David J. Chard was the Leon Simmons Endowed Dean of the Annette Caldwell Simmons School of Education and Human Development and Professor in the Department of Teaching and Learning at Southern Methodist University. Dr. Chard has been the principal investigator on several federal research projects, including response to intervention (RTI), reading, reading comprehension instruction, and early childhood mathematics. He has published more than 90 articles, monographs, book chapters, and books on instructional interventions and modifications in reading, mathematics, and expressive writing. He is a member of the International Academy for Research in Learning Disabilities, the American Mathematical Association, and a past president for the Division for Research at the Council for Exceptional Children (Baumann, 2010).

Jamal Cooks was an Associate Professor at San Francisco State University in the Department of Secondary Education. Dr. Cooks taught middle school and high school social studies and English (remedial coursework) at the junior college level. He earned his B.A. from the University of California at Berkeley and M.A. in Social Studies Curriculum Development from the University of Michigan. Dr. Cooks completed his Ph.D. at the University of Michigan (Baumann, 2010).

Organization of the Study

Chapter II provided a literature review of how the progression of educational change in the United States played a significant role in impacting curriculum change in public education with decisions affecting 21st century curriculum offerings such as the Houghton Mifflin Harcourt Journeys reading series. The topics discussed support this dissertation by reviewing influences by policymakers, international and national competition, domestic desires, and available resources within schools. It also addressed how teachers have less of an impact on curriculum and school direction in America. Chapter III describes the methods used to conduct the research study. Chapter IV presents the findings of the research study in quantitative means. Finally, Chapter V presents an interpretation of findings, implications, limitations, recommendations, future research, and summary.

CHAPTER III

METHODOLOGY

The purpose of this quantitative study was to identify if the Houghton Mifflin Harcourt educational publishing company's Journeys reading series is effective in producing student academic growth in the areas of reading in Grade 4 elementary school-aged children as demonstrated through a multi-year longitudinal study. This study utilized 250 assessment scores from pre- and post-Journeys curriculum implementation occurring from 2009 to 2018 at the Sargent Central Public School in Forman, North Dakota. The multi-year longitudinal study focused on the Houghton Mifflin Harcourt (HMH) Journeys reading series and its effectiveness in creating student growth in reading or increasing grade level percentile rankings in elementary school-aged children. By reviewing Sargent Central Public School's 2009-2018 reading achievement scores for Grade 4 on NWEA MAP testing and comparing the results to prior curriculum assessments in reading, this research study tested if the Houghton Mifflin Harcourt (HMH) Journeys reading series is effective in creating student growth and increasing whole student percentile rankings in reading. Quantitative research is applied to describe the current conditions, investigate relations, and study cause-effect phenomena (Gay et al., 2009). Quantitative research allows the identification of correlational relationships. The following research questions guided this study:

1. How does the Houghton Mifflin Harcourt Journeys reading affect pre- and post-NWEA MAP classroom assessment scores over an extended period?

2. How does the Houghton Mifflin Harcourt Journeys reading series compare to the previous reading curriculum regarding NWEA MAP classroom assessment scores?

Data Collection

The researcher analyzed NWEA MAP summative assessment scores and compared the assessment scores to pre- and post-Houghton Mifflin Harcourt Journeys curriculum implementation. The secondary NWEA MAP reading assessment data were collected on nine pre-assessment NWEA MAP test times from 2009 to 2018. Two hundred and fifty NWEA MAP assessments were reviewed and utilized.

With many years of data readily accessible, it was elemental for the researcher to collect and identify considerable amounts of student assessment data. A causal-comparative/quasi-experimental longitudinal quantitative research method was used to differentiate student-level reading growth from year to year with the mean identifying pre- and post-curriculum implementation scores. The researcher used this method based on the easily accessible and useful amount of test data provided by current and previous student test scores available online through the NWEA MAP administrator login portal. Pre- and post-assessment NWEA MAP reports were requested individually and processed individually. Eighteen different reports were downloaded, saved, analyzed, and compiled. Each NWEA MAP report required one hour to process and become available for download.

Following school board policy, the researcher sought school board approval from the Sargent Central Public School Board. On October 9, 2019, the Sargent Central Public School provided consent for the researcher to conduct the research study as the research would not violate any school board policy. The board understood pupil rights would remain protected. Additionally, Sargent Central Public School Board policy states that “surveys and educational

studies can serve as a valuable tool for determining student needs and developing educational services" (Board Policy - Instruction [G], 2019).

The researcher submitted the required documentation and IRB application for secondary research involving data, records, and/or biospecimens to the University of North Dakota's (UND) Institutional Review Board on May 25, 2021. On June 22, 2021, UND's IRB approved the application (Appendices K & L).

The Houghton Mifflin Harcourt Journeys reading curriculum series was used for all 175 days of each school year since the 2010-2011 school year and was compared to the previously adopted reading curriculum. Based on North Dakota STARS data, daily reading time, as conducted by 3rd through 6th grade averaged 52 minutes per day. Parts of speech, six traits of writing, sentence structuring, spelling and punctuation, reading comprehension, and writing and research were all primary focuses for teachers with literary information, phonics, literature techniques, and reading interpretation practiced throughout each school year.

The research consisted of collecting 2009-2018 NWEA student pre-assessment and post-assessment data. The pre-NWEA MAP assessment tests were administered as a baseline test at the beginning of each school year, generally occurring early in the fall with the post-NWEA MAP assessment test occurring during the spring of the same school year. The administration of these tests took place from the fall of 2009 to the spring of 2018. To aid assessment validity, the elementary principal administered electronic NWEA MAP tests on individual Windows-based computers in a quiet and private computer lab. Interruptions were minimal, and networking/hardware issues exceeded the minimal requirements for administering the NWEA MAP assessments.

Participants

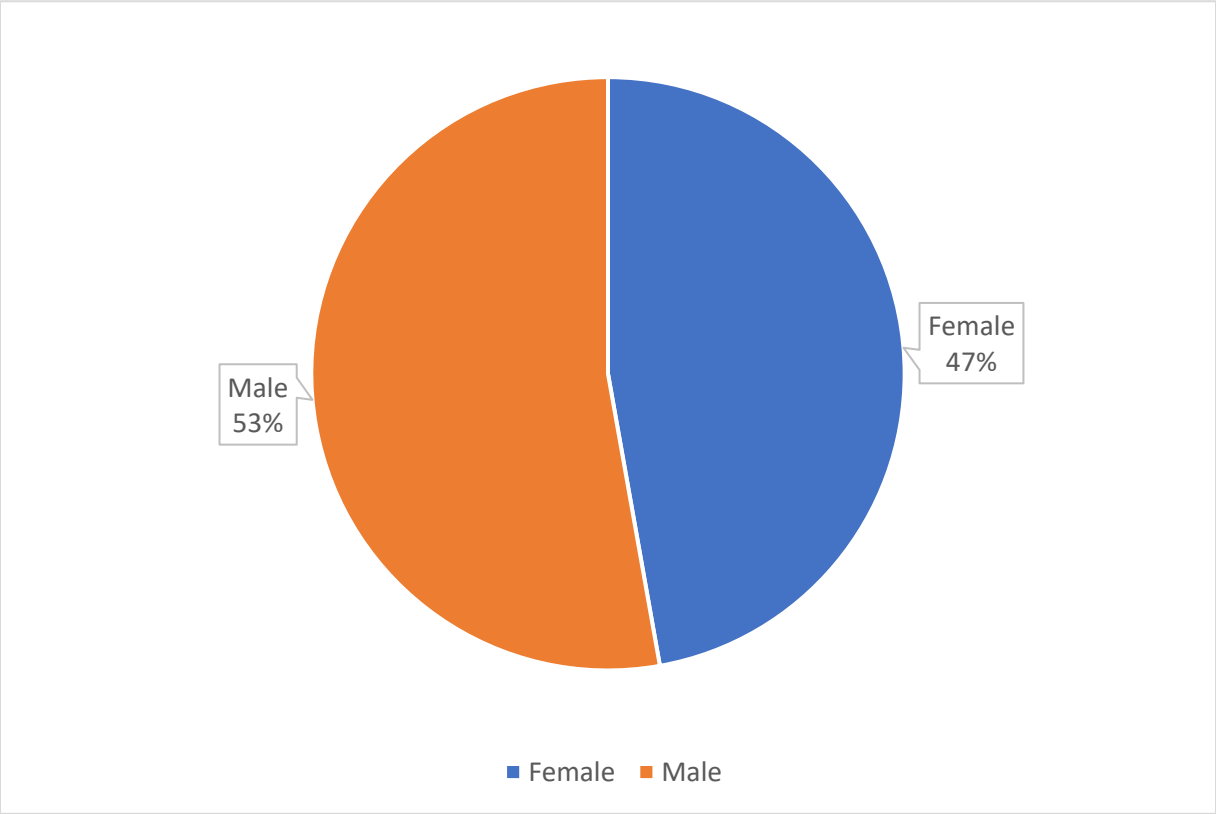
The participants in the study were traditional 4th grade students from a Midwestern elementary school. Grade 4 students were selected based on their attendance at Sargent Central Public School's elementary school between 2009 and 2018. Additionally, the same veteran teacher with over 30 years of teaching experience taught the Grade 4 students during the same period from 2009 to 2018. Student ages varied from eight to 10 years old. The nine-year NWEA MAP accessible sample size provided 250 assessment scores from Grade 4 students who attended Sargent Central Public School. Female students made up 47.20% of the Grade 4 students, while 52.80% of the Grade 4 students were male. Figure 5 shows the gender of the 4th grade students in this study.

Over the nine years data was collected, the school district's taxable valuation increased from $8,755,884 to $17,129,096, an increase of 95.62%. Farm true values accounted for about 70% of the taxable valuation. As the district's taxable valuation increased, individual mills levied increased in revenue potential. One mill levied with a $8,755,884 taxable valuation generates $8,755.88 local school revenue, and one mill levied with a $17,129,096 taxable valuation generates $17,129.10 local school revenue.

With significant changes to the state funding formula along with increased local mill values, local mills levied by the district declined considerably, from 154.5 to 109.11. School expenditures for the 2017-2018 school year were $4,062,243 with actual revenue at $4,389,097. Because of total population sampling, attrition bias was null. With all students within the given data gathering ranges, stratified sampling was null as each subgroup within the study had been represented through the collection process.

Figure 5

Gender of 4th Grade Students



Sargent Central Public School Demographics

The study took place in a PreK-12 school in a small, rural, Midwestern town of which about 16% of the students qualify for free and reduced lunches. At the time of this study, the district had 182 total students, and 15% were designated as having an IEP (Individualized Education Program). The school consisted of a pupil to teacher ratio of 7.6:1 with 23 full-time teachers. Twenty-two percent of the teachers had earned advanced degrees, a slight increase from 18% in 2014-2015. Over 20% of the teachers had less than four years of experience with the average years of teaching experience at 14. The district employed 2.8 full-time administrators. At the time of this study, student ethnicity was 90.5% Caucasian, 3.9% Native

American, 2.3% Hispanic, and Asian American 1.1%. One hundred percent of the students had participated in the most recent North Dakota State Assessment. Student achievement was below the state average, with only 20-24% of the students scoring proficiently in English language arts and math. Elementary grade levels consisted of one classroom teacher per grade level. Paraprofessionals were available. An extensive library was available with reading levels identified. Technology was abundant with Smart Boards in each classroom. Chromebooks, iPads, doc cameras, Windows-based personal computers, and high-speed wireless internet were available in the school. The level of technology utilized by each teacher varied. Weekly reading and language arts instruction satisfied the state recommendation of 600 minutes, with additional minutes used more extensively in the lower elementary grades. Homework was consistently provided throughout each school week, with assessments generally given on the last day of the school week. Due to the magnitude of assessment data gathered, identifiable demographic information is absent from the study results.

Sargent Central Public School Student Attendance

During the 2012-2016 academic years, attendance rates were 95.25%, which is slightly above the state average of 95%. Dropout rates for the district averaged 7% between 2012 to 2016, which is slightly below the state average of 13.25% for the same period. Average daily attendance during the same period declined from 252 to 166 or a decrease of 34.12%. Student enrollment has declined significantly since 1985 with enrollment numbers stabilizing in recent years.

A typical elementary school student will take over five standardized summative tests throughout the school year. Summative tests may include NWEA MAP, STAR Reading, STAR Math, North Dakota State Assessment, NAEP, and AIMSweb. Sargent Central Public School

surpasses the state's suggestion for triangulation of data collection for assurance of test validity, reliability, and accuracy of assessment findings.

Measures

The researcher collected nine years of student test data from 2009 to 2018 from one form of summative assessment given to students twice each school year. Tables, figures, and charts were completed with the data obtained from studying the NWEA MAP. Each assessment was already standardized, measured, and interpreted in the same way. Normative data from 2020 was utilized to evaluate student achievement and percentile ranking growth with the normative data representative of the U.S. public school student population (NWEA, 2020). NWEA MAP assessments cost the district approximately $12.50 per student license. Other school assessments are packaged within the software suites and can cost the district around $13-15 per student license. NWEA MAP consists of selection methods such as multiple choice to complete the assessments. Data usability was easily accessible with student assessment scores stored in servers off-site. With administrative privileges, data was collected and downloaded as needed. Information was compiled into software for statistical computations in preparation for inputting into statistical software such as the Statistical Package for the Social Sciences (SPSS).

Data Analysis

After collecting 250 available NWEA MAP assessment reading scores for total population sampling made through software assessment applications available by NWEA administrative access, the researcher inputted all quantitative NWEA MAP and pre- and post-assessment score data for each participant test result into a tabulated numeric system within an Excel spreadsheet document on a computer. Beginning with the 2009-2010 school year, each

grade level and school year was arranged in ascending order. When a standardized instrument such as NWEA MAP is used for data collection, scoring is greatly facilitated (Gay et al., 2009).

In SPSS, the researcher inputted all pre-NWEA RIT student assessment scores and post-NWEA RIT student assessment scores, as well as all pre-NWEA student percentile scores and all post-NWEA student percentile rankings. Three types of statistical procedures were utilized:

1. Paired sample *t*-tests
2. Mixed ANOVA
3. General linear model (GLM) repeated measures

A paired sample *t*-test analysis was used to compare the pre- and post-NWEA assessments. A mixed ANOVA and general linear model (GLM) analysis were used for comparing the pre-Journeys and post-Journeys curriculum implementation.

For each analysis, the reading curriculum is the independent variable and the NWEA scores are the dependent variable. The study examined the effectiveness of the Journeys reading curriculum in creating student growth in Grade 4 students as measured with a pre- and post-assessment given during the same school year. The resulting data was entered into a table for analysis. *P*-values lower than .05 indicated statistical significance.

Within the interval scale, the mean, or the arithmetic average of the grade level by school year assessment scores, was used to analyze central tendency and variability among raw assessment and percentile rank scores. Because all scores counted, the mean may have been affected by very low or very high outlier assessment scores. Median scores can be helpful when considering widely varying variables (Gay et al., 2009), but they were not included in the data analysis.

In the NWEA norms study, the mean is only utilized because of its large, normally distributed sample (NWEA Connection, 2017). The mode as a central tendency measurement was not a very stable measure. It remained absent from the data analyses as the data consisted of a smaller number of values for each year within the Grade 4 students. The largest Grade 4 class size (22 students) occurred during the 2011-2012 school year. The smallest Grade 4 class size (nine students) occurred during the 2015-2016 school year. From 2009 to 2018, the average Grade 4 class size was 14 students.

Organization of the Study

The methodology used to conduct the research study was identified in Chapter III. Chapter IV identifies the results gathered from the study. Chapter V presents an interpretation of findings, implications, limitations, recommendations, future research, and summary.

CHAPTER IV

RESULTS

Purpose of the Study

The purpose of this study was to identify if the Houghton Mifflin Harcourt Journeys reading series effectively creates student growth in the area of reading in Grade 4 elementary school-aged children as demonstrated through a multi-year longitudinal study. The research method utilized a quantitative format by identifying NWEA MAP assessment scores from pre- and post-assessments given during the same school year. Grade 4 student reading growth was determined by measuring the pre- and post-NWEA MAP assessments given within the same school year. The research study analyzed assessment data from 2009 to 2018. The goal of the study was to answer the following research questions:

1. How does the Houghton Mifflin Harcourt Journeys reading affect pre- and post-NWEA MAP classroom assessment scores over an extended period?
2. How does the Houghton Mifflin Harcourt Journeys reading series compare to the previous reading curriculum regarding NWEA MAP classroom assessment scores?

The researcher utilized three SPSS statistical procedures to answer the two research questions. The three statistical procedures included a paired samples *t*-test, a mixed ANOVA, and a general linear model (GLM) repeated measures analysis.

Paired Samples *t*-Test

The researcher first examined the RIT scores to determine the mean reading RIT scores, as setting up a paired sample *t*-test requires identifying the mean of the difference scores with the variance computed as well (Warner, 2013). Percentile ranking means were also examined along with comparisons to percentile increases or decreases between pre- and post-percentile rankings for RIT scores for pre- and post-Journeys implementation. When conducting a paired samples *t*-test, the goal of the mean difference scores (pre and post) will be large enough (relative to expected variations due to sampling error) for the researcher to reject the null hypothesis (Warner, 2013) with the *p*-value ($p < .05$) being zero or no change from pre- to post-assessment scores for this research study. With a rejection of the null hypothesis, the researcher was able to identify the differences between the pre- and post-assessments that are not caused by chance. A two-tailed test was utilized to test if the mean was significantly greater or significantly less than the pre-assessment. Figure 6 shows the mean NWEA pre- and post-assessment RIT scores for all non-Journeys curriculum (2009-2010) and Journeys curriculum (2010-2018). Figure 7 shows the mean NWEA pre- and post-assessment percentile ranking scores for all non-Journeys curriculum (2009-2010) and Journeys curriculum (2010-2018).

RIT Score Comparison – Post-Journeys Implementation

When comparing the cumulative assessment information, paired *t*-test samples identified a mean pre-assessment RIT score of 198.03 and a mean post-assessment RIT score of 202.44 or a mean RIT score increase of 4.41 from pre-assessment to post-assessments within the post-Journeys curriculum implementation. Variable one was identified as pre-assessment or the pre-assessment given during the first half of the school year, and variable two was identified as the post-assessment or the assessment given during the second half of the school year.

Figure 6

Mean NWEA Pre- and Post-RIT Scores

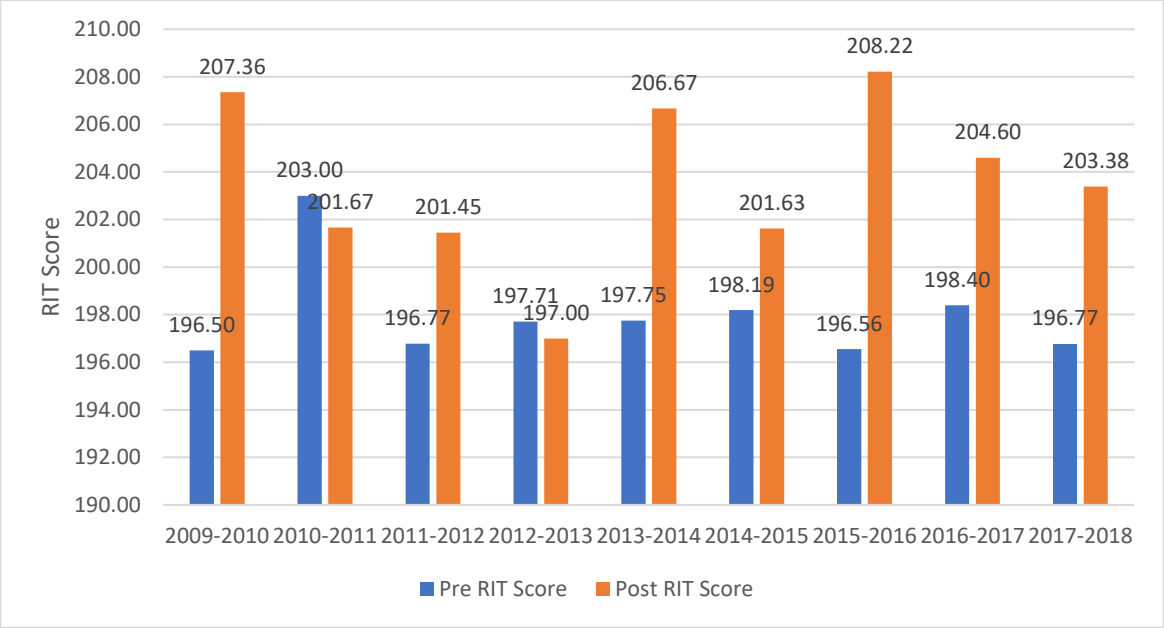
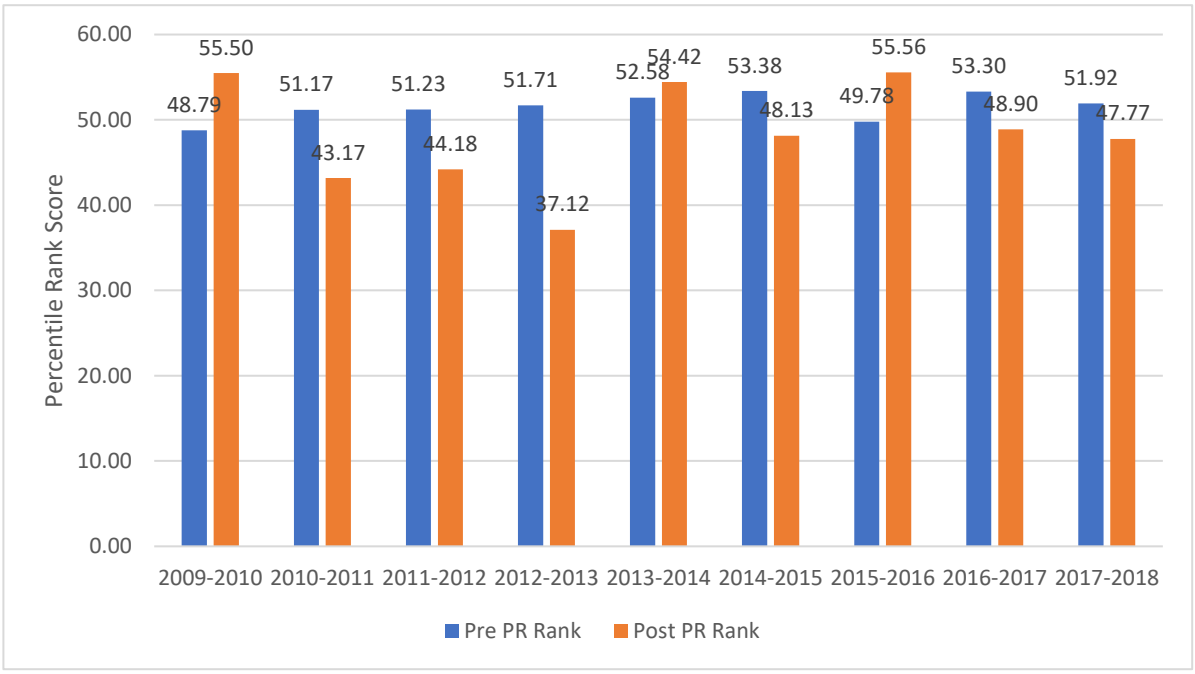


Figure 7

Mean NWEA Pre- and Post-Percentile Ranking Assessment Scores



With the paired samples correlation, the two-sided *p*-value was < .001 and was found to be less than .05. The paired samples *t*-test was found to be statistically significant. A positive correlation of .72 was identified. Tables 2, 3, 4, and 5 show the paired *t*-test RIT score information for post-Journeys implementation.

Table 2

Paired Samples Statistics – Post-Journeys (2010-2018) – RIT

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre RIT Score	198.03	111	11.08	1.05
	Post RIT Score	202.44	111	11.45	1.09

Table 3

Paired Samples Correlations – Post-Journeys (2010-2018) – RIT

		N	Correlation	Significance
				Two-Sided p
Pair 1	Pre RIT Score & Post RIT Score	111	0.721	<.001

Student growth in the areas of reading was identified. Paired samples correlation was .721 with a paired sample test significance with a two-sided *p* of < .001. The mean RIT increased 4.41 points, 198.03 to 202.44 for the pre- and post-assessments for the Journeys reading series between 2010 to 2018, the years in which the Journeys reading curriculum was implemented throughout each school year. Figure 8 shows the mean NWEA pre- and post-assessment RIT scores after the Journeys

Table 4

Paired Samples Test – Post-Journeys (2010-2018) – RIT

		Paired Differences					t	df	Significance
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				Two-Sided p
					Lower	Upper			
Pair 1	Pre RIT Score - Post RIT Score	-4.41	8.42	0.80	-6.00	-2.83	-5.52	110	<.001

Table 5

Paired Samples Effect Sizes – Post-Journeys (2010-2018) – RIT

			Standardizer	Point Estimate	95% Confidence Interval	
					Lower	Upper
Pair 1	Pre RIT Score - Post RIT Score	Cohen's d	8.423	-0.524	-0.721	-0.325

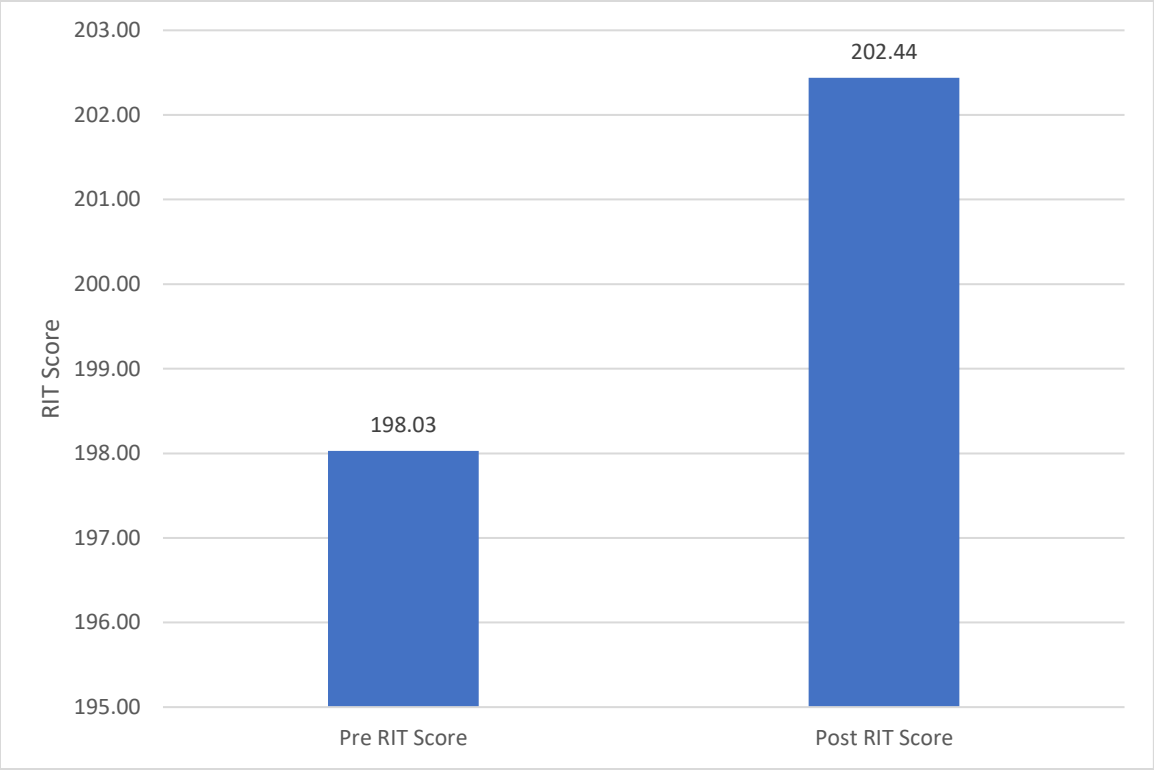
implementation in 2010-2018. *T*-value or the size of disparity relative to the change in the sample from 2010-2018 was identified as -5.52 with degrees of freedom (df) of 110.

Percentile Rank Comparison – Post-Journeys Implementation

For the post-Journeys implementation or the school years from 2010 to 2018, the mean pre- to post-assessment percentile rank declined or regressed from 51.90 to 46.43 or a decrease of 5.47 percentage points for the students in Grade 4. 2020 NWEA normative data was utilized to identify the percentile rankings. Variable one was identified as pre-assessment or the pre-

Figure 8

Mean NWEA RIT Assessment Scores – After Journeys Implementation (2010-2018)



assessment given during the first half of the school year, and variable two was identified as the post-assessment or the assessment. With the paired samples correlation two-sided *p*-value < .001, the *p*-value was found to be less than .05. The paired samples *t*-test was statistically significant for percentile ranking pre- and post-assessment comparison. A positive correlation of .758 was identified. *T*-value was identified as 3.75 with degrees of freedom (df) of 110. Tables 6, 7, 8, and 9 show the paired *t*-test percentile ranking statistical analysis procedures for post-Journeys implementation. Figure 9 shows the mean NWEA percentile rank assessment scores for post-Journeys implementation.

Table 6

Paired Samples Statistics – Post-Journeys (2010-2018) – PR

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre PR Rank	51.90	111	21.67	2.06
	Post PR Rank	46.43	111	22.45	2.13

Table 7

Paired Samples Correlations – Post-Journeys (2010-2018) – PR

		N	Correlation	Significance
				Two-Sided p
Pair 1	Pre PR Rank & Post PR Rank	111	0.758	<.001

Table 8

Paired Samples Test – Post-Journeys (2010-2018) – PR

		Paired Differences					t	df	Significance
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				Two-Sided p
					Lower	Upper			
Pair 1	Pre PR Rank - Post PR Rank	5.47	15.37	1.46	2.58	8.36	3.75	110	<.001

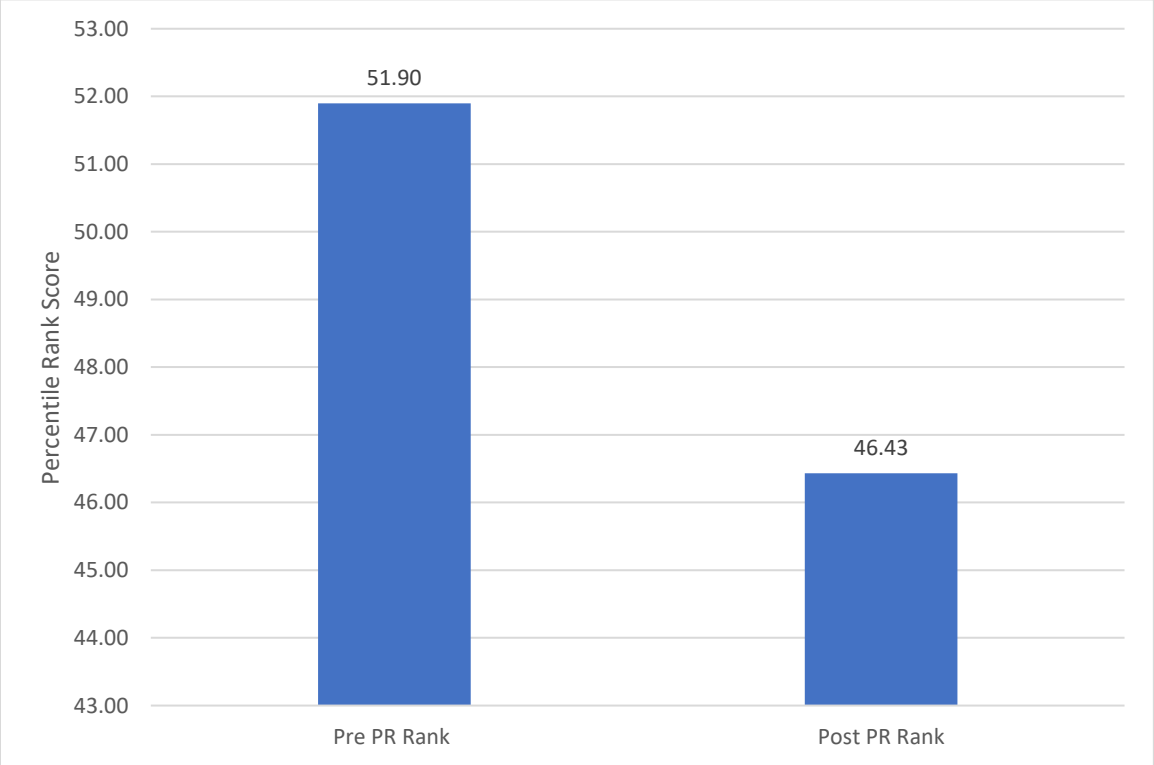
Table 9

Paired Samples Effect Sizes – Post-Journeys (2010-2018) – PR

			Standardizer	Point Estimate	95% Confidence Interval	
					Lower	Upper
Pair 1	Pre PR Rank - Post PR Rank	Cohen's d	15.368	0.356	0.163	0.547

Figure 9

Mean NWEA Percentile Ranking Assessment Scores – After Journeys Implementation (2010-2018)



RIT Means – Post-Journeys Implementation – Year by Year

The researcher conducted additional paired sample *t*-tests for post-Journeys implementation when analyzing the RIT means for each school year from 2010 to 2018. Statistical significance was identified for some individual school years but not others. Student assessment data not available for both pre- and post-assessments for any given school year were removed. Statistical significance was identified for the 2011-2012, 2013-2014, 2014-2015, 2015-2016, and 2017-2018 school years. Not statistically significant school years included 2010-2011, 2012-2013, 2016-2017, with 62.5% of the individual school years from 2010-2018 identified as significantly significant and two of the three school years identified as not significant had declining average RIT scores from pre- to post-assessment. Positive correlations remained high with 75% of the individual school years from 2010-2018 demonstrating a positive correlation above at least .7. *T*-values fluctuated from -6.83 to .89. Degrees of freedom (df) remained constant to a comparable quantity of students completing the pre- and post-NWEA assessments over a given school year. Table 10 shows the paired samples test for post-Journeys implementation for all individual school years from 2010-2018 for RIT scores. Table 11 identifies the year-to-year RIT score *p*-value comparison for post-Journeys implementation.

Percentile Ranking Means – Post-Journeys Implementation – Year by Year

The researcher conducted additional paired sample *t*-tests for post-Journeys implementation when analyzing the percentile rankings (PR) means for each school year from 2010 to 2018. Similar to the RIT score statistical significance comparison, statistical significance was identified for some individual school years but not other individual school years. Statistical significance was recognized for the 2010-2011, 2011-2012, 2012-2013, and 2014-2015 school

Table 10

Paired Samples Test – Post-Journeys (2010-2018) – Pre-RIT Score – Post-RIT Score

	Paired Differences					t	df	Significance
School Year	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				Two-Sided p
				Lower	Upper			
10-11	1.33	5.19	1.50	-1.97	4.63	0.89	11	0.393
11-12	-4.68	6.80	1.45	-7.70	-1.67	-3.23	21	0.004
12-13	0.71	10.44	2.53	-4.66	6.08	0.28	16	0.784
13-14	-8.92	6.78	1.96	-13.22	-4.61	-4.56	11	<.001
14-15	-3.44	4.21	1.05	-5.68	-1.19	-3.27	15	0.005
15-16	-11.67	5.12	1.71	-15.60	-7.73	-6.83	8	<.001
16-17	-6.20	13.51	4.27	-15.86	3.46	-1.45	9	0.181
17-18	-6.62	6.45	1.79	-10.51	-2.72	-3.70	12	0.003

Table 11

Year to Year p-value Comparison – RIT Score – Post-Journeys Implementation

	Significance
School Year	Two-Sided p
2010-2011	0.393
2011-2012	0.004
2012-2013	0.784
2013-2014	<.001
2014-2015	0.005
2015-2016	<.001
2016-2017	0.181
2017-2018	0.003

years. Not statistically significant school years included 2013-2014, 2015-2016, 2016-2017, and 2017-2018 with 50% of the individual school years from 2010-2018 identified as significantly significant when identifying the percentile ranking for each school year.

Positive correlations remained high with 75% of the individual school years from 2010-2018 demonstrating a positive correlation above at least .750. *T*-values fluctuated from -1.77 to 3.92. Degrees of freedom (df) remained constant to a comparable quantity of students

completing the pre- and post-NWEA assessments over a given school year. Table 12 shows the paired samples test for post-Journeys implementation for all individual school years from 2010-2018 for percentile ranking scores. Table 13 identifies the year-to-year percentile ranking *p*-value comparison for post-Journeys implementation. Figure 10 shows the mean NWEA pre- and post-assessment percentile rankings for post-Journeys implementation.

Table 12

Paired Samples Test – Post-Journeys (2010-2018) – Pre-PR Score – Post-PR Score

	Paired Differences					t	df	Significance
School Year	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				Two-Sided p
				Lower	Upper			
10-11	8.00	10.98	3.17	1.02	14.98	2.52	11	0.028
11-12	7.05	14.28	3.04	0.71	13.38	2.31	21	0.031
12-13	14.59	15.35	3.72	6.70	22.48	3.92	16	0.001
13-14	-1.83	15.68	4.53	-11.79	8.13	-0.41	11	0.693
14-15	5.25	9.52	2.38	0.18	10.32	2.21	15	0.043
15-16	-5.78	9.81	3.27	-13.32	1.76	-1.77	8	0.115
16-17	4.40	28.19	8.92	-15.77	24.57	0.49	9	0.633
17-18	4.15	10.23	2.84	-2.03	10.34	1.46	12	0.169

RIT Score – Pre-Journeys Implementation

The pre-Journeys reading curriculum data demonstrated a pre-assessment NWEA RIT mean score of 196.5 with a post-assessment NWEA RIT mean score of 207.36, an NWEA RIT growth of 10.86 points, or an increase of 5.53%. When evaluating the single pre-Journeys curriculum implementation year (2009-2010) with a two-tailed hypothesis, the value of *t* was 5.51. The value of *p* was .0001. With the *p*-value < .05, the paired samples *t*-test for pre-Journeys implementation was statistically significant, a positive correlation was identified. Figure 11 shows the mean NWEA pre- and post-assessment RIT scores before Journeys implementation in

2009-2010. Tables 14-17 show the paired samples *t*-test for pre-Journeys implementation from 2009-2010 for RIT scores.

Table 13

Year to Year p-value Comparison – PR Score – Post-Journeys Implementation

	Significance
School Year	Two-Sided *p*
2010-2011	0.028
2011-2012	0.031
2012-2013	0.001
2013-2014	0.693
2014-2015	0.043
2015-2016	0.115
2016-2017	0.633
2017-2018	0.169

Figure 10

Mean NWEA Pre- and Post-Assessment Percentile Rankings – Post-Journeys Implementation

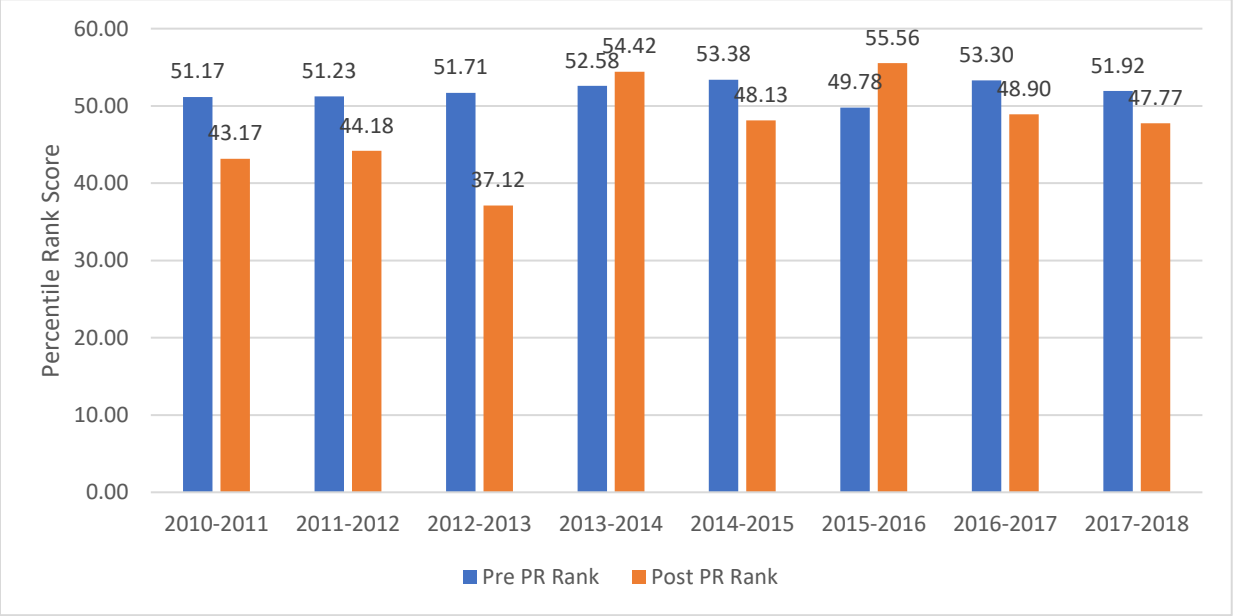


Figure 11

Mean NWEA Pre- and Post-Assessment RIT Scores – Pre-Journeys Implementation (2009-2010)

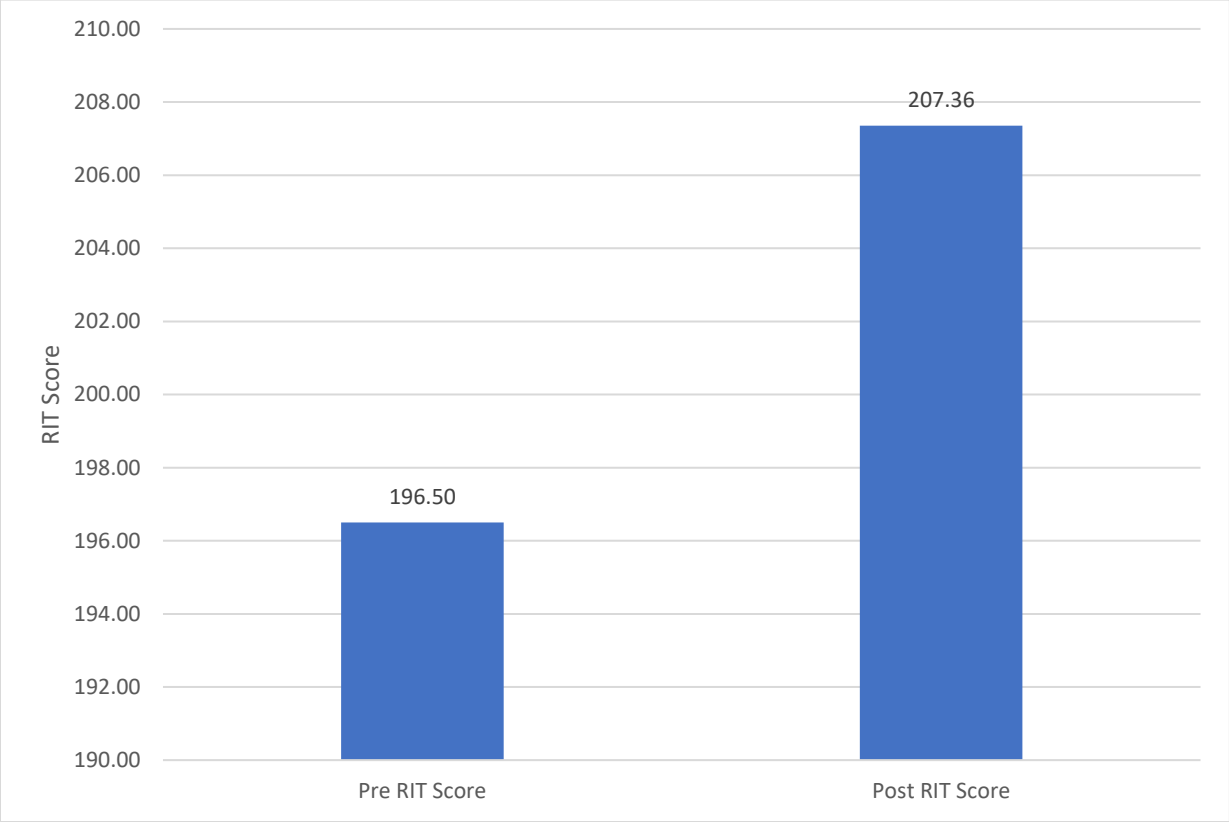


Table 14

Paired Samples Statistics – Pre-Journeys (2009-2010) – RIT

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre RIT Score	196.5	14	13.19	3.53
	Post RIT Score	207.36	14	7.71	2.06

Table 15

Paired Samples Correlations – Pre-Journeys (2009-2010) – RIT

		N	Correlation	Significance
				Two-Sided p
Pair 1	Pre RIT Score & Post RIT Score	14	0.880	<.001

Table 16

Paired Samples Test – Pre-Journeys (2009-2010) – RIT

		Paired Differences							Significance
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Two-Sided p
					Lower	Upper			
Pair 1	Pre RIT Score - Post RIT Score	-10.86	7.38	1.97	-15.12	-6.60	-5.51	13	<.001

Table 17

Paired Samples Effect Sizes – Pre-Journeys (2009-2010) – RIT

			Standardizer	Point Estimate	95% Confidence Interval	
					Lower	Upper
Pair 1	Pre RIT Score - Post RIT Score	Cohen's d	7.378	-1.471	-2.225	-0.692
		Hedges' correction	7.600	-1.429	-2.16	-0.672

Percentile Rank Comparison – Pre-Journeys Implementation

In the pre-Journeys implementation, the mean pre- to post-assessment percentile increased from 48.79% to 55.5%, a 6.71 point percentile ranking increase or 13.75%. When

evaluating the single pre-Journeys curriculum implementation year (2009-2010) with a two-tailed hypothesis, the value of *t* was 2.13. The value of *p* was .05253 and was not significant, with a *p*-value greater than .05. A positive correlation was identified. Table 18-21 shows the paired samples *t*-test for pre-Journeys implementation from 2009-2010 for percentile ranking scores. Figure 12 shows the mean NWEA pre- and post-assessment percentile rankings before Journeys implementation in 2009-2010.

Table 18

Paired Samples Statistics – Pre-Journeys (2009-2010) – PR

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre PR Rank	48.79	14	23.91	6.39
	Post PR Rank	55.50	14	17.30	4.62

Table 19

Paired Samples Correlations – Pre-Journeys (2009-2010) – PR

		N	Correlation	Significance
				Two-Sided p
Pair 1	Pre PR Rank & Post PR Rank	14	0.885	<.001

Table 20

Paired Samples Test – Pre-Journeys (2009-2010) – PR

		Paired Differences							Significance
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Two-Sided p
					Lower	Upper			
Pair 1	Pre PR Rank - Post PR Rank	-6.71	11.78	3.15	-13.51	0.09	-2.13	13	0.053

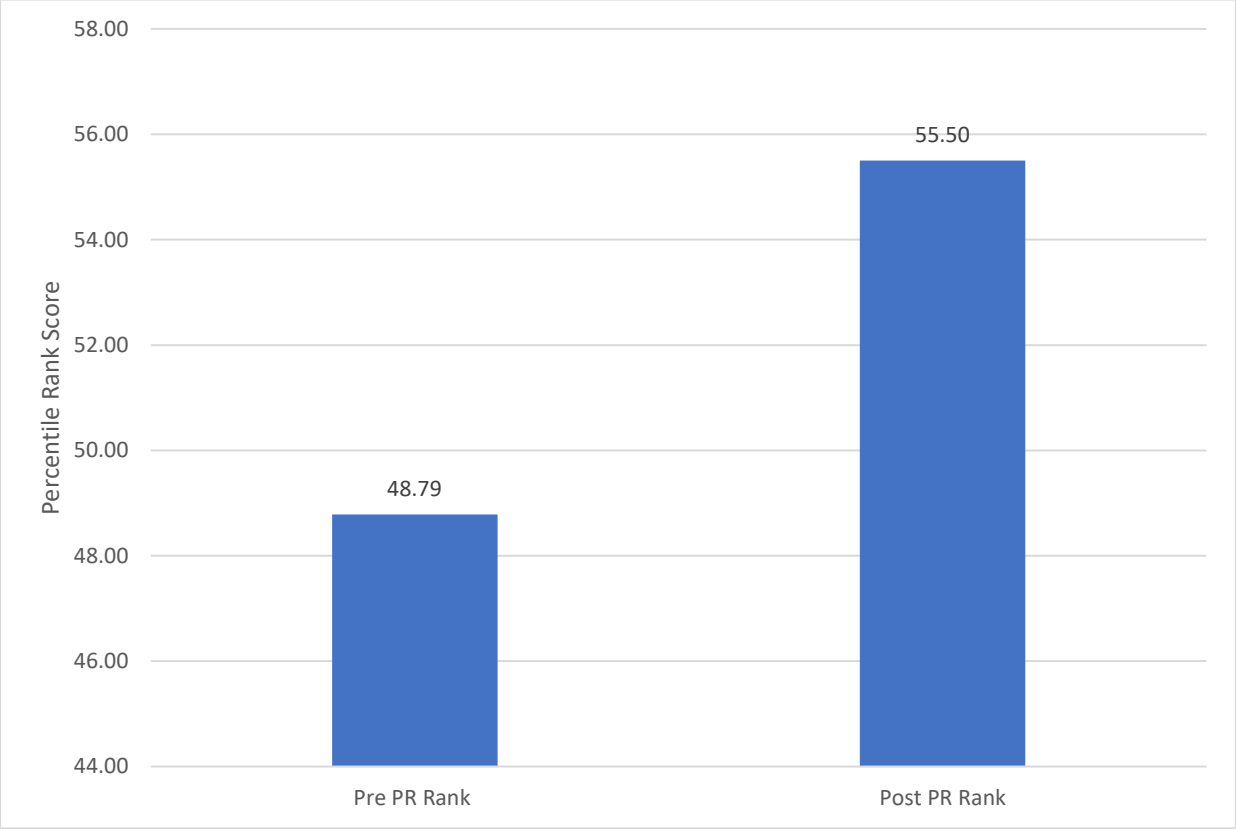
Table 21

Paired Samples Effect Sizes – Pre-Journeys (2009-2010) – PR

			Standardizer	Point Estimate	95% Confidence Interval	
					Lower	Upper
Pair 1	Pre PR Rank - Post PR Rank	Cohen's *d*	11.776	-0.57	-1.128	0.006
		Hedges's correction	12.130	-0.554	-1.095	0.006

Figure 12

Mean NWEA Pre- and Post-Assessment Percentile Rankings – Pre-Journeys Implementation (2009-2010)



Paired Samples *t*-Test Summary

The post-Journeys reading curriculum implementation data demonstrated a pre-assessment NWEA RIT mean score of 198.03 with a post-assessment NWEA RIT mean score of

202.44, an NWEA RIT growth of 4.41 points, or an increase of 2.27% from 111 Grade 4 students and 222 pre- or post-assessments over a period from 2010-2018. With a two-sided *p*-value of <.001, the post-Journeys RIT 2010-2018 data was identified as statistically significant with a positive correlation of .721.

The post-Journeys reading curriculum implementation data demonstrated a pre-assessment NWEA mean percentile ranking score of 51.9 with a post-assessment NWEA percentile ranking mean score of 46.43, a decrease of 5.47 percentile points or 10.54% as compared with national NWEA 2020 normative data for 4th grade students. With a two-sided *p*-value at <.001, the post-Journeys percentile ranking 2010-2018 data was identified as statistically significant with a positive correlation of .758.

The pre-Journeys reading curriculum implementation demonstrated a pre-assessment NWEA RIT mean score of 196.5 with a post-assessment NWEA RIT mean score of 207.36, an NWEA RIT growth of 10.86 points, or an increase of 5.53% from 14 Grade 4 students and 28 pre- or post-assessments over a period of time from 2009-2010. With a two-sided *p*-value at <.001, the pre-Journeys 2009-2010 RIT data were identified as statistically significant with a positive correlation of .88.

The pre-Journeys reading curriculum data demonstrated a pre-assessment NWEA percentile ranking score of 48.79% with a post-assessment NWEA percentile ranking score of 55.5%, a 6.71-point percentile ranking increase, or an increase of 13.75% as compared with national NWEA 2020 normative data for 4th grade students. With a two-sided *p*-value at <.001, the pre-Journeys 2009-2010 percentile ranking data were identified as statistically significant with a positive correlation of .885.

The 4.41 NWEA RIT mean point increase for the pre- and post-assessments for the years of Journeys curriculum implementation from 2010 to 2018 demonstrated the Journeys reading average curriculum score was 6.45 points lower in growth from pre- to post-assessment scores as compared to the previous curriculum utilized within the school in Grade 4. Additionally, the Journeys reading curriculum's mean percentile rankings declined while the pre-Journeys reading curriculum increased its mean percentile rankings. Table 22 identifies a paired *t*-test summary for all academic years utilized within the research study. Except for the 2009-2010 school year, all other school years used the Journeys reading curriculum.

Table 22

Paired t-Test Summary – RIT and PR

School Year	Pre RIT Score	Post RIT Score	N	Pre PR Rank	Post PR Rank
2009-2010	196.5	207.36	14	48.79	55.5
2010-2011	203	201.67	12	51.17	43.17
2011-2012	196.77	201.45	22	51.23	44.18
2012-2013	197.71	197	17	51.71	37.12
2013-2014	197.75	206.67	12	52.58	54.42
2014-2015	198.19	201.63	16	53.38	48.13
2015-2016	196.56	208.22	9	49.78	55.56
2016-2017	198.4	204.6	10	53.3	48.9
2017-2018	196.77	203.38	13	51.92	47.77
Before Journeys	196.5	207.36	14	48.79	55.5
After Journeys	198.03	202.44	111	51.9	46.43

Pre- (2009-2010) and Post- (2010-2018) Curriculum Implementation Mixed ANOVA

A mixed ANOVA analysis was used to identify any student academic changes in reading as demonstrated on NWEA MAP assessments from the pre-Journeys curriculum to the post-Journeys reading curriculum implementation through pre- and post-assessment analysis. The mixed ANOVA is called "mixed" because it involves a mixture of between-subjects and within-subjects variables (specifically, one of each). Participants were in groups on a between-subjects independent variable (for example, an experimental condition and a control condition). They also had repeated measures data (for example, a pre-test and a post-test). The mixed ANOVA allows researchers to test for an interaction of the between-subjects and within-subjects variable or in more simplistic terms, it enables researchers to know if the change from pre-test to post-test is different between the two groups (Strunk & Mwavita, 2020). Group one was identified as pre-Journeys curriculum implementation, and group two was identified as post-Journeys curriculum implementation. A mixed ANOVA analysis provided the researcher to test such a question. The post-NWEA MAP assessment was identified as the dependent variable, with the pre-NWEA MAP assessment identified as the independent variable. To facilitate accuracy, pre-assessment NWEA MAP scores are recognized as zero or the baseline for the determination of student growth.

Mixed ANOVA – RIT Score

Equal variance was identified between group one (pre-Journeys curriculum) and group two (post-Journeys curriculum). There was no significance between group one (pre-Journeys curriculum) and group one (post-Journeys curriculum). Pre-assessment RIT score significance between group one and group two was .635. Post-assessment RIT scores significance between group one and group two was .121. Although the mixed ANOVA is not statistically significant

with a *p*-value not below .05, the data identifies no statistical significance between the pre-Journeys curriculum and the post-Journeys curriculum. The F-value increased from .251 for the pre-RIT score to 2.12 for the post-RIT score. No significant statistical difference between the two groups was identified. Table 23 shows the mixed ANOVA RIT score data.

Table 23

Mixed ANOVA – Pre- and Post-RIT – Descriptives – Oneway

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
Pre RIT Score	Pre-Curriculum	14	196.50	13.19	3.53	188.885	204.115	175	227
	Post-Curriculum	111	198.03	11.08	1.05	195.944	200.111	158	226
	Total	125	197.86	11.28	1.01	195.859	199.853	158	227
Post RIT Score	Pre-Curriculum	14	207.36	7.71	2.06	202.904	211.810	195	221
	Post-Curriculum	111	202.44	11.45	1.09	200.289	204.594	170	229
	Total	125	202.99	11.17	1.00	201.014	204.970	170	229

Mixed ANOVA – Percentile Rank

Equal variance was identified between group one (pre-Journeys curriculum) and group two (post-Journeys curriculum). There was no significance between group one (pre-Journeys curriculum) and group two (post-Journeys curriculum) when looking at the percentile rankings. Pre-assessment percentile ranking score significance between groups was .617. Post-assessment percentile ranking scores significance between groups was .148. The mixed ANOVA analysis was not statistically significant with a *p*-value above .05. The data identifies no statistical significance between the pre-Journeys curriculum and the post-Journeys curriculum. The F-value increased from .251 for the pre-RIT score to an F-value of 2.12 for the post-RIT score. No significant statistical difference between the two groups was identified. Table 24 shows the mixed ANOVA percentile rank score data.

Table 24

Mixed ANOVA – Pre- and Post-PR – Descriptives – Oneway

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
Pre PR Rank	Pre-Curriculum	14	48.79	23.91	6.39	34.980	62.591	10	96
	Post-Curriculum	111	51.90	21.67	2.06	47.825	55.977	1	96
	Total	125	51.55	21.85	1.95	47.683	55.421	1	96
Post PR Rank	Pre-Curriculum	14	55.50	17.30	4.62	45.513	65.487	27	84
	Post-Curriculum	111	46.43	22.45	2.13	42.210	50.655	2	93
	Total	125	47.45	22.06	1.97	43.543	51.353	2	93

Pre- (2009-2010) and Post- (2010-2018) Curriculum Implementation General Linear Model – Repeated Measures

A general linear model (GLM) repeated measures analysis was used to determine variance and the relationship between pre- and post-Journeys reading curriculum. Participants were in groups on a between-subjects independent variable (for example, an experimental condition and a control condition). They also had repeated measures data (for example, a pre-test and a post-test). Between-subject factors were identified as pre- and post-curricular, otherwise recognized as pre-Journeys reading and post-Journeys curricula. The horizontal axis was based upon the scoring scale, either RIT scores or percentile ranking scores. A general linear model repeated measures analysis provided the researcher to test such a question. The post-NWEA MAP assessment was identified as the dependent variable, with the pre-NWEA MAP assessment identified as the independent variable.

General Linear Model – Repeated Measures – RIT Score

Standard deviations among the post-assessment and pre-Journeys curriculum demonstrated a more narrow and less diverse range of scores. Of the 14 4th grade students assessed with the pre-Journeys curriculum, the standard deviation was 7.71 for the post-

assessment while the post-Journeys assessment, post-assessment RIT Score demonstrated a higher standard deviation at 11.45. Within the pre-Journeys, pre-assessment RIT score, the non-Journeys curriculum showed a higher standard deviation of 13.19 compared to the post-Journeys, pre-assessment RIT scores standard deviation of 11.08. RIT score Test of Sphericity was significant at less than .05 and supported students' effect, RIT scores increased from pre- to post-assessment, regardless of which curriculum was utilized. RIT score by curriculum Test of Sphericity was significant at less than .05 at .007 and supported there was considerable interaction. The curriculum showed a difference, or an impact on the student scores, dependent upon which curriculum was used. The Journeys curriculum influenced the student scores. Table 25 shows the general linear model (GLM) repeated measures data for the RIT scores of the pre- and post-Journeys curriculum. Figure 13 demonstrates the pre- and post-general linear model repeated measures RIT score comparison assessments between the Journeys reading and non-Journeys reading curriculum groups.

Table 25

GLM – Tests of Within-Subjects Effects – RIT

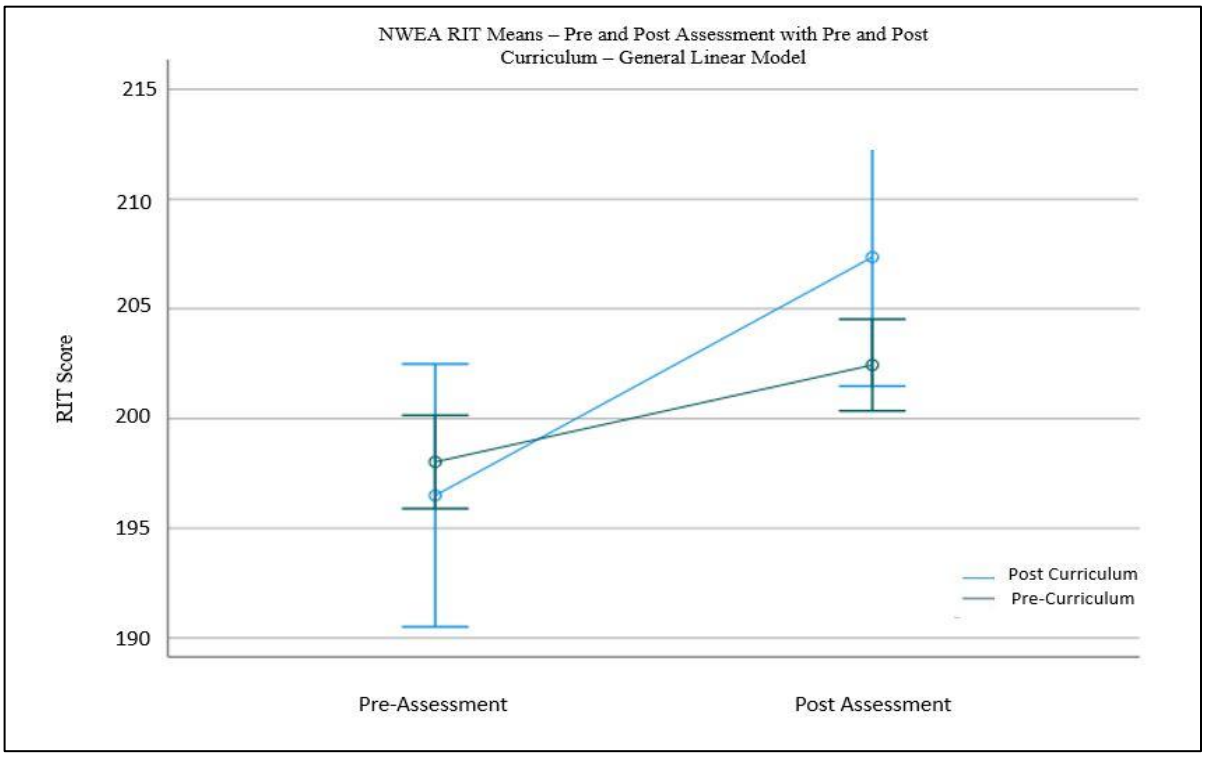
Source		Type III Sum of Squares	df	Mean Square	F	Sig.
RIT	Sphericity Assumed	1449.698	1	1449.698	41.894	<.001
RIT * Cur	Sphericity Assumed	258.018	1	258.018	7.456	0.007

General Linear Model – Repeated Measures – Percentile Ranking Score

Standard deviations among the post-assessment and pre-Journeys curriculum demonstrated a more narrow and less diverse range of scores, similar to the RIT score standard deviation but with much higher standard deviations. Of the 14 4th grade students assessed with

Figure 13

NWEA RIT Means – Pre- and Post-Assessment with Pre- and Post-Curriculum – GLM



the pre-Journeys curriculum, the standard deviation was 17.30 for the post-assessment. In contrast, the post-Journeys assessment and post-assessment percentile rank score demonstrated a higher standard deviation of 22.45. Within the pre-Journeys pre-assessment percentile rank score, the non-Journeys curriculum showed a higher standard deviation of 23.91 compared to the post- Journeys pre-assessment percentile rank score standard deviation of 21.67. This pattern of a pre-Journeys standard deviation declining while the Journey's curriculum standard deviation increased from pre- to post-assessment was identical in trend to the RIT standard deviation comparison. The percentile ranking score Test of Sphericity was not significant with a *p*-value greater than .05 and shows curriculum implementation impacts percentile ranking percentages. Percentile ranking score by curriculum Test of Sphericity was significant at less than .05 at .007

and supported there was considerable interaction. The curriculum showed a difference, or an impact on the student scores, dependent upon which curriculum was used. The Journeys curriculum negatively affected the 4th grade students' percentile rankings. Tables 26 and 27 show the general linear model (GLM) repeated measures data for the percentile rankings score of the pre- and post-Journeys curriculum. Figure 14 demonstrates the pre- and post-general linear model repeated measures percentile score comparison assessments between the Journeys reading and non-Journeys reading curriculum groups.

Table 26

GLM – Descriptive Statistics – Pre- and Post-Assessment – PR

	Pre or Post Cur	Mean	Std. Deviation	N
Pre-Assessment PR Rank	Pre-Curriculum	48.79	23.91	14
	Post-Curriculum	51.90	21.67	111
	Total	51.55	21.85	125
Post-Assessment PR Rank	Pre-Curriculum	55.50	17.30	14
	Post-Curriculum	46.43	22.45	111
	Total	47.45	22.06	125

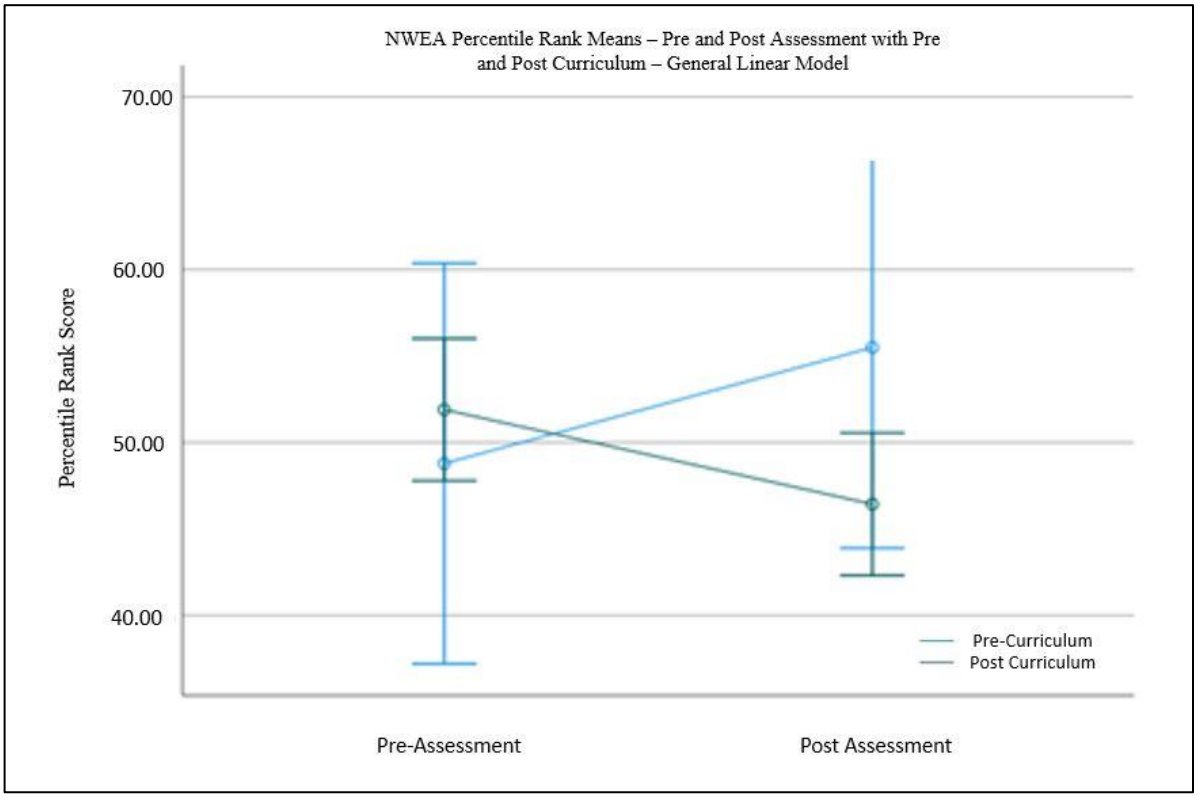
Table 27

GLM – Tests of Within-Subjects Effects – PR

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
PR	Sphericity Assumed	9.648	1	9.648	0.085	0.771
PR * Cur	Sphericity Assumed	922.576	1	922.576	8.169	0.005

Figure 14

NWEA Percentile Rank Means – Pre- and Post-Assessment with Pre- and Post-Curriculum – GLM



Appendix J provides supplementary tables regarding this study's results.

Summary

The Houghton Mifflin Harcourt Journeys reading curriculum series was found to be effective at creating student growth in the area of reading, as demonstrated through NWEA MAP 4th grade assessments. When compared to the school's previous reading curriculum, the analysis showed that the Houghton Mifflin Harcourt Journeys reading curriculum series was less effective at creating reading growth as demonstrated through NWEA MAP 4th grade assessments.

On average, the Journeys curriculum reading series increased student NWEA MAP RIT scores from the school's pre- to post-assessment. The *t*-test analysis and general linear model

(GLM) repeated measures analysis revealed the Sargent Central Public School 4th grade students NWEA MAP reading percentile ranking scores, from 2010-2018 regressed as compared to the school's prior reading curriculum and other 4th grade students spread across all 50 states with the *t*-test analysis and general linear model (GLM) repeated measures analysis identified as statistically significant.

The analysis identified considerable interaction based upon the reading curriculum as the reading curriculum affected student performance. The reading curriculum showed a difference, or an impact on student scores, dependent upon which curriculum was utilized. The Journeys reading curriculum influenced the student scores.

Organization of the Study

Chapter IV identified the results gathered from the study. Chapter V presents an interpretation of findings, implications, limitations, recommendations, future research, and summary.

CHAPTER V

DISCUSSION

Research Questions

This chapter discusses the findings of this study based on the two research questions:

1. How does the Houghton Mifflin Harcourt Journeys reading series affect pre- and post-NWEA MAP classroom assessment scores over an extended period?
2. How does the Houghton Mifflin Harcourt Journeys reading series compare to the previous reading curriculum regarding NWEA MAP classroom assessment scores?

Interpretation of Findings

The researcher first examined the NWEA RIT scores of the 111 4th grade students assessed from 2010-2018. The mean NWEA RIT scores increased from 198.03 to 202.44, or 4.41 RIT points as demonstrated within the paired sample *t*-tests analysis. This NWEA RIT average increase demonstrates the Journeys reading curriculum did consistently help 4th grade students academically grow in the area of reading throughout their 4th grade school year. Percentile rankings, or the gauge of how the Grade 4 students compared to the 2020 normative group in Grade 4 on a national scale in the United States, regarding the post-Journeys implementation of 4th grade students declined compared to their peers. The data demonstrates that the Sargent Central Public School 4th grade students performed less than average compared to the national norm group. For the Journeys curriculum series group (2010-2018), the Sargent Central Public School 4th grade students performed better than 51.9% of the other students in the

2020 normative group on the pre-assessment. By the post-assessment, these same Sargent Central Public School 4th grade students performed better than 46.43% of the other students in the 2020 normative group or a decline of 5.6 percentile ranking points. The research findings show that although student reading growth did occur, the Journeys curriculum did not create similar growth compared to the mean growth found within the 2020 NWEA normative data and the school's prior reading curriculum.

For the Journeys curriculum, the RIT standard deviation for pre-assessment was 11.08, and the post-assessment was 11.45. The paired samples *t*-test identified that the pre- to post-assessments for the 2010-2018 Journeys curriculum implementation was statistically significant with a *p*-value < .001. A positive correlation of .72 was identified for RIT scores. A positive correlation of .758 was identified for the percentile ranking analysis.

On average, Sargent Central Public School's pre-Journeys reading curriculum increased student NWEA RIT scores from 196.5 to 207.36 or an increase of 10.86 points from the pre-assessment to the post-assessment. The pre-Journeys reading curriculum mean percentile ranking increased from 48.79% to 55.50% or 6.71 percentile ranking points. Compared to the school's previous reading curriculum, the Journeys reading curriculum performed less satisfactorily as mean percentile rankings did not regress like the Journeys mean percentile rankings.

The Journeys pre- to post-assessment reading curriculum mean RIT score increased by 2.23% compared to a 5.53% increase for the pre-Journeys curriculum. The Journeys pre- to post-assessment reading curriculum mean percentile ranking score declined by 10.54% compared to a 13.75% increase for the pre-Journeys curriculum. Tables 28 and 29 show the RIT and PR pre- and post-assessment percentage changes based on curriculum implementation.

Table 28

NWEA MAP Pre- to Post-Assessment RIT Score Change

	RIT Score % Change
Before Journeys	+ 5.53%
After Journeys	+ 2.23%

Table 29

NWEA MAP Pre- to Post-Assessment Percentile Ranking Score Change

	PR Score % Change
Before Journeys	13.75%
After Journeys	-10.54%

The pre-Journeys reading curriculum demonstrated a more unbalanced standard deviation within the pre- and post-assessment RIT scores, as demonstrated with a 13.19 standard deviation for the pre-assessment and a 7.71 standard deviation for the post-assessment. The more widespread standard deviation was shown again within the percentile rankings for pre-Journeys assessment, with a p-value < .001. The pre-Journeys pre- and post-assessment RIT and percentile ranking scores were statistically significant. Table 30 shows the paired t-test summary.

The mixed ANOVA analysis demonstrated equal variance for the RIT score and percentile rankings among the two groups with group one identified as pre-Journeys curriculum implementation and group two identified as post-Journeys curriculum implementation. With p-values greater than .05, no statistical significance was found within the mixed ANOVA analysis when comparing groups or the pre-Journeys (2009-2010) and post-Journeys (2010-2018) curriculum groups.

Table 30

Paired t-Test Summary – RIT and PR

School Year	Pre RIT Score	Post RIT Score	N	Pre PR Rank	Post PR Rank
2009-2010	196.5	207.36	14	48.79	55.5
2010-2011	203	201.67	12	51.17	43.17
2011-2012	196.77	201.45	22	51.23	44.18
2012-2013	197.71	197	17	51.71	37.12
2013-2014	197.75	206.67	12	52.58	54.42
2014-2015	198.19	201.63	16	53.38	48.13
2015-2016	196.56	208.22	9	49.78	55.56
2016-2017	198.4	204.6	10	53.3	48.9
2017-2018	196.77	203.38	13	51.92	47.77
Before Journeys	196.5	207.36	14	48.79	55.5
After Journeys	198.03	202.44	111	51.9	46.43

The general linear model (GLM) repeated measures analysis demonstrated varied standard deviation among pre- and post-Journeys curriculum groups. The pattern of pre-Journeys standard deviation declining while the Journeys curriculum standard deviation increased from pre- to post-assessment matched the same trend as the RIT standard deviation. Test of Sphericity was statistically significant at less than .05 and supported the *t*-test analysis.

On average, regardless of curriculum used, students academically improved in reading with the repeated measures analysis demonstrating a considerable interaction occurring or influencing student outcomes based on the curriculum implemented. The pre-Journeys curriculum was found to impact student NWEA reading scores more positively than the Journeys curriculum.

The pre-Journeys curriculum increased mean student RIT scores from pre- to post-assessment by 147.99% more than the Journeys curriculum. Additionally, the pre-Journeys curriculum increased mean student percentile ranking scores from pre- to post-assessment by 230.46% more than the Journeys curriculum.

Implications

This study contains important implications for all schools as the literature review demonstrates that school curricula are continually being changed. Schools are susceptible to various local, state, national, or international standards, expectations, realignments, and policy changes. These changes can directly impact school curriculum decision-making on the local level. In light of current trends, state funding is declining for schools with declining enrollment in the state of North Dakota. Curriculum changes can often be costly, and sound financial decisions must be made to provide schools with sustainable, long-term school curricula that help create the framework for student academic growth and teacher lesson planning and guidance. Small schools, such as those with enrollments of 200 students or less, typically have only enough funding to sustain expenses for operating the building and paying salaries and benefits (Godfrey, 2019).

In North Dakota, the state has utilized a hold harmless line known as transition minimum within the state aid calculations for schools. This hold harmless line, established by the 2012-2013 baseline funding formula, was created to help schools in rural areas with declining school enrollment from losing state aid every year. The safety net in place for small schools with declining enrollment will eventually disappear (Baumgarten, 2019). The transition minimum is gradually being phased out from state aid formula calculations to create on-time payments. In the 2021-2022 school year, the amount above the state formula for transition minimum schools was

reduced by 15% and will continue to decline by 15% each year until the transition minimum amount is gone. North Dakota schools receive state aid based on per-pupil amounts. In January 2020, Sargent Central Public School yielded the 13th highest transition minimum in North Dakota public schools. Over 55% of the public schools in North Dakota are identified as transition minimum schools due to the new baseline established (Dick, 2019). Funding and adequate funding are top priorities for any organization, especially when change is needed or wanted, such as school curriculum changes. Schools need to be fully mindful of the dollars they spend on curriculum purchases, as some curriculum changes may not be necessary or beneficial when seeking student academic growth.

Limitations

The study does not control the unpredictability regarding classroom rigor, expectations, time management, experience, and teacher effectiveness. For practical purposes, the researcher avoided the complex variability of teacher effectiveness and pedagogy practices. No curriculum has validity except to the extent that it influences the engagement between teachers and students. This research study did not provide meaningful information for non-white students and did not segregate demographic data points. Limited enrollment and limited sample size (pre-Journeys curriculum) may misconstrue data.

Students moving or attending the district for a finite period may have impacted the assessment scores and may not accurately reflect the direct effect of the curriculum. Students were all general education students and were not divided into specific areas, such as special education or free and reduced. Based on post-assessment data, 47% of the students were female, and 53% were male.

The available assessment sample size was relatively small with only 250 assessments. Additionally, only a single school year of assessment data was available for the pre-Journeys curriculum comparison. The assessment sample size may have been resolved if additional NWEA MAP reports were available electronically for download.

School building construction and the transition into a new school building from 26-year-old temporary modular units for the 2010-2011 school year may have impacted pre- to post-assessment scores as new technology, programs, and resources became more abundant and readily available. The research study did not identify if school construction and the process of utilizing a new facility and new resources impacted assessment scores.

School attendance is highly related to academic achievement; time lost from exposure to teachers and teaching can only reduce the opportunity for learning (Christenson et al., 2012). For students to be successful, they have to actually be in school. According to Reeves (2020), "the best academic interventions in the world only work for students who come to school, so attendance is a critical part of the system." Students who are frequently absent often struggle with the following: (a) lower grade point averages and test scores; (b) increased problems with behavior and social-emotional aspects of school; (c) increased risk of dangerous patterns of negative behavior and exclusion; (d) fewer opportunities to build positive relationships with adults; (e) difficulty establishing and maintaining positive peer relationships; and (f) negatively affecting the class, school, and classrooms with high rates of absenteeism. In turn, these students may experience a lack of adequate academic growth for all students (Sprick & Sprick, 2019). This research study did not identify or explore attendance levels for the 4th grade students for each available school year.

Due to the limited number of groups (less than three), a post hoc test analysis was unavailable. If available, the post hoc test may have helped the researcher identify other possible differences, specifically between the Journeys reading curriculum group and the non-Journeys reading curriculum group.

Student behavior, motivation, and attitude toward school, the school staff, and school peers may significantly influence student academic achievement. Homework is the strongest predictor of exam scores. Graded homework is beneficial to learning, and attitudes and behaviors related to homework may indirectly benefit exam performance (Janssen & O'Brien, 2014). The research study did not identify any correlations with student behavior, motivations, homework, attitudes, and possible impact on NWEA MAP assessment scores.

Recommendations

Considering the research study's results, recommendations for all schools include the following:

1. It would be beneficial for state or regional education associations to compile curriculum data for sharing with school districts. Such opportunities would help establish better curriculum decision-making for schools, strengthen school standard alignments, and increase state assessment scores. As of this writing, the author is unaware of a centralized location that compiles the type of curriculum and which publishing company is used at schools. It would be of great interest for school administration to know if specific curricula are more beneficial to students within North Dakota. School administration, when deciding which curriculum to incorporate into their school, must reach out to area school administration and begin determining

curriculum implementation and its effectiveness. Often, these curriculum-based conversations lack direct data to support curriculum decision-making.

2. It would be beneficial for the state of North Dakota to provide information on which curricula align better with the North Dakota State Standards as the standards serve as goals for teaching and learning (North Dakota Department of Public Instruction, 2021). School administration would immensely enjoy what percent of a curriculum aligns with the goals of the North Dakota K-12 Education and Content Standards. This alignment could be created with a grading scale as well.
3. The North Dakota English Language Arts and Literacy Content Standards for Grades K-12 were updated in 2017. Like many schools, the Journeys reading curriculum was purchased many years before the most recent update for state standards. As the instructional leaders within each school building, school administration should continually review their school's current curriculum alignments to the North Dakota State Standards. This alignment should be of great focus and attention after the state changes or revises its content standards. Although a rigorous process, this alignment evaluation could help eliminate any curriculum gaps and promote better academic growth. Regional education associations could offset the stress and provide direction for schools to continually realign to the state's instructional goals.
4. Rural North Dakota public schools with declining state aid and diminishing revenue should continually analyze the highest need and greatest educational impact for their annual budget allocations. School administration falling in line with continuously repeated curriculum changes may not be the most efficient approach to educational dollars spent when seeking academic progress for their students.

Future Research

Although the Journeys curriculum created student growth in reading as demonstrated on the NWEA MAP assessments over a typical school year, the mean percentile rankings declined from the pre-assessment to post-assessment. Future research could be done to identify what impact the Journeys curriculum series has on an entire elementary school. The data demonstrated that students entering 4th grade score higher on the pre-assessment given during the first half of each school year. Before the Journeys reading curriculum was implemented, the mean score for the annual pre-assessment was an RIT score of 196.5. After the Journeys curriculum was implemented, the pre-assessment was a mean RIT score of 198.2. This demonstrates that students entering 4th grade were scoring slightly higher as compared to the prior curriculum used.

School curriculum does change, and most schools have a continual cycle for updates. Sargent Central Public School will be reviewing other reading curricula in the spring of 2022. If a new reading curriculum replaces the current Journeys reading curriculum, future research could be used to identify the impact of changing to the new curriculum. This could be done by studying the curriculum scores as demonstrated within this study.

Summary

This research study examined the effectiveness of Houghton Mifflin Harcourt's Journeys reading series on NWEA MAP assessments. The results suggest that Sargent Central Public School's prior reading curriculum used in the 4th grade provided increased student growth as demonstrated on the RIT scores and percentile rankings from pre- to post-assessments compared to the school's current Journeys curriculum with statistical significance consistently identified throughout the research study. Results also show that the Houghton Mifflin Harcourt's Journey

reading series effectively created consistent student growth from pre- to post-assessments. Yet, the student growth in a single school year appears to be less reading growth than other 4th grade students in the United States.

This study may be used as a starting point for literature reviews relating to reading curriculum changes.

Appendix A
NDCC 15.1-09-34 – Contracts by School Boards – Bids – Penalty

15.1-09.34. Contracts by school boards - Bids - Penalty.

1. Except as provided in this section, the board of a school district may not enter a contract involving the expenditure of an aggregate amount greater than fifty thousand dollars unless the school board has given ten days' notice by publication in the official newspaper of the district, received sealed bids, and accepted the bid of the lowest responsible bidder. This section does not apply to contracts for:
    a. The personal services of district employees.
    b. Textbooks and reference books.
    c. Articles not sold on the open market.
    d. Patented, copyrighted, or exclusively sold devices or features required to match articles already in use.
    e. Patented, copyrighted, or exclusively sold articles so distinctive that only one brand can be purchased.
    f. Building construction projects under chapter 48-01.2.
    g. School transportation services purchased under section 15.1-30-11.
    h. Vehicle fuel purchased under section 15.1-09-34.1.
    i. Heating fuel purchased under section 15.1-09-34.1.
    j. The purchase of a used motor vehicle, including a school bus, motorbus, or van, intended primarily for the transportation of students.
    k. Cooperative purchases with the office of management and budget under chapter 54-44.4. l.
    l. The purchase of products from prison industries under chapter 12-48.

m. The purchase of products from work activity centers under chapter 25-16.2.

n. Cooperative purchases made pursuant to a joint-powers agreement under chapter 54-40.3.

2. For purposes of this section, a "used motor vehicle" means a motor vehicle that has been previously owned or leased and which has an odometer reading in excess of eighteen thousand miles [28967 kilometers].

3. A board member who participates in a violation of this section is guilty of a class B misdemeanor.

Appendix B
NDSBA Policy Template – Curriculum Design and Evaluation

Descriptor Code GAAA - Curriculum Design and Evaluation
Development

The Board shall appoint a curriculum committee to assess curricular needs, review curricular inclusions, and make curricular recommendations on expansion and improvement. The committee shall be comprised of [a board member,] [the Superintendent,] [principals,] [the curriculum director,] [and parents] as appointed annually by the Board [President].

The curriculum shall include all components/subjects mandated by law and shall provide for the needs of all students, including both vocational and college-bound students. The curriculum/curricular programs shall at least contain the following components:

1. Content standards, which shall, at a minimum, be based upon state standards.
2. Performance objectives, which shall, at a minimum, be based upon state standards. The objectives should highlight core skills and knowledge that the majority of students are expected to acquire. They must provide clear direction to instructors and be concrete enough to allow documentation of student growth.
3. [World class standards]

Curriculum proposals shall demonstrate consistency with the district's mission and education goals, contain a justification for the proposed program, describe conditions and resources necessary to meet performance standards and programming needs, and shall contain an implementation procedure and timeline. [Furthermore, because the Board believes in curriculum integration, curriculum proposals should contain an explanation of the manner and degree to which this philosophy is incorporated in the proposed program.]

Experimental Programs & Projects

[In addition to the appointment of the curriculum committee, in order to foster curriculum development, the Board shall allocate a portion of the operating budget to be used as creative and innovative project funds.] Under this program, teaching and administrative staff may propose experimental programs and projects to the curriculum committee. The committee shall review such proposals and make recommendations to the Board based on feasibility and suitability.

Evaluation

Annually, by a deadline established by the Board, the curriculum committee shall complete an evaluation of the current curriculum and submit recommendations to the Board for action. Evaluation will be performed in order to determine the need for modification to or elimination of current curricular programs and offerings and the need for new curricular offerings and programs.

The curriculum committee may use at least the following indicators during this evaluation process:

1. Testing programs such as national standardized general achievement tests, nationally standardized tests in specific subject areas, and tests administered by other agencies;
2. Study of school achievement records;
3. Study of students' dropout records;
4. Utilization of out-of-system services; participation in regional research studies; contracted evaluation services;
5. Teacher and parent evaluation of student achievement and curricular needs;
6. Recommendations by teachers and/or administrators;
7. Evaluation by other agencies.

All board action on curriculum matters will be taken in accordance with the district's policy on curriculum adoption.

The District has adopted a separate procedure related to complaints about instructional material and resources. This policy shall not supersede or govern that procedure.

Complementing NDSBA Templates (may contain items not adopted by the Board)

- BBBB, School Board Committees
- GAAB, Curriculum Adoption
- GAAC, Review & Complaints about Instructional & Resource Material
- GAAC-BR, Procedure for Reviewing Complaints about Instructional/ Resource Material

End of [Name of District] Policy GAAA .....Adopted: [06/16]

Appendix C
NDSBA Policy Template – Curriculum Adoption

Descriptor Code GAAB – Curriculum Adoption

Annually, after reviewing the recommendations of the curriculum committee, budgetary data, other pertinent information, and ensuring the curriculum meets all requirements under district policy and law, the Board shall vote on the curriculum for the upcoming school year. The Superintendent shall assist in this process to ensure the curriculum is comprehensive and meets all applicable legal requirements.

During the course of the school year, the curriculum committee may suggest improvements and changes to the curriculum, and such changes may be implemented administratively by the Superintendent and his/her designee(s) as the Superintendent deems necessary and educationally sound. The Superintendent shall report to the Board prior to implementing such changes.

End of [Name of District] Policy GAAB.....Adopted: [06/16]

Appendix D
NDSBA Policy Template – Selection & Adoption of Instructional Materials

Descriptor Code GAAD – Selection & Adoption of Instructional Materials

The [Name of District] School Board is legally responsible for all matters relating to the operation of its public schools. This includes the selection and adoption of textbooks, supplementary, and other educational materials used in the school system.

The Board delegates responsibility for the selection of educational materials to the professionally trained personnel of the school system. The Superintendent shall bring all instructional material recommendations to the Board for final approval.

Instructional materials include all print and non-print materials used for the education of the student in the teaching-learning process, including library material.

Selection Objectives

The primary objective for the selection of instructional materials is to implement and enrich the curriculum and further the achievement of the district's instructional goals. It is the district's desire to provide a wide range of materials on appropriate levels of difficulty, with diversity of appeal, and the presentation of different points of view.

The District subscribes to the philosophy stated in the School Library Bill of Rights. (See GAAC-E2). When reviewing and selecting educational materials, the objectives will be to:

1. Select materials that will provide improvements in content, organization, and teaching methods and be aligned to the state standards and benchmarks.
2. Ensure accurate and up-to-date content and provide for the needs of a wide range of learners.
3. Provide for sequential growth and continuity from level to level.

4. Provide a fair representation of the many religious, ethnic, and cultural groups and their contributions to our country and world. There will be no discrimination or bias or prejudice on the basis of sex, race, religion, marital status, age, disability, national origin, color, or other class protected by law.
5. Present a balance of opposing sides of controversial issues so that young citizens may develop, under guidance, the practice of critical thinking.

Consideration will be given to readability and levels of difficulty, appropriateness of content, skills or prior learning required of students, skills or inservice required of teachers, provisions for ascertaining mastery of content by students, and aesthetic quality of materials.

Gift materials are to be judged by the same selection standards and are accepted or rejected by these standards.

Selection Process

School personnel may, at least, consult the following sources as part of the instructional material selection process:

1. Use of library selection aids (e.g., *Book List* and the *School Library Journal)*
2. Exchange of materials with other schools
3. Visits to book exhibits and displays
4. Text and courses of study within the District
5. Teachers
6. Students
7. Educational organizations

All selections must be consistent with the selection objectives listed in this policy.

Complaints

Any citizen who objects to the final selection made by the Board or who objects to materials already in use should follow the procedures outlined in the board's policy on Review of Instructional Materials (GAAC).

Complementing NDSBA Templates (may contain items not adopted by the Board)

- GAAC, Review of Instructional Materials
- GAAC-BR1, Procedure for Reviewing Complaints about Instructional/ Resource Material
- GAAC-BR2, Access to Resources & Services in School Library Media Program
- GAAC-E1, Request for Reconsideration of Instructional Resources
- GAAC-E2, School Library Bill of Rights

End of [Name of District] Policy GAAD .....Adopted: [12/14]

Appendix E

NDSBA Policy Template – Review and Complaints of Instructional and Resource Material

Descriptor Code GAAC – Review and Complaints of Instructional and Resource Material

In order to consider the opinions of those persons in schools and the community who are not directly involved with the instructional and resource material selection process, and to avoid the possibility of a biased or prejudicial attitude influencing selection, a board-appointed curriculum review committee shall deal with formal complaints about and/or requests for reconsideration of library and instructional materials.

This committee shall be responsible for reviewing all selection standards and procedures and shall work with all departments in clarifying selection criteria.

All citizen requests for reconsideration of and complaints about instructional and resource material will be processed through the Curriculum Review Committee.

A procedure for processing and responding to criticism of approved material shall be established and followed. This procedure shall include the use of a formal signed "Request for Reconsideration of Instructional Resources" form.

This District subscribes to the philosophy stated in the School Library Bill of Rights.

End of [Name of District] Policy GAAD .....Adopted: [06/16]

Appendix F
School Bond Election – Resolution Canvassing Returns on Question Submitted at Special Election

RESOLUTION CANVASSING RETURNS ON QUESTION SUBMITTED AT SPECIAL ELECTION

BE IT RESOLVED by the School Board of Sargent Central Public School District No. 6 of Sargent County, North Dakota, that it is hereby found, determined, and declared that the special election held in and for this School District on April 14, 2009, was in all respects duly and legally called and held and the returns thereof and the ballots cast thereat have been duly canvassed, and that the votes cast at said election for and against the question submitted to the voters were as follows:

QUESTION #1

Polling Place	Votes YES	Votes NO	Spoiled or Blank Ballots
Sargent Central School Library, Forman, ND	365	134	0
Rutland Bank Building, Rutland, ND	94	91	0
Cogswell Community Center, Cogswell, ND	53	44	1
TOTAL:	512	269	1

and said proposition, having received more than the requisite majority, is hereby declared to have passed.

Dated April 15, 2009.

Robert Banderet
President

ATTEST:

Sandra K. Moore
Business Manager

The motion for the adoption of the foregoing resolution was duly made by Member Enderson, seconded by Member Askerooth, and upon vote being taken thereon, the following voted in favor: Banderet, Hanson, Askerooth, Brummond, Mathews, Enderson; the following voted against the same: None; and the following were absent: Pherson; whereupon said resolution was declared duly passed and adopted and was signed by the President and attested by the Business Manager.

Appendix G
NDCC 15.1-02-08 – Accounting and Reporting System – Uniformity

15.1-02-08. Accounting and Reporting System – Uniformity

The superintendent of public instruction shall implement a uniform system for the accounting, budgeting, and reporting of data for all school districts in the state and for all regional education associations governed by chapter 15.1-09.1. The superintendent of public instruction shall designate the software standards to be used by the school districts and by the regional education associations in their accounting, budgeting, and reporting functions.

Appendix H
NDCC 15.1-02-09 – School District Finance Facts Report – Contents

15.1-02-09. School District Finance Facts Report – Contents

The superintendent of public instruction shall submit an annual report on the financial condition of school districts to the governor, legislative council, and the secretary of state by the end of February. The secretary of state shall transmit the report to the state archivist for official and public use. The report must include:

1. The number of school districts in the state.
2. The financial condition of each school district, including its receipts and expenditures.
3. The value of all property owned or controlled by each school district.
4. The cost of education in each school district.
5. The number of teachers employed by each school district and their salaries.
6. The number of students in average daily membership, in weighted average daily membership, and in average daily attendance, in each school district, the grades in which the students are enrolled, and, when applicable, the courses in which the students are enrolled.
7. Information regarding the state's approved nonpublic schools.
8. Other statistical data on public education in the state.

Appendix I
NDCC 15.1-02-010 – School District Finance Facts Report – Distribution

15.1-02-08. School District Finance Facts Report – Distribution

The superintendent of public instruction shall make the annual school district finance facts report available to each member of the legislative assembly upon request. The superintendent shall provide eight copies of the report to the state library. The superintendent shall make the report available to the public on the superintendent of public instruction's website.

Appendix J
Supplementary Tables

Table 31

Standard Deviation Summary – RIT Score

School Years	Pre Std Dev	Post Std. Dev
2009-2010	13.19	7.71
2010-2011	9.22	6.83
2011-2012	12.39	10.71
2012-2013	10.59	14.65
2013-2014	4.79	7.06
2014-2015	9.28	7.33
2015-2016	13.74	15.01
2016-2017	9.55	12.68
2017-2018	16.57	13.95
Before Journeys (mean)	13.19	7.71
After Journeys (mean)	11.08	11.45

Table 32

Standard Deviation Summary – PR Score

School Year	Pre Std Dev	Post Std. Dev
2009-2010	23.91	17.30
2010-2011	20.27	15.51
2011-2012	24.54	21.28
2012-2013	22.21	25.77
2013-2014	10.99	16.50
2014-2015	20.03	16.91
2015-2016	28.46	30.24
2016-2017	20.63	25.53
2017-2018	27.12	27.10
Before Journeys (mean)	23.91	17.30
After Journeys (mean)	21.67	22.45

Appendix K
IRB Approval Letter

June 22, 2021

Principal Investigator(s):	Daniel Warcken
Project Title:	NWEA Assessment Data Collection
IRB Project Number:	IRB-202106-130
Project Review Level:	Exempt 4
Date of IRB Approval:	6/22/2021
Expiration Date of This Approval:	6/21/2024

The application form and all included documentation for the above-referenced project have been reviewed and approved via the procedures of the University of North Dakota Institutional Review Board.

If you need to make changes to your research, you must submit a Protocol Change Request Form to the IRB for approval. No changes to approved research may take place without prior IRB approval.

This project has been approved for 3 years, as permitted by UND IRB policies for exempt research. You have approval for this project through the above-listed expiration date. When this research is completed, please submit a Termination Form to the IRB.

The forms to assist you in filing your project termination, adverse event/unanticipated problem, protocol change, etc. may be accessed on the IRB website: http://und.edu/research/resources/human-subjects/

Sincerely,

Michelle L. Bowles, M.P.A., CIP
Director of Research Assurance & Ethics

Appendix L
Request to Conduct Research Approval Letter

Request to Conduct Research

Date: 10-9-19	**Name:** Daniel Warcken	**Phone:** [redacted]
Fax or Email: Daniel.Warcken@k12.nd.us **Address:** [redacted]		**Research Advisor:** Dr. Sherryl Houdek 701-777-3577 Sherryl.houdek@und.edu **College or Dept.:** University of North Dakota Educational Leadership
Research Title: Houghton Mifflin Harcourt Journeys Curriculum Series Longitudinal Effects on Student Reading Assessment Scores in Grades 1-6 in a Small Rural North Dakota School		
Give a brief description of your research. Attach additional papers if necessary. Please attach sample copies of assessment instrument, tests, or communications to be used: Research is identifying if the Houghton Mifflin Harcourt Journey's curriculum series is effective at creating student growth in the area of reading. Assessment data utilized will be NWEA and STAR assessment data from 2008 to 2019 from Sargent Central Public School students for grades 1-6. Confidential records are not required, and no personal student identifiable information will be shared.		
Number of students needed for research: 0. Data collection consisting of test assessment scores only.	**Number of teachers needed for research:** 0	**Grade Level or Dept.:** Grades 1 – 6
What schools are you interested in conducting the research in? Sargent Central Public School – Elementary		
Will confidential records be required? (If yes, indicate type.) No.		**Length of time required to complete the research:** 2 month period during the 2020 spring semester.

To be completed by School District Official:

Approved ☒ **Not Approved** ☐	
Board President Signature: Glen Hill	**Date:** 10-9-19
Approved to conduct research in the following schools: Sargent Central Public School – Elementary	

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