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An Illuminative Evaluation of Two Models of Reading Intervention Used in Middle Schools

Tachier M. Rezac
University of Nebraska-Lincoln, tishrezac@gmail.com

AN ILLUMINATIVE EVALUATION OF TWO MODELS OF READING INTERVENTION USED IN MIDDLE SCHOOLS

by

Tachier (Tish) M. Rezac

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Tachier (Tish) M. Rezac, Ed.D.

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Advisor: Nicholas Husbye

Intervention research often investigates the curriculum or methods used to support learners, while less attention is given to the model of those interventions. The purpose of this study was to evaluate the efficacy of two models of reading intervention, and to better understand how they are serving middle school students. Working from a critical pragmatic lens, I employed illuminative evaluation methods to investigate three research questions: (a) What are the demographic profiles of students enrolled in reading intervention in grades seven and eight; (b) What are the differences in gains for students enrolled in the traditional intervention and reading lab intervention classes; and (c) How do students perceive the value of inclusion in reading intervention courses in grades seven and eight? I used descriptive statistics to study the demographic make-up of students enrolled in each model. I investigated archival summary data from MAP Reading Conditional Growth Index scores, employing independent-samples *t*-tests and analyses of variance to compare student growth from fall to winter results. Using archival summary data from an end-of-year student perception survey, I analyzed data to identify patterns and differences in student responses. The results indicate students in this district's reading intervention courses mirror those from other districts across the nation,

where larger proportions of students of color, males, and students participating in the free and reduced meal plans are enrolled in reading intervention. Statistically significant differences were found on MAP fall to winter growth scores, with students in the reading labs achieving significantly below expected growth. No statistically significant differences were found in student responses to the end-of-year survey, though important student perceptions were revealed. The information from this study can inform decision-makers as they select an intervention model to employ. This study illuminates some of the iatrogenic outcomes of our current system for middle school reading intervention, and calls into question how we might develop better ways of supporting our below-grade level readers in middle schools.

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Dedication

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Table of Contents

Acknowledgements iv

Dedication viii

Operationalized Definitions xix

Chapter 1—Middle School Reading Intervention 1

- Problem of Practice Statement 1
- Statement of Context 3
  - Personal Context 3
  - Study Context 4
- Theoretical Framework 9
- Research Aims and Objectives 13
  - Focus Questions 14
- Research Purpose 15
- Significance of the Study 16
  - Why Is Reading Intervention Important? 16
  - Changing the Trajectory of Low Reading Skills 17
- Limitations of the Study 18

Chapter 2—Review of Scholarly and Practical Knowledge 21

- Intersecting Equity and Literacy 23
- Biased Assessment Lead to False Inferences 24
- Subjective Teacher Judgements 28
- Biased Disciplinary Practices and Policies 29
- Exclusionary Discipline Policies by Race/Ethnicity 29
- Student Sense of Self 32

Weak Tier 1 Practices 34

Intervention as an Equitable Path Forward 36

Response to Intervention 36

Multi-tiered Systems of Support 36

Unique Needs of Middle School Reading Intervention Teachers 37

Foundational Literacy Knowledge: The Science of Reading 37

Ongoing Professional Learning 41

Formative Assessment Knowledge 44

Skills in Providing Feedback to Students 47

Brain Research and Reading 48

Adolescent Brain Development 49

Why Some Students Struggle to Read 50

Linguistic Physical Causes of Difficulty Learning to Read 50

Non-linguistic Physical Causes of Difficulty Learning to Read 51

Reading Intervention with Middle School Students 51

Best Practices 53

Recommendation #1: Build students' decoding skills so they can read complex multisyllabic words 53

Recommendation #2: Provide purposeful fluency-building activities to help students read effortlessly 53

Recommendation #3: Routinely use a set of comprehension-building practices to help students make sense of the text 54

Recommendation#4: Provide students with opportunities to practice making sense of stretch text (i.e., challenging text) that will expose them to complex ideas and information 54

Models 55

Chapter 3—Methodology 57
Research Design 58
Methodology: Evaluation 59
Method: Illuminative Evaluation 62
Presuppositions of Illuminative Evaluation 64
Research Questions 67
Focus Questions 67
Null Hypotheses 68
Research Setting and Participants 69
The District 69
The Middle Schools 69
The Participants 71
Data Sources and Collection 71
Measure One: Demographic Data 71
Measure Two: Test Score Data 71
Measure Three: Survey Data 72
Data Analysis 73
Illuminative Evaluation Step #1: Observe 73
Illuminative Evaluation Step #2: Inquire Further 74
Illuminative Evaluation Step #3: Explain 78
Discussion to Impose Quantitative Methods/Logic of Inquiry 78
Research Reliability, Validity, and Generalizability 80
Measure #1: Demographic Data 81
Measure #2: MAP Reading Conditional Growth Index Scores 82

Measure #3: Student Perception Surveys 83
Researcher Positionality/Reflexivity Statement 85
Relationship to the Participants 86
Potential Biases 86
Chapter 4—Presentation of Results 89
Defining the Population: RQ #1 90
Population Disaggregated by Race/Ethnicity 93
Population Disaggregated by Free/Reduced Meal Program Participation 97
Summary of Findings for RQ #1 98
MAP Analysis: RQ #2 99
Reading Model and Race/Ethnicity 101
Reading Model and Gender 102
Reading Model and Free/Reduced Meal Program Participation 103
Summary of Findings for RQ #2 105
Survey Results: RQ #3 106
Survey Part 1: Likert-scale Prompts 107
Survey Part 1: Disaggregated by Reading Model 112
Survey Part 1: Disaggregated by Reading Model and Gender 113
Gender: Question 1: I believe I can be successful in my reading class 114
Gender: Question 2: I am confident I can improve my reading skills 116
Gender: Question 3: I think my reading class is helpful 116
Gender: Question 4: I enjoy my reading class 117

Gender: Question 5: My reading has improved since the beginning of the year 117

Gender: Question 6: I have to give up too much to be in my reading class 118

Survey Part 2: Class Choice Item 119

Survey Part 3: Open-ended Question 120

Summary of Findings for RQ #3 123

Chapter 4 Summary 126

Chapter 5—Summary, Implications, and Conclusions 128

Structure of Chapter 5 129

Discussion of Findings 130

RQ #1: Mine, Yours, and Ours; Breckinridge Statistics Mirror National Findings 130

RQ #2: Dosage and Casting a Wide Net 135

Dosage 136

Potency 136

Frequency 138

Duration 139

Dosage Summary 140

Beyond the Reading Lab: The Role of Intervention 140

RQ #3: Adding Definition: Students Report Generally Positive Perceptions 142

Additional Findings 145

World Language 145

Benefits of World Language Extended to Struggling Readers 146

"Use the Question to Answer the Question Does Not Help at All" 148

Explicit Instruction 148

Multi-tiered Systems of Support 150

Student Voice 152

Limitations 153

Limitation #1: Short Window 153

Limitation #2: Scope of Student Survey 154

Limitation #3: Limited Study Population 154

Limitation #4: Influence of Attendance 154

Limitation #5: Program Fidelity 155

Limitation #6: Disaggregating Data for Students Working in Special Education and English Learner Programs 155

Implications as a Call to Action 157

District Decision-Makers 157

Building Leaders 161

Teachers 165

Disrupting Disparate Discipline Practices—Before/During/After Intervention 167

Caregivers 168

Teacher Preparation Programs 168

Questioning Assumptions: Education Researchers 170

Summary Remarks 171

Opportunities 172

A Better Way Forward 174

Closing Remarks 177

References 179

Appendices 208

List of Tables

Table 1	Sample Student Schedule; Half-Class Period Model	xxi
Table 2	Sample Student Schedule; Alternate Day Model	xxi
Table 3	Sample Student Schedule; Traditional Model	xxiv
Table 4	Ethnic Distribution of Breckinridge Public School Students; October 2022	70
Table 5	Distribution of Total Student Enrollment by Various Identifiers; October, 2022	70
Table 6	Distribution of Middle School Students (Grades 6-8) by Various Identifiers (Oct 2022)	72
Table 7	Race/Ethnicity and Model of Intervention	75
Table 8	Gender and Model of Intervention	75
Table 9	Free/Reduced Meal Program Participation and Model of Intervention	76
Table 10	Race/Ethnicity and Model of Intervention	77
Table 11	Free/Reduced Meal Participation and Model of Intervention	77
Table 12	Gender and Model of Intervention	77
Table 13	Enrollment Disaggregated by Model and Title-1 Designation	91
Table 14	Intervention Enrollment Disaggregated by Specific Race/Ethnicity Compared to Total Intervention Enrollment	94
Table 15	Intervention Enrollment Disaggregated by Race/Ethnicity Compared to Total Intervention Enrollment	95
Table 16	Reading Intervention Enrollment Disaggregated by Model and Race/Ethnicity	95
Table 17	Enrollment Disaggregated by Gender and Intervention Model	96
Table 18	Participation in the Free/Reduced Meal Program Disaggregated by Intervention Model	98

Table 19 Demographic Summary of Students Enrolled in Reading Intervention 99

Table 20 Means and Standard Deviations for Membership Variables on MAP Reading Conditional Growth Index Fall-Winter Scores 101

Table 21 Participation in End-of-Year Student Perception Survey Disaggregated by Intervention Model 106

Table 22 Survey Inter-Item Correlations Matrix 108

Table 23 Survey Inter-Item Correlation Matrix After Deletion of Two Items 109

Table 24 Survey Item Statistics for Likert-Scale Responses 110

Table 25 Survey Part 1 Item Response Summary 111

Table 26 Survey Total Results Disaggregated by Reading Model 113

Table 27 Mean and Standard Deviation Statistics for Survey Items Disaggregated by Gender 115

Table 28 Course Request if Not Enrolled in Reading Intervention 120

Table 29 Participation in End-of-Year Perception Survey by Reading Model 121

Table 30 Summary Responses to Open-Ended Prompt 122

Table 31 Mean, Median, and Conditional Growth by Reading Model with Recalculations 124

Table 32 MAP Results for Students Below 40th Percentile with Recalculations 125

List of Figures

Figure 1	Multi-Tiered Systems of Support	xx
Figure 2	Scarborough's Reading Rope	xxiii
Figure 3	The Simple View of Reading	xxiii
Figure 4	Theoretical Framework	14
Figure 5	Student Perceptions of Intelligence	33
Figure 6	Multi-tiered Systems of Support	37
Figure 7	The Simple View of Reading	38
Figure 8	Scarborough's Reading Rope	39
Figure 9	Areas of the Brain Associated with Reading	49
Figure 10	Conceptual Framework	67
Figure 11	Mean Conditional Growth Index Scores by Model	142
Figure 12	The Many Strands of Student Support	158

List of Appendices

Appendix A	End-of-Year Student Survey	208
Appendix B	Graphic Representation of Student Responses for Survey Part 1: Likert-Scale	213
Appendix C	Illustrative Examples of Open-Ended Responses on End-of-Year Survey	217

Operationalized Definitions

Several terms used in this dissertation require further definition in order to maximize understanding. These are provided here, listed in alphabetical order.

Behaviorist Paradigm: **A theory of human behavior that posits behaviors can be shaped, usually through some form of conditioning.**

Gradual Release Model: A behaviorist, direct instruction model of teaching that follows an I-Do, We-Do, You-Do sequence, scaffolding the support so students can ultimately do tasks independently.

Intervention: Reading intervention is intensive or targeted instruction in reading to accelerate those who are reading below grade level.

Knowing-Doing Gap: A phrase used to describe a disconnect between research and practice.

LETRS: A program developed by researchers Dr. Lousia Moats and Dr. Carolyn Tolman. LETRS stands for Language Essentials for Teachers of Reading and Spelling.

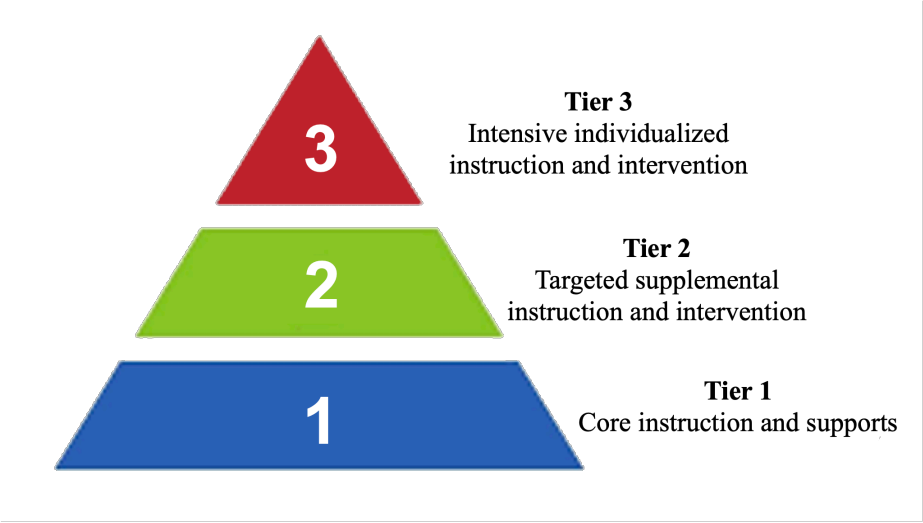
MAP Assessment: This assessment from Northwest Evaluation Association, a not-for-profit organization that develops assessments for grades PK-12.

Middle School: While middle school in Breckinridge Public Schools includes students in grades six, seven, and eight, for my purposes I am including students in grades seven and eight, as this is the parameter for reading intervention in middle schools.

Multi-Tiered Systems of Support: A system of support that includes three tiers.

Figure 1

Multi-tiered Systems of Support



Based on this model, reading intervention that is targeted to a specific group of students would be considered a Tier 2 Intervention: Targeted, Group Intervention. In the reading labs, where all students experience some form of intervention, the intervention would be considered Tier 1: Universal Instruction (Center on PBiS, 2023).

Phonemic Awareness: The ability to hear and manipulate sounds in words. This is a strong predictor of reading success and includes additions, deletions, substitutions, and manipulation of sounds.

Reading Intervention Classes: A semester or year(s)-long class that attempts to improve students' reading as measured by MAP Reading assessments. Middle school students deemed to be reading below grade level are typically placed in intervention until they demonstrate grade level proficiency.

Reading Lab Model: With the reading lab model, students are served in a reading intervention class either every day for a ½ period (approx. 25 minutes) or for a full period

every other day. The instruction is typically led by a reading teacher, an English teacher, or a special education teacher, but could be any teacher as assigned by the principal.

Table 1

Sample Student Schedule; Half-Class Period Model

Period	Course Repeated Every Day
1	English
2	Social Studies
3	Math
4	Science
5	Alternate P.E. Day1/Health Day 2
6	Split class: Reading Intervention first part, other class last part
7	Academic Connection Course (world language, music, art, business, etc.)

Table 2

Sample Student Schedule; Alternate Day Model

Period	Course Repeated Every Day
1	English
2	Social Studies
3	Math
4	Science
5	Alternate P.E. Day1/Health Day 2
6	Alternate Reading Intervention Day 1 and other class Day 2* this could include Math Intervention on Day 2 or (less likely) an Academic Connection Course
7	Academic Connection Course (world language, music, art, business, etc.)

Reading Skill: "automatic actions that result in decoding and comprehension with speed, efficiency, and fluency and usually occur without awareness of the components or control involved" (Afflerbach et al., 2008, p. 368).

Reading Strategy: "deliberate, goal-directed attempts to control and modify the reader's efforts to decode text understand words, and construct meanings of text" (Afflerbach et al., 2008, p. 368)

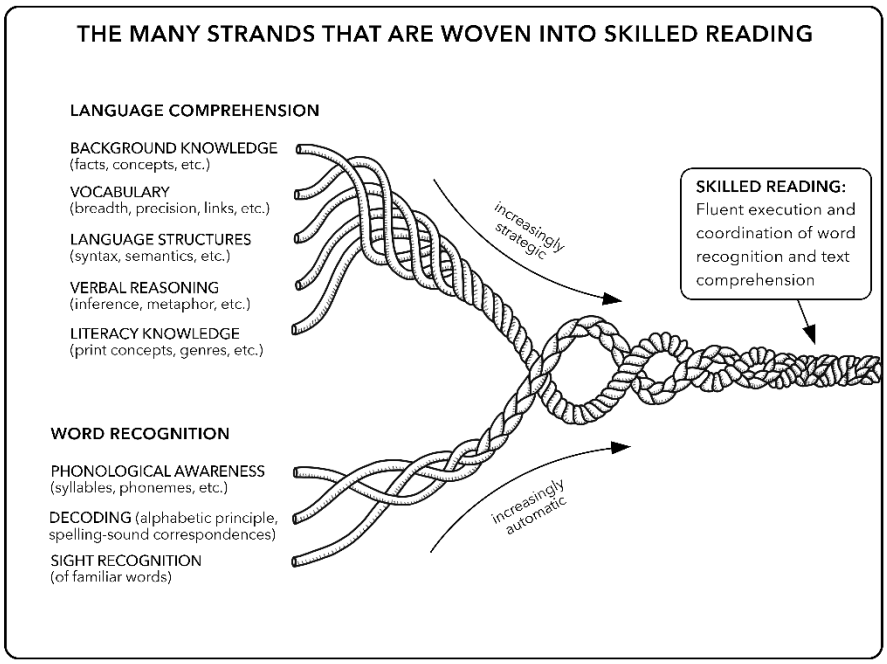
RIT scores (MAP): a scaled score students receive after completing the MAP, this score stands for Rasch UnIT, a measurement score intended to simplify scores for interpretation (NWEA, 2023).

Scarborough's Reading Rope: Proposed by Hollis Scarborough in 2001, this model of reading further unpacks the Simple View of Reading, helping teachers understand the complex and interrelated nature of discrete skills involved in decoding and language comprehension (as cited in Dieter & Washington, 2022) (see Figure 2).

Scripted Curriculum: In Breckinridge Public Schools, this refers to the REWARDS and REWARDS +Social Studies curricula as well as the additional wrap-around materials and activities teachers can employ to address the literacy development of middle school students. I was tasked with developing these materials when district and building leaders recognized many reading intervention teachers lacked the formal training to adequately teach reading intervention. The lessons are carefully planned and sequenced, with a gradual release of responsibility embedded within the lessons.

Figure 2

Scarborough's Reading Rope



Simple View of Reading: A model of reading first proposed by Gough and Tunmer (1986) which posits that reading is the product of a person's ability to decode words (word recognition) and language comprehension (understand language) (see Figure 3).

Figure 3

Sample View of Reading

Social Constructionism: a theory of learning that posits knowledge is socially constructed through interactions with people, diverse cultures, and the society.

Title-1 Buildings: This federal designation provides additional funding support to schools that qualify. In Breckinridge Public Schools, middle schools serving 60% or more of the student body participating in the free and reduced meal plan are designated Title-1 buildings. This designation is reviewed annually. Currently five of the twelve middle schools are designated Title-1 buildings.

Traditional Model: In the traditional model of intervention, students are rostered to a reading intervention class for a full class period every day. This would qualify as Tier 2: Targeted Group Intervention. The instruction may be led by a reading teacher or a different content area teacher who teaches 1-2 sections of reading.

Table 3

Sample Student Schedule; Traditional Model

Period	Course Repeated Every Day
1	English
2	Social Studies
3	Math
4	Science
5	P.E. Day1/Health Day 2
6	Reading Intervention
7	Academic Connection Course (world language, music, art, business, etc.)

"The advice that new researchers should ask themselves: What are the accounts both worth relating and that I am in a position to tell?"

(Hamann & Vandeyar, 2018, p. 44).

Chapter 1

Middle School Reading Intervention

Problem of Practice Statement

Reading below grade level puts students at great risk and disadvantage as they move to high school and beyond (Beers, 2023; Hall & Burns, 2018; Kamil et al., 2008; Scammacca et al., 2007; Vaughn et al., 2022). Although the 2022 average score of Nebraska eighth graders matched the national average of 259, this score represents a decline in reading proficiency among Nebraska eighth graders since 2019, and a drastic decline since 2002 (U.S. Department of Education, 2022). Recent National Assessment of Educational Progress (NAEP) reading scores indicate that while as few as 29% of Nebraska eighth graders read at proficient or advanced levels, the numbers are even more dire when we disaggregate them and see that Black and Hispanic students earned scores 22-27 points lower than White students (U.S. Department of Education, 2022). Additionally, male students and students participating in the free and reduced meals program scored 11-20 points lower than their counterparts (U.S. Department of Education, 2022). To increase our students' reading proficiencies, Breckinridge Public School[1] district requires reading intervention for students reading

[1] Breckinridge Public School district is a pseudonym.

below grade-level benchmarks in grades seven and eight (Board Policy 6210). However, these interventions are not currently implemented with the same rigor, time, or intensity across the district. To address the low reading scores of our students, we must first understand how the different intervention models are working and for whom.

Research in reading and reading intervention continues to examine how students learn to read and how to support those students for whom learning to read is difficult. Since the inception of Response to Intervention in 2004, increasing attention has been devoted to identifying strategies to support students in an intervention model (Baye et al., 2019; Daniel et al., 2021; Edmonds et al., 2009; Haines et al., 2018; Hall & Burns, 2018; Jimerson et al., 2016; Kilpatrick, 2015; Scammacca et al., 2007; Scammacca, Roberts, et al., 2015; Torgesen & Miller, 2009; Vaughn et al., 2012; Vaughn & Fletcher, 2012). However, less attention has been directed to intervention with adolescent students, and more so, to the models of intervention for middle school students (Baye et al., 2019; Edmonds et al., 2009; Haines et al., 2018; Hall & Burns, 2018; Lee & Spratley, 2010). Individual interventions are comprised of the curricular components. For instance, fluency, vocabulary development, and comprehension, while the models encompass the delivery of instruction. Models might define a period for interventions to occur (for instance, daily for six weeks) or they may define a "dose", for instance the number of minutes per session, and whether those sessions are held daily, bi-weekly, or weekly, as well as the number of minutes for each period and the size of the intervention group to teacher ratio. This research aims to illuminate the

value of different models of intervention used in one medium-sized school district in the Midwest.

This chapter provides an introduction to the study by first discussing reading intervention at the middle school level, including both my personal and the broader context of the study. In the section titled Theoretical Framework, I identify how Critical Pragmatism underpins this study, and how each additional decision is layered within a critical pragmatic philosophy. Next, I frame the research problem by identifying the research aims, objectives, and questions. In the final sections of this chapter, I explore the significance of this research and outline how this research might be extended with additional studies.

Statement of Context

Personal Context

The motivation for this study was born out of deep respect for the students and their teachers in middle school reading intervention classes. Throughout the three plus decades of my career, I have honed my skills as a reading interventionist. My work afforded me opportunities to work alongside struggling students, many deemed "at risk" by multiple measures. While I have delighted in the culmination of arduous journeys that led so many students to the magic of literacy, I am aware of the many students whose struggles I was unable to eliminate or adequately support. When I moved from teaching primary grades to middle school level, I witnessed the heavy burden carried on the shoulders of our non-readers. I felt the urgency to address these students' needs, while also recognizing the enormous risks students would experience

if they moved into high school reading below grade level. At the same time, convincing middle schoolers, many who were disfranchised by our school systems, that they could improve, was its own arduous journey.

As I now have the opportunity to develop curriculum and assessment for these students and work with their teachers through professional learning opportunities, I have both the honor and the responsibility to influence the way reading intervention is taught in my district. I feel responsible for the 1,200 students enrolled in reading intervention courses in our district's seventh and eighth grades each year. With our latest curriculum adoption and changes to our Board of Education policy in 2020, as well as changes to our state accountability processes, I am keenly aware of the need to identify how our reading intervention classes are serving our students, always with an eye to how to improve those interventions. The results of this study will allow me to better inform decision-makers at both the district and building levels about the effects of different models of reading intervention currently used in middle schools in my district. I envision this as a first step in our process of evaluation with an eye to how and where to make improvements for the students we serve.

Study Context

The fall of the 2020-2021 school year began with a new curriculum for middle school reading intervention courses in Breckinridge Schools, reflecting a paradigm shift in how we approach reading intervention in middle school that moved us away from a guided reading approach to a direct instruction model. Research indicates a direct instruction model is superior to other discovery-based approaches for reading

intervention (Archer & Hughes, 2011; Coyne et al., 2018; Dehaene, 2009; Hall & Burns, 2018; Kilpatrick, 2015; Kirschner et al., 2010; Marchand-Martella et al., 2013; Torgesen & Miller, 2009; Vaughn et al., 2012; Vaughn & Fletcher, 2012). Out of necessity we introduced a scripted curriculum to support teachers as they worked to address the prerequisite skills students need for learning to read. A scripted curriculum provides support to teachers, by explicitly mapping what the teacher will do and say as they lead students through the lesson. Scripted curricula often include support that includes what to do when a student is struggling, as well as how they might extend the learning. This scripted curriculum served dual purposes: supporting the needs of students in reading intervention while building the literacy development knowledge of teachers. I supported this move, as I believe students must develop the tools to lift the words from the pages before they can develop critical reading skills.

In framing my problem of practice, I recognize the influence of educators and philosophers before me. Like Horace Mann, often referred to as the Father of Education, I am a strong believer in the value of public education (Cremin, 2023). I believe, like Mann, that "citizens cannot maintain both ignorance and freedom" (Biography.com Editors, 2021, p. 4). This underlying belief that a true democratic society must be educated has been a core value of mine throughout my career. A foundation for this education is the ability to read, comprehend, and critically consider the beliefs of others as provided through writing.

This core value is also congruent with John Dewey. Dewey also believed schools serve to educate students to be critical thinkers and active members of their communities

(1916). Dewey (1916) wrote “society must have a type of education which gives individuals a personal interest in social relationships and control, and the habits of mind which secure social changes without introducing disorder” (p. 99). I believe, like Dewey, that educated people must work to enact social change. My work to enact social change comes in my drive to equip students with the tools for critical thinking and critical reading that will allow them to interact with and shape their communities. A foundational piece of this toolbox is the ability to critically create and consume texts. Reading, the foundation for other content learning (Dehaene, 2009; Kilpatrick, 2015; Marchand-Martella et al., 2013; Slavin et al., 2008; Vaughn et al., 2022) allows schools to realize the aim of education Dewey, as well as Mann, identified decades ago. Dewey (1916) wrote, “the aim of education is to enable individuals to continue their education . . . the object and reward of learning is continued capacity for growth” (p. 56). Reading is a major avenue to achieving this level of independence and growth. When students have reading skills, they have a much better equipped toolbox for learning beyond the formal classroom setting.

Reading allows students to pursue any future they can imagine, and I support making those futures visible and actionable. By ensuring students have the requisite reading proficiencies prior to entering high schools, we can better prepare them for the rigors of high school content courses, and more adequately allow students to interact with text and learn in content classes (Beers, 2023; Kilpatrick, 2015; Slavin et al., 2008; Vaughn et al., 2022). Ultimately, this allows students to graduate on time. Most

importantly, reading proficiency provides students with the tools they need to be informed and participating members of our democratic society.

I want students to become critical consumers and creators of text — to know how to interpret what they read and make connections between what they know or believe (or thought they knew) and what they are reading. I want students to understand the power of their voice, to confidently tell their story, and to share their knowledge with others. With the proliferation of online social media, our students are consuming and creating a great deal of content. They need support to understand how to create content responsibly, and how to interpret other people's content critically. To do this, students must first be able to lift the print off the page. The real work then begins, as students must critically consider the author, purpose, bias, message, etc. This is as true when they are consuming text as it is when they are creating content. A sense of urgency surrounds my work, as I am keenly aware that efficacious reading interventions are more difficult to implement as students move through the grades (Wanzek et al., 2011).

Reading intervention encompasses the instructional programs and approaches designed to either prevent or remediate reading difficulties (Pyle & Vaughn, 2012; Scammacca, Roberts, et al., 2015; Swanson et al., 2017; Tunmer, 2008). Prevention programs typically address students entering school with inadequate knowledge, skills, or experiences from which to draw while learning to read. Remedial programs, on the other hand, typically target older students making inadequate progress in learning to read (Edmonds et al., 2009; Jimerson et al., 2016; Tunmer, 2008; Vaughn et al., 2022; Vaughn & Fletcher, 2012). Researchers generally believe that the opportunity has passed to

prevent reading difficulties when older students are struggling with foundational reading skills, and teachers must then look for ways to remediate reading (Vaughn & Fletcher, 2012). In this research project, reading intervention refers to remedial reading programs aimed at improving the reading levels of adolescent students in middle school.

The mid-sized school district that is the subject of this inquiry uses the Multi-tiered Systems of Support as a framework and systematic process for supporting students with universal (Tier 1), targeted (Tier 2), and intensive (Tier 3) supports to meet individual student needs (District Website, 2022). Middle School reading intervention qualifies as Tier 2, targeted support. Multi-tiered Systems of Support can be traced to the Response to Intervention practices developed after The Individuals with Disabilities Education Improvement Act passed in 2004. The goals of Response to Intervention and Multi-tiered Systems of Support remain the same: to identify a screening protocol for early identification of students who need additional layers of support, to provide research-based interventions that will accelerate student learning, and to ensure all students have instruction of the highest quality (Jimerson et al., 2016).

Torgesen and Miller (2009) note "students who have extensive background knowledge of the topic they are reading about typically comprehend the material more efficiently than students who have less knowledge in that domain" (p. 8). Students in middle school reading intervention courses are missing other content area classes when they are placed in intervention. This can result in perpetuating the Matthew Effect, where strong readers continue to get stronger as they continue to build background knowledge and content specific vocabulary while learning in those diverse content areas, and reading

intervention students, the poorer readers, lack access to that same opportunity to build background knowledge and content specific vocabulary. It is imperative, then, that reading interventions be of such high quality that students are quickly able to grow their reading proficiency and exit the intervention program to enroll in other content-rich courses.

Reading is a foundational skill for most other content areas, and as such, reading is one of the critical skills taught in K-12 public education (Beers, 2023; Marchand-Martella et al., 2013; Vaughn et al., 2022).

Theoretical Framework

Employing a pragmatic philosophy, researchers seek to adopt the methodology that works best to answer the research questions (Creswell & Poth, 2018). Pragmatism as a worldview "arises out of actions, situations, and consequences rather than antecedent conditions" (Creswell & Creswell, 2018, p. 10). My research aims have emerged because of the action (some building administrators use a different model for reading intervention), situation (some students needing reading intervention are afforded less time than others, depending on the building model being used), and consequences (some students are placed in intervention even though they have demonstrated reading proficiency, and students needing reading intervention are afforded half as much time for that intervention in some buildings). As a researcher, I am most concerned with the application of my research findings, a foundational piece of pragmatism. Critical pragmatist researchers are concerned with the what and how of research in relation to their intended application (Creswell & Poth, 2018; Ulrich, 2006).

Philosophically, pragmatism makes several assumptions (Creswell & Poth, 2018; Kelly & Cordeiro, 2020; Morgan, 2014; Ulrich, 2006). These include:

1. Consequences hold the meaning for actions and beliefs (Creswell & Poth, 2018; Morgan, 2014; Ulrich, 2006).
2. Circumstances and settings in which actions take place are inextricably intertwined (Kelly & Cordeiro, 2020; Morgan, 2014).
3. Actions and the consequences to which they are linked are ever-changing (Kelly & Cordeiro, 2020; Morgan, 2014).
4. The worldviews that drive individual actions are based on mutually shared and socially constructed beliefs (Kelly & Cordeiro, 2020; Morgan, 2014).

Assumption number four is especially important. This assumption recognizes that different people will develop personal and unique worldviews based on their experiences. Since it is impossible for two people to experience an action in exactly the same way, given their different past experiences which shape their interpretation of experiences, varying degrees of shared experiences and shared worldviews exist within different individuals.

Pragmatism, at its essence, is a flexible theory that allows for the complex integration of multiple theories (Creswell & Poth, 2018). Pragmatists believe knowledge is always in flux — negotiated, interpreted, and debated (Creswell & Poth, 2018; Feenberg, 2019; Hickman, 2019). With this in mind, pragmatists, rather than being theory free, are actually quite the opposite. Pragmatic theory not only allows for the "borrowing" of theory, but it also actually demands a flexible approach to theoretical

lenses, always with the question driving the action. A critical piece of pragmatism is the positioning of the action above all else (Creswell & Poth, 2018). It is the action that drives the combination of theory invoked in a study, as well as the methodology employed and the type of data collected and analyzed (Creswell & Poth, 2018; Kelly & Cordeiro, 2020; Midtgarden, 2012; Ulrich, 2006).

Critical theories include those approaches to social philosophy that seek to understand, illuminate, or challenge power structures (Bohman, 2021; Creswell & Poth, 2018; Crotty, 1998; Midtgarden, 2012; Zimmermann, 2018). Epistemologically, people who ascribe critical theories believe power structures imposed by the dominant group serve to hold marginalized populations down. Critical theories attempt to uncover these power structures that limit the access of individuals, especially those from historically marginalized groups, to positions of power. The main objective of critical theorists is to explore the interaction between dominant cultures and the oppressed, with an eye to empowering those oppressed. Some examples of critical theories include feminism and critical race theory (Bohman, 2021; Creswell & Poth, 2018). While some philosophers reject the idea of pragmatism as a critical theory, my thinking is more aligned with Kadlec (2006), Midtgarden (2012), and Ulrich (2007) who view pragmatism as a critical theory. Ulrich (2007) specifically points this out when writing, “the promise of pragmatist thinking consists in . . . the *quest for reflective research and practice* [author’s emphasis], whereby ‘reflective’ means ‘(self)-critical’, ‘emancipatory’, and ‘ethical’” (p. 1109).

Kadlec (2006) views Dewey's pragmatism as both "anti-foundational and critical" (p. 520). Kadlec builds a case for this by highlighting Dewey's aim in understanding the consequences of practices and policies. She notes that, while Dewey never referred to his philosophy as "critical", his ideas have direct relevance to critical theory. Kadlec asserts that critical theorists have inaccurately aligned pragmatism with positivism, a major rejection of critical theory. Kadlec states,

> Dewey's epistemological commitment to the transformatory potential of lived experience, to 'growth as the only moral end', and to the cultivation of reflective social intelligence might be viewed as the basis of a critical theory worthy of greater attention and appreciation. (2006, p. 522)

Dewey argued that people must critically reflect on their individual experiences in order to challenge deep-rooted beliefs and realize the democratic principles of liberty and equality (Kadlec, 2006; Midtgarden, 2012). Dewey also postulated that theories are the tools by which we come to know reality, a truly pragmatic application of such knowledge.

A foundation of pragmatism is the recognition that knowledge is constantly changing (Hickman, 2019; Kadlec, 2006; Philo-Notes, 2023). As people interact with one another in the social world and then reflect on those experiences, they come to know and understand an ever-changing landscape (Creswell & Poth, 2018; Crotty, 1998; Kelly & Cordeiro, 2020; Philo-Notes, 2023).

This research is situated within the critical pragmatic framework. As a critical pragmatist, I am most concerned with employing the methodology that will best allow me to address the research questions, and how those answers will inspire decision-makers in my district to act on the information obtained in the study. The ultimate driver of this

study is the action I hope to inspire. While I am not directly involved in decision-making, it is my obligation to inform decision-makers regarding the costs and benefits of the various models of reading intervention currently in use. To do this work, I must employ methodologies that align with the action I hope to inspire, that is, a thoughtful action based on research regarding the costs and benefits of a particular model of reading intervention over another model as identified by this study. This action, based on research, must ultimately allow for the greatest opportunity for all students, especially those from historically disadvantaged populations, to achieve proficient reading levels and move out of reading intervention courses as efficaciously as possible, while minimizing the costs, especially those to the student.

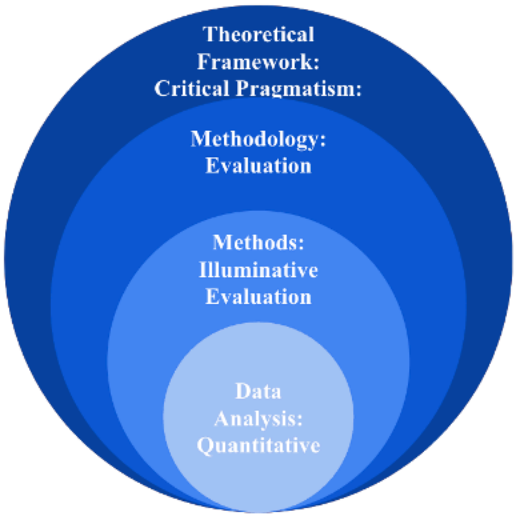
Figure 4 provides readers a visual representation of how the research is situated within the critical pragmatic framework, and how each additional decision drills down to the essence of the study while also remaining uniquely situated within the critical pragmatic framework.

Research Aims and Objectives

The aim of my research is to evaluate the reading lab model and the traditional model of reading intervention. As we seek to increase the efficacy of our intervention programs, we must also be aware of the consequences of the models we impose. By illuminating the impact of the current reading intervention models used in our middle schools, decision-makers will have a fuller picture of what is happening in regard to reading intervention. Moreover, these decision-makers will be informed, allowing for

Figure 4

Theoretical Framework



Adapted from Alderman, 2015

more thoughtful decision-making regarding which model of reading intervention to employ for their particular population of students.

Focus Questions

1. What are the demographic profiles of students enrolled in reading intervention in grades seven and eight?
    a. How do the demographic profiles of the subgroup of students enrolled in reading intervention in grades seven and eight compare to the larger population of students enrolled at Breckinridge Public Schools when looking at race/ethnicity, gender, and participation in the free/reduced meals program.

2. What are the differences in gains for students enrolled in the traditional reading intervention and reading lab reading intervention classes?
3. How do students perceive the value of inclusion in reading intervention courses in grades seven and eight?
    a. Are there differences in student perceptions of value between the traditional and reading lab models?

Research Purpose

This correlational study evaluates two different reading intervention models used in middle schools in one mid-sized school district in the Midwest. This research will give decision-makers additional information to use when selecting a particular model to enact in their buildings. I will also look to identify specific sub-groups of students who may benefit from a specific model of intervention. For instance, will the reading lab model, where students meet for either a ½ class period every day or a full class period every other day, appeal to and support the reading development of our English learners? Given access to other classes in the space of the "other half", will these students have access to opportunities to develop vocabulary and background knowledge in academic connection classes? Will those opportunities counteract the decreased support of reading intervention? Additionally, if teachers in the reading lab model are able to leverage engagement and participation in the ½ class periods, will this increased engagement override the decreased minutes, especially if students experience more time-on-task compared to the traditional model? Will the reading lab model appeal to students served in our Title-1 buildings, as this affords them the opportunity to enroll in academic

connection classes such as world language, computer science, or art, etc.? Given that a majority of students in Title-1 buildings are eligible for free and reduced meal programs, these students may lack the monetary resources to access extracurricular activities, making the academic classes offered within the school day that are often replaced by reading intervention courses a significant loss of opportunity.

Significance of the Study

Why Is Reading Intervention Important?

The impact of weak reading skills is widely known. According to the World Literacy Summit (2018) and The Organization for Economic Co-operation and Development (2016), low literacy skills result in lower levels of civic engagement, higher levels of welfare dependency, fewer opportunities for employment, and less access to health care and health information. The illiteracy rates among juvenile delinquents is believed to be as high as 85% (*World Literacy Summit*, 2018). Researchers note, "literacy skills (the ability to use, understand, and evaluate written material) are an indispensable prerequisite to individuals' labor market participation, social participation, and their ability to engage in lifelong learning more broadly" (Wicht et al., 2021). With the increasing complexity of our world, the proliferation of fake news, and the widespread use of social media, our students must be able to read critically and evaluate the messages that continue to influence their thinking. A century ago, John Dewey recognized our very democracy depends on this critical reading skill (1916), yet we continue to struggle to elevate the reading abilities of all students (U.S. Department of Education, 2022). In a study published in 2010, researchers noted colleges and businesses

spend over $16 billion (about $49 per person in the U.S.) annually to remediate reading and writing skills (Graham & Hebert, 2010). Increasing the reading proficiency of adolescent students, which increases on-time graduation rates, improves employment opportunities, and allows for an informed public, may also allow for financial savings beyond these other positive outcomes (Graham & Hebert, 2010).

Changing the Trajectory of Low Reading Skills

Providing a robust and efficacious reading intervention is challenging, as shown by the numerous research studies conducted each year on reading intervention (Flynn et al., 2012; Hall & Burns, 2018; Kudo et al., 2015; Scammacca et al., 2007). The 2022 NAEP data indicates our efforts to increase student reading skills are insufficient (U.S. Department of Education, 2022). Students from historically marginalized populations experience the greatest risk of delayed or impaired reading development. With the current emphasis on equity across the nation in K-12 public schools, it behooves us to take action to address the ways in which our educational practices have interrupted the reading growth of our students. Inequitable achievement outcomes are influenced by several factors, including unequitable use of exclusionary discipline practices, which I explain in Chapter 2.

As we have implemented a new curriculum in our district aligned with a paradigm shift in our middle school reading classes, we must now understand whether this shift is working. Are our students, many “at-risk” by multiple measures (socioeconomic status, minority status, English learner, etc.), making sufficient progress? We must ensure fidelity to learning. Our reading intervention students must have access to the best

curriculum and instruction available. Do our choices of intervention model impact the reading growth of students? Are our choices in intervention models leading to unintended inequities in students' reading growth? Given the choice between different models of intervention currently in place, we need to understand how these models interact with student reading development, and how the costs and benefits of the models are experienced by stakeholders.

This study helps to identify and bring to a conscious level the impact of different models of reading intervention offered in this mid-sized district in the Midwest that have heretofore been hidden or ignored. The traditional model of intervention offers twice the number of minutes of instruction and is currently used in all non Title-1 buildings and two Title-1 buildings. The reading lab model offers half the number of minutes of instruction and is offered in three of the five Title-1 buildings in our district. This potential mismatch between needs of the population and amount of support is a potential equity issue, where students in Title-1 buildings are offered less support to develop reading proficiency, a critical skill used in all content areas and essential to a democratic society. With our district's focus on equity, it is imperative that we interrogate our practices through an equity lens. This illuminative evaluation study seeks to do just that.

Limitations of the Study

This study seeks to answer questions uniquely situated within my school context, and as such, may not be generalizable to middle school reading interventions in other districts. However, this potential lack of generalizability is inversely proportional to the relevance of the study to decision-makers in my district. This study

includes the population of students enrolled in reading intervention courses during the 2022-2023 school year. It is unclear if this population is representative of each population year-to-year in reading intervention courses in my district, or if the population reflects the general population of middle school reading intervention students beyond my district. Depending on the findings of this study, additional replication studies over a three-year period would allow district leadership to identify the similarities and differences across cohorts of students from year to year. This information will drive decisions about how to proceed with research and programing for students in grades seven and eight who read below proficient levels.

Due to time constraints, I was unable to include teacher, parent, and building principal voices in this research. Moving forward, additional time and effort should be spent garnering information from these stakeholders. Including this data in an illuminative evaluation of our middle school reading intervention programs will further bring the impact of different models of reading intervention in our middle schools to a conscious level.

Understanding the costs and benefits of any model of reading intervention is complicated. One cannot draw a straight line between a baseline test score and a later test score, as many confounding factors exist for any child taking a standardized assessment, most especially those in middle school. A limitation of this study is that I have not identified all the moderating variables that may impact student achievement as shown on the MAP Growth Reading assessment. Some of these variables are known, such as student attention to details and student motivation, but are difficult or

even impossible to measure. Other moderating factors are unknown. Additionally, students may very well gain reading skills and confidence, but the impact lags behind when measured by a standardized assessment. It is also important to note that students may grow and benefit from reading intervention in ways that are not being measured in this current study, and likewise, costs may exist for students enrolled in reading intervention in middle school that are also not being measured in this current study.

Finally, program implementation fidelity may be a factor in students' experiences in reading intervention. Although new curricula were implemented three years ago, the interruption of the Covid-19 Pandemic made a strong roll-out of these curricula difficult. As I work in classrooms across the district, it is obvious that some teachers are enacting the curriculum with fidelity to student learning, others are using the materials in a haphazard fashion, and still others are following the script without careful consideration of the significance of the lessons or knowledge of students' needs. Some teachers work with students with a profound sense of urgency, while others expect little of their students and accept even less. Sadly, some of our most vulnerable students enrolled in reading intervention are being led by less effective, less passionate, and less experienced teachers, confounding the problem of low reading skills, and adding layers to the equity concerns I raise in this dissertation. As a district, we need to continue to develop teachers' capacities to understand the complexity of adolescent reading intervention instruction, and the myriad factors that intersect with student motivation and students' success within our reading intervention program.

"We were never born to read. Human beings invented reading only a few hundred years ago. And with this invention, we rearranged the very organization of our brain, which in turn expanded the ways we were able to think, which altered the intellectual evolution of our species"

(Wolf, 2007, p. 4)

Chapter 2

Review of Scholarly and Practical Knowledge

As discussed in Chapter 1, reading intervention is the "instructional approaches and programs designed to either prevent or remediate persistent reading difficulties" (Tunmer, 2008). Reading intervention can be separated into two categories: prevention, which aims to address students entering school with inadequate knowledge, skills, or experiences from which to draw while learning to read, and remedial programs, which target older students making inadequate progress in learning to read (Baye et al., 2019; Jimerson et al., 2016; Kamil et al., 2008; Kilpatrick, 2015; Torgesen & Miller, 2009; Tunmer, 2008; Vaughn & Fletcher, 2012). In this project, reading intervention refers to the programs aimed at addressing below-level reading proficiency for middle school students.

The intent of reading intervention programs is to provide students ongoing support to develop the skills and strategies they need to proficiently read and understand grade-level text (Hall & Burns, 2018; Kilpatrick, 2015; Sonju et al., 2019). As students move further away from primary classes, classroom instruction places increased

emphasis on student's ability to read, understand, and interpret text (Beers, 2023; Kilpatrick, 2015; Sonju et al., 2019). Without additional support to address the underlying cause of reading difficulties, students may struggle to complete content area text reading (Beers, 2023; Kilpatrick, 2015; Sonju et al., 2019). Reading comprehension is influenced by several factors, most critically vocabulary knowledge and background knowledge (Beck et al., 2013; Cervetti et al., 2016; Dehaene, 2009; Kamil et al., 2008; Kilpatrick, 2015; McKeown et al., 2018; Recht & Leslie, 1988; Swanson et al., 2017; van Steensel et al., 2016). Both vocabulary and background knowledge are related to the amount of reading students do. As such, when students are unable to read grade level materials, they fall further and further behind their peers (Beers, 2023; Smith et al., 2021; Sonju et al., 2019; Wu et al., 2021).

In this thematic review of scholarly and practical knowledge, I examine the gap between grade level proficiency and student proficiency levels, using an equity lens to better understand why the gap exists. I outline how bias continues to lead to false assumptions by identifying how the systems continue to reproduce inequities and promote biases. Next, I frame an understanding of reading intervention as an equitable path forward by reviewing systems including multi-tiered systems of support and response to intervention, as well as the unique needs of middle school reading intervention teachers. In this section I also address what we have learned from brain research, and how this intersects with our understanding of reading development, especially in regard to adolescent brains. I conclude this section with a review of why some students struggle to learn to read. I end this chapter with a review of best practices

for reading interventions targeted for middle school students and a review of current models of intervention.

Intersecting Equity and Literacy

Educators are increasingly aware of the inequities in the educational system (Ford & Triplett, 2019; Milner et al., 2019; Patrick et al., 2020). Work to address these inequities is underway, as educators and policymakers strive to provide a more equitable school experience for all students (Ford & Triplett, 2019; Gorski, 2019; Ishimaru & Galloway, 2021; Milner et al., 2019; Patrick et al., 2020). Due to the nature of the system, adolescent students needing reading support are often placed in a reading intervention course at the exclusion of other, sometimes credit-bearing, courses in middle school (Baye et al., 2019). As such, it is paramount decision-makers ensure students are matched to the strongest reading intervention possible for their particular needs (Edmonds et al., 2009; Förster et al., 2018; Hall & Burns, 2018; Torgesen & Miller, 2009), and teachers support these students in reading intervention with such efficacy that students are able to quickly develop their grade level reading skills and enroll in other content courses. When students miss instruction in other classes, whether that is music, art, computer science, or other academic connection type courses, they miss the opportunity to develop vocabulary and background knowledge for that subject area, further putting them at risk of falling behind their grade-level peers (Beers, 2023).

What exactly is the root cause of this gap between grade-level expectations and reading proficiency for so many students? To better plan how to address this gap, one needs to understand the systems that continue to create the gap, including biased

placement policies, subjective teacher judgements, biased disciplinary policies, and weak Tier 1 instructional practices.

Biased Assessments Lead to False Inferences

One assumption we must examine is the belief that all students served in reading intervention actually need that intervention. Often placement into and out of intervention courses is based on standardized assessments (Brookhart, 2009; Torgesen & Miller, 2009). Often, this reliance on standardized assessments is done with an underlying assumption that standardized assessments are objective and free of bias. This positivist epistemology assumes such assessments are true identifiers of achievement, even though this assumption has been refuted by psychometricians (Cunningham, 2019; Warne et al., 2014). People of Color, often the victims of the biased assessments, are more apt to recognize the inherent bias of the standardized measures and consider the results of such measures more cautiously.

Grodsky et al. (2008) outline three contradictions inherent in standardized testing. First, standardized testing was originally purported to be a means of redistributing resources. However, when we look at the impact of standardized testing, including the SAT and ACT, we see mass standardized testing has the opposite effect. Rather than providing opportunities for those who may appear unqualified for particular courses or higher education, these standardized tests serve to limit access to underrepresented and historically marginalized groups of students (Cunningham, 2019; Grodsky et al., 2008; Tienken & Zhao, 2013). Cronbach wrote, "[p]roponets of testing, from Thomas Jefferson onward, have wanted to open doors for the talented poor, in a system in which doors are

often opened by parental wealth and status" (Cronbach, 1975, as cited by Grodsky et al., 2008, p. 389).

Secondly, Grodsky and colleagues note the contradictions in differing definitions of equality (2008). The inception of standardized testing in the early 1900's coincided with the Common Schools movement. During this time, equality was conceptualized as sameness. "all students should experience the same curriculum in schools of the same quality with similar if not identical levels of resources" (Grodsky et al., 2008, p. 390). This contrasted with later definitions of equality that looked for equality of opportunity. Looking at what students would do after high school, many believed schools should prepare students for that career path. This differentiation of curriculum would equally prepare students for adulthood. Today, equity is a term used to describe giving all students equal access to rigorous curriculum. The National Equity Project notes, "Educational equity means that each child receives what they need to develop to their full academic and social potential" (National Equity Project, n.d.). Differing beliefs of how to define equity persist, and equity was a major theme in the International Literacy Association's most recent "What's Hot" report (International Literacy Association, 2020).

The third contradiction identified by Grodsky et al. (2008) centers around the impact of standardized testing on curriculum. As teachers, administrators, and school districts are placed under increasing scrutiny, and as accountability and efficiency is measured through standardized testing, some schools and teachers are restricting their curricula to only those ideas that are found on the standardized tests. This has the impact

of limiting access to wide-range subjects and topics, as well as limiting the development of thinking to only the types of thinking that can be measured in large-scale tests, often multiple-choice items. The restriction of curriculum is widely discussed today as educators and policymakers wrestle with our schools' recovery from the recent pandemic. As noted by Willis, "The resulting standardization of some reading curriculum is a contradiction to serving students' unique needs and reading aptitudes" (2008, p. 158).

Bias in standardized testing is a known, pervasive problem, and has been discussed widely in peer-reviewed literature and the American Psychological Association (Cunningham, 2019; Warne et al., 2014). Researchers note cultural bias is an inherent design of standardized testing (Cunningham, 2019; Warne et al., 2014) and some even regard the work of standardized test writers as nefarious, with an obvious intention to discriminate against particular groups of students representing historically marginalized populations. Additionally, Warne et al. (2014) notes test bias can also be a factor at the item level of test construction.

Statisticians have developed methods to measure differential item functioning, or item bias. This methodology, however, is somewhat suspect, in that differential item functioning analysis requires analysts to assume the total test score is free of bias in order to run the analysis (Warne et al., 2014). Finally, some researchers claim that tests are biased in the consequences of the interpretations (Cunningham, 2019; Tienken & Zhao, 2013). These authors claim that fairness is a socially agreed upon construct, and thus, "it is possible for a test to demonstrate no statistical evidence of bias, yet still be unfair in the eyes of some members of society" (Warne et al., 2014, p. 577).

Although small in comparison to racial/ethnic and socioeconomic differences, modest differences are detected in standardized measures in favor of female students. Quinn writes, “standard deviations for males tend to be larger than for females in measures of reading, and therefore choosing an arbitrary cutoff point will automatically include more males” in intervention (2018, p. 1044). In effect, this means schools could be overidentifying males due to the variance in standard deviations on formalized tests. Conversely, schools could be failing to identify some females needing reading intervention. This practice hurts both males and females, as males are over-identified and females are under-identified (Sousa, 2017). Sousa also notes that males may be overrepresented in reading interventions because they may act out when they become frustrated with learning to read, drawing more attention for disruptive behaviors compared to females experiencing the same frustrations.

Quinn’s meta-analysis of the differential identification of students for reading intervention by gender showed males are more likely than females to be identified for reading intervention (2018). According to Quinn, “males are 1.83 times more likely than females to have reading difficulties” (2018, p. 1040). Quinn attributes this to one of three issues: definitions that rely on IQ-discrepancies, school-based referral practices, and different conceptions of what constitutes low reading achievement. The research on the disparity of standard deviations when disaggregated by gender, racial/ethnic group, and socioeconomic status is one reason we need to bring the assumption of bias-free standardized assessments under scrutiny (Grodsky et al., 2008; Heyder et al., 2021; Quinn, 2018).

In a study funded by the National Center for Education Evaluation and Regional Assistance on Response to Intervention, Balu et al. (2015) found schools tend to use assessment data inaccurately. The researchers found that universal screeners were primarily used at the beginning of the year, the results of which determined who would be targeted for Tier 2 intervention. This misguided practice stands on a false assumption that a single assessment can fully predict which students will need additional support beyond Tier 1 instruction (Balu et al., 2015). In today's data-driven school climate, parents, teachers, and school leaders often rely on discrete numbers to make decisions about programming, scheduling, and evaluation, (Sonju et al., 2019) assuming those assessments to be fair and unbiased.

Subjective Teacher Judgements

Research has long identified unequal distributions of students served in reading intervention courses. Often, students of color, students eligible for free/reduced meal programs, and male students are overrepresented in intervention classes. The subjectivity of teacher judgements is one reason for the overidentification of some groups of students for intervention (Cunningham, 2019; Goodman & Webb, 2006; Ritter & Anderson, 2018; Vaughn & Fuchs, 2003). Researchers attribute inappropriate teacher referrals of students to remedial interventions to lack of competence, possibly due to lack of preparation, in identifying learning problems (Vaughn & Fuchs, 2003). Additionally, inappropriate school behaviors often lead teachers to recommend students for interventions (Girvan et al., 2017; Ritter & Anderson, 2018; Skiba et al., 2011).

Preparing teachers to interrupt systems of social reproduction that position students from historically marginalized groups as less than or less able to learn requires teachers to critically reflect on the role they play in the social reproduction of these ideas (Cunningham, 2019). The What's Hot 2020 poll by International Literacy Association indicates professional development and equity among the top five essential topics to address literacy outcomes. Nearly half of the respondents reported wanting more support in addressing inequity. Teachers, even when they are aware of the inequities, lack the knowledge and skills to adequately address or interrupt those inequitable practices (Cunningham, 2019).

Biased Disciplinary Practices and Policies

Biased disciplinary practices and policies also lead to unequal assignment to reading intervention courses (Barrett et al., 2019; Ritter & Anderson, 2018). Considering the expectation that all students have opportunities to learn through robust Tier 1 teaching, exclusionary disciplinary practices put some students at greater risk of missing that strong, first instruction, and thus, lack the opportunity to learn. These students are then placed in reading intervention courses, further restricting their access to wide-range curricular topics.

Exclusionary Discipline Policies by Race/Ethnicity

Exclusionary discipline practices include any discipline that results in students being excluded from the classroom for Tier 1 instruction (Ritter & Anderson, 2018; Skiba et al., 2002). In one study, researchers found what "appeared to be a differential pattern of treatment, originating at the classroom level, wherein African American students are

referred to the office for infractions that are more subjective in nature" (Skiba et al., 2002, p. 317). This subjectivity is a concern when it leads to exclusion of students from the classroom, diminishing opportunities for Tier 1 instruction and ultimately leading to a need for reading intervention. Historical school data indicates that male students are more likely to be involved in disciplinary action compared to females (Girvan et al., 2017; Heyder et al., 2021; Love, 2014; Morris & Perry, 2016; Skiba et al., 2011). The data is even more stark when looking at African American boys (Barrett et al., 2019; Ritter & Anderson, 2018; Skiba et al., 2011).

In the past two decades alone, numerous studies have indicated that Black students are involved in disproportionate incidents of punishment compared to other race-gender groups (Barrett et al., 2019; Cunningham, 2019; Girvan et al., 2017; Grodsky et al., 2008; Jacobsen et al., 2019; Milner et al., 2019; Morris & Perry, 2016; Ritter & Anderson, 2018; Skiba et al., 2011). While efforts have been made to draw attention to these racial disparities, continued racial disparities persist (Barrett et al., 2019; Cunningham, 2019; Girvan et al., 2017; Grodsky et al., 2008; D. J. Losen et al., 2018; Milner et al., 2019; Ritter & Anderson, 2018). In fact, African American and Latino students often receive harsher punishments compared to their white counterparts for similar infractions (Anderson et al., 2007; Barrett et al., 2019; Girvan et al., 2017; Losen et al., 2015; Milner et al., 2019; Ritter & Anderson, 2018; Skiba et al., 2002, 2011). Students with disciplinary referrals are sent to the office, excluding them from the instruction from the classroom, resulting in a loss of opportunity to learn from strong Tier

1 instruction (Ritter & Anderson, 2018; Skiba et al., 2011). Even more learning time is lost if the referral results in a school suspension.

The impact of disciplinary bias on student reading growth is compounded over time. Research finds that suspensions beget suspensions (Anderson et al., 2007; Barrett et al., 2019; Girvan et al., 2017; Jacobsen et al., 2019; Losen et al., 2015; Losen et al., 2018; Morris & Perry, 2016; Ritter & Anderson, 2018). If African American male students are disproportionately excluded from class for discipline referrals, it holds that these same students will likely experience continual exclusions from class. When students are missing class, whether due to illness, truancy, or exclusion, they are unable to experience and interact with their peers and teacher. The best teacher, the best curriculum, cannot bridge the gap when students are not in class. It makes sense that if African American male students are excluded from class for disciplinary reasons, they are at greater risk of falling behind in their reading development, requiring support such as reading intervention to strengthen poor or weak reading skills.

In one study, African American male students who were suspended during their seventh-grade year were six times more likely to be suspended the following year compared to students who were never suspended (Anderson et al., 2007). This draws attention to a critical time period, grade seven, for interventions aimed at curbing suspensions. The researchers found suspensions declined as reading achievement increased (Anderson et al., 2007). This finding has ramifications for additional research into interventions directed at decreasing school suspensions. Perhaps, rather than addressing the behaviors of students, more attention should be given to closing the

achievement gaps and bolstering the academic achievement of all students, especially African American males.

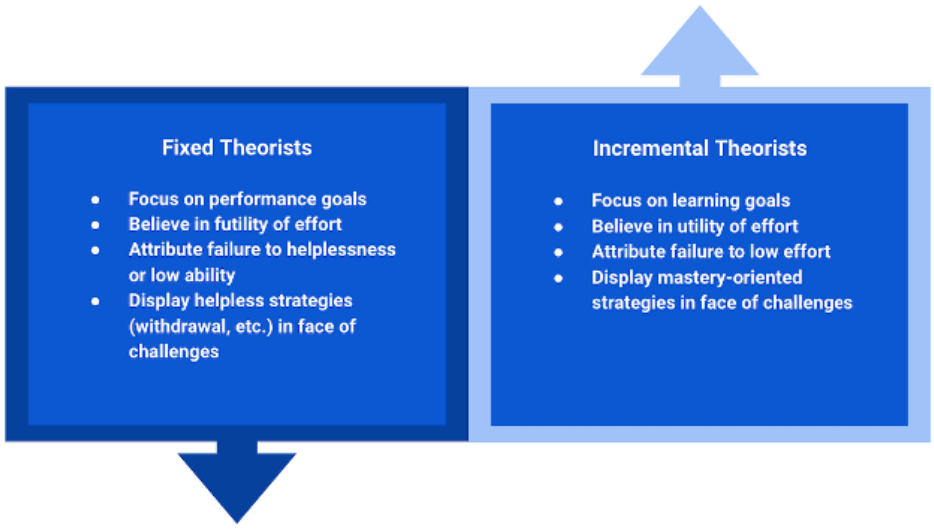
The long-term effects of disciplinary action must be addressed as schools work to eliminate the inequities in the educational system. Studies show that disciplinary referrals, especially those that involve suspensions, have a long-term impact on the student's sense of well-being and trust of the school system (Anderson et al., 2007; Barrett et al., 2019; Girvan et al., 2017; Jacobsen et al., 2019; Love, 2014; Morris & Perry, 2016). Students who are experiencing unresolved trauma are less likely to grow academically, as their affective filter is high and they are operating in a "fight or flight" dimension (Girvan et al., 2017; Jacobsen et al., 2019; Love, 2014). Students who fall behind their peers often act out in frustration, causing them to be involved in further disciplinary infractions that result in being sent out of class — a loss of classroom instructional time. All of these lead to loss of Tier 1 instruction addressed at teaching students to read.

Student Sense of Self

Researchers recognize the transition from elementary grades to middle school or junior high to be one of great changes, and note that the mismatch between what students need at this time and what the environment provides can result in student disengagement (Blackwell et al., 2007). These same researchers have identified two distinct ways students attribute achievement, as shown in Figure 5: *Student Perceptions of Intelligence.* On the one hand, students have a fixed mindset of achievement. They believe that their

Figure 5

Student Perceptions of Intelligence



success is a fixed entity within them. At the other end of the spectrum, students have a malleable mindset of achievement. They believe they can incrementally increase their achievement through the work they do. These students look at learning progress rather than learning outcomes.

These differences in how students perceive intelligence have lasting effects on their experiences in middle school and beyond (Blackwell et al., 2007). As students are met with increasing challenges, both academically and socially, their perceptions of intelligence drive how they respond. Students with a fixed mindset tend to withdraw when met with unsuccessful attempts at challenging tasks, while those with a malleable mindset tend to seek support, adopt new strategies, or employ additional efforts when initially meeting failure at challenging tasks (Blackwell et al., 2007).

When students are identified for reading intervention, it is a wholly dissimilar experience than being identified for math intervention. Many adults, including parents and professionals, glibly quip they are “not a math person” (Kimball & Smith, 2013; Liben & Liben, 2019), yet remain reticent to announce they are not “readers”. The social implication of low reading skills extends beyond adolescence into adulthood (Kilpatrick, 2015; Liben & Liben, 2019).

Weak Tier 1 Practices

Students, especially those from historically marginalized populations, may lack access to strong Tier 1 instruction (Cunningham, 2019). Tier 1 instruction is “instruction within an evidence-based, scientifically researched core program” (E. S. Shapiro, n.d., para. 2). The intent of the program is the “delivery of a high-quality instructional program in reading . . . that has established known outcomes that cut across the skill development of the targeted area” (E. S. Shapiro, n.d., para. 2).

One cause of reading difficulties among specialized populations is the lack of strong, first instruction in reading. Students must develop skills in concepts about print, the alphabetic principle, phonemic awareness, and letter recognition in order to develop decoding skills (Moats & Tolman, 2019; Sousa, 2017). Additionally, students need opportunities to practice decoding skills with real words. Students who are not afforded these opportunities to learn may be unable to develop skills in vocabulary, semantics, and syntax, and thus, may read with poor fluency and poor comprehension.

As discussed earlier, out of class discipline referrals is another major cause of loss of Tier 1 instruction, especially for students historically overidentified for exclusionary

discipline (Ritter & Anderson, 2018). Additionally, strong Tier 1 instruction requires teachers receive sufficient initial training, with follow up professional development to implement the instructional program with integrity and fidelity to student learning (Shapiro, n.d.). The need for strong, ongoing professional development for teachers is often identified as a challenge for schools.

Students who lack access to literacy rich environments are at increased risk of needing reading interventions. Often, schools serving high populations of students from historically marginalized populations, low socioeconomic status, and diverse populations of English learners may be competing for limited resources and materials (Cunningham, 2019). Additionally, well-meaning teachers in these buildings may be using outdated methodologies. Sousa notes, “To be successful in teaching all children, teachers should be extremely knowledgeable about effective strategies as well as diagnostic in their approach to reading instruction” (2017, p. 211). More recently, schools serving high populations of students who participate in free and reduced meal programs and/or have high populations of students of color often experience high rates of teacher turnover (Carver-Thomas & Darling-Hammond, 2019). This results in school leaders continuously hiring less qualified educators (Carver-Thomas & Darling-Hammond, 2019; Cunningham, 2019).

Whether the disparities in identification for reading interventions are due to underlying biases within the assessments, the inaccurate use or interpretation of assessments, or the weak Tier 1 practices remains to be seen. Likely, it is the interaction and influence of several factors that leads to a disproportionate identification of male

students, students of color, and students from lower socioeconomic status for reading intervention.

Intervention as an Equitable Path Forward

Response to Intervention

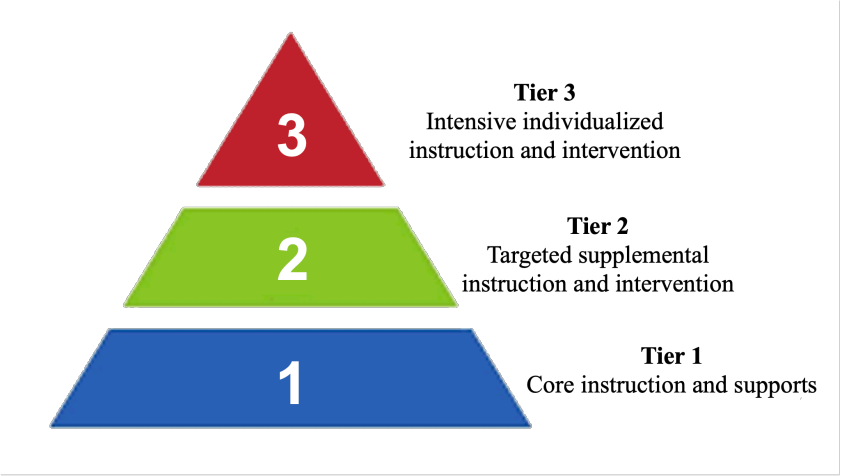
Response to intervention (RTI) was a particular legislation included with the reauthorization of the Individuals with Disabilities Act in 2004 (Jimerson et al., 2016). This legislation allowed students to be identified with a specific learning disability if they did not respond adequately to research-based intervention. The intention was to eliminate outside causes of a student's low achievement, such as poor instruction. Response to Intervention is a systematic process which includes universal screening, research-based instructional design and curricula and regular progress monitoring and a leveling up of support to meet the specific needs of a student who is not meeting achievement goals (Jimerson et al., 2016).

Multi-tiered Systems of Support

Reading intervention at the middle school level is considered a Tier 2 intervention (see Figure 6). However, research indicates students enrolled in Tier 2 interventions are often denied access to strong Tier 1 instruction (Sonju et al., 2019). This is counter to the intent of Tier 2 instruction, where students are provided more time and opportunity to acquire the skills they need. Often, the system prevents students from receiving both Tier 1 and Tier 2 instruction, so Tier 2 becomes "different from, but not necessarily supplemental to, core reading instruction" (Balu et al., 2015, as cited in Sonju et al., 2019, p. 11).

Figure 6

Multi-tiered Systems of Support (Sedita, 2016)



Unique Needs of Middle School Reading Intervention Teachers

Foundational Literacy Knowledge: The Science of Reading

Advancements in neuroscience and cognitive research have given way to advancements in understanding how children learn to read (Dehaene, 2009). Researchers have varied definitions of reading, but most, like Louisa Moats, use some form of the Simple View of Reading to define this process (Catts et al., 2006; Cervetti et al., 2020; Francis et al., 2018; Lonigan et al., 2018; Moats, 2020; National Center for Education Statistics, 2019; Tunmer & Hoover, 2019). The Simple View of Reading, as shown in Figure 7, posits that reading comprehension is the outcome of word recognition and language comprehension (Gough & Tunmer, 1986). The RAND Reading Study Group describes reading as "the process of extracting and constructing meaning through interaction and involvement with written language" (RAND Reading Study Group, as

Figure 7

The Simple View of Reading

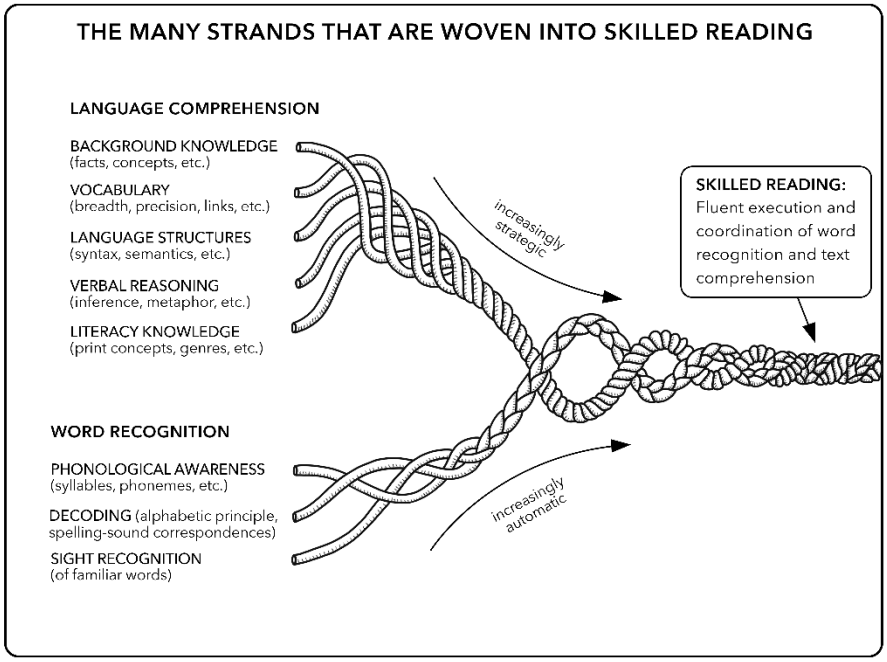
cited in Frankel et al., 2016, p. 7). This definition of reading, building upon the definition offered by Becoming a Nation of Readers published in 1985, highlights "the important roles of texts and contexts in the construction of meaning" (Frankel et al., 2016, p. 7).

More recently, researchers have expanded and built upon the Simple View of Reading. Scarborough's Reading Rope (Moats & Tolman, 2019) extends the Simple View of Reading, further unpacking the discrete skills students must develop to read for understanding. As shown in Figure 8, Scarborough illustrates the complex nature of learning to read. Word Recognition skills, including phonological awareness, decoding, and sight recognition are woven together while Language Comprehension skills, including background knowledge, vocabulary, language structures, verbal reasoning, and literacy knowledge are also woven together. These strands continue to weave together, supporting each other while also allowing for increasingly complex word recognition and language comprehension (Hoover & Tunmer, 2020; Moats & Tolman, 2019).

Middle School a time of profound change. It is well known that students in this age range experience momentous changes emotionally, physically, and academically (Steinberg & Morris, 2001). Unfortunately, middle school students do not make

Figure 8

Scarborough's Reading Rope (Dieter & Washington, 2022)



noteworthy progress in their reading and writing skills when they begin below grade level (U.S. Department of Education, 2022). Why might this be so?

In Breckinridge Public Schools, many reading intervention teachers have not fully embraced the models of reading identified by researchers and outlined above. They continue to want to address students' reading needs as discrete fluency or comprehension skills, without the understanding that both fluency and comprehension are the outcomes achieved by the interplay of language comprehension and word recognition. At the middle school level and beyond, teachers are most concerned with reading comprehension, the ability to construct both literal and inferential meaning of written text (Steinle et al., 2022; Tunmer & Hoover, 2019). Yet, teachers fail to recognize the complexity of skills that support reading comprehension (Hoover & Tunmer, 2020). At

the same time, reading fluency, the ability to read accurately with appropriate speed and prosody, is often relegated to the number of words read correctly per minute. This shallow understanding of fluency by teachers further hinders their ability to design opportunities for students to develop reading fluency, which is often a decoding problem (Kilpatrick, 2015; Moats & Tolman, 2019; N. Scammacca et al., 2007; Steinle et al., 2022).

Given the importance of reading comprehension and the current lack of reading proficiency by our middle school students, planning and implementing robust and effective reading intervention for middle schoolers is imperative. The question for researchers becomes: Are these interventions happening? To address this question, the Institute of Education Sciences (IES) has focused on studying the efficacy of reading intervention programs across the nation since 2009 (Fien et al., 2018). More recently, this group devotes both time and funding to identify not only the policies, programs and practices that work, but also the factors that make such practices and programs work, and why some programs are ineffective (Fien et al., 2018). Many researchers believe that reading proficiency can be achieved by all but a small percentage of students (Kilpatrick, 2015, 2019; Moats, 2020; N. Scammacca et al., 2007).

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prosody, is often relegated to the number of words read correctly per minute. This shallow understanding of fluency by teachers further hinders their ability to design opportunities for students to develop reading fluency, which is often a decoding problem (Kilpatrick, 2015; Moats & Tolman, 2019; Scammacca et al., 2007; Steinle et al., 2022).

Ongoing Professional Learning

Ensuring all reading intervention teachers at the middle school level are trained and knowledgeable about reading intervention is a challenge (Bartholomew & De Jong, 2017; Baye et al., 2019). Middle school teachers are part of the secondary teacher preparation programs, and thus, often lack the foundational skills in reading development afforded elementary teachers in pre-service programs.

This is compounded when teachers are asked to teach reading intervention as an "optional period" or to fulfill full-time teaching status. Frequently, teachers in the middle school classrooms leading our most vulnerable readers lack adequate training and further lack ongoing professional learning opportunities, as the other aspects of their contract demand their time and attention. In a study by Bartholomew and DeJong, researchers found one barrier to strong Tier 1 instruction at the secondary level is teacher resistance to implementing research-based practices (2017). Researchers found principals frequently shared that the biggest challenge to Tier 1 instruction was the pushback by veteran teachers. One principal shared "Sometimes even the good teachers don't believe that research-based instruction is the best approach" (Bartholomew & De Jong, 2017, p. 269). Other principals included in the study concurred that a huge barrier to implementing Response to Intervention at the secondary level was the resistance of staff. It is logical,

then, that ongoing professional development regarding research-based best practices is needed to support secondary students and teachers.

As noted by Sousa, “we cannot expect prospective teachers of reading to independently acquire the knowledge and skills they will need to recognize and implement research-based strategies” (2017, p. 211). Teachers need both robust pre-teacher education courses aimed at helping teachers develop an understanding of how learning occurs in the brain, and specifically, “how the brain learns to read” (Sousa, 2017, p. 211). Sousa expands this by noting “This information should be presented in their college courses as well as during continuing in-service professional development programs to keep their knowledge base up to date” (2017, p. 211). Ongoing professional development should continue to support teachers’ knowledge of how reading occurs, how to detect when that is not happening, and what they can do to address the lack of learning. Ongoing professional development should serve as the conduit between research and practice, giving teachers access to the latest developments in our understanding of reading development.

According to the Bill and Melinda Gates Foundation (2017), providing professional development is a multi-billion-dollar venture, and teachers reportedly spend nearly seventy hours each year on professional development provided by their districts (Bill and Melinda Gates Foundation, 2017; Sims & Fletcher-Wood, 2021). Teachers spend an additional twenty hours on professional learning on their own accord (Bill and Melinda Gates Foundation, 2017; Sims & Fletcher-Wood, 2021). It is imperative, then,

that we maximize the time and money we are already spending on professional development to ensure we are utilizing these resources to the fullest potential.

Professional learning is a heavily researched aspect of education (Balta & Eryılmaz, 2019; Basma & Savage, 2018; Borko, 2004; Sims & Fletcher-Wood, 2021; Thurlings & den Brok, 2017; Timperley & Phillips, 2003; Wilsey et al., 2020). While researchers do not agree on the specific number of hours needed for effective professional development, all agree that a single "one and done" event is unlikely to influence teachers to such a degree that student achievement would be impacted. In one 2019 study, researchers found the range of twenty to thirty hours to be the beneficial amount of time, with professional development that lasted over thirty hours to have diminishing effects (Balta & Eryılmaz, 2019). Previous studies suggested upwards of forty hours of professional development were required to be considered successful (Bell & Cowie, 2000). While the numbers may change, all research read for this literature review concluded that the most effective professional development is enacted over an extended period of time.

Exacerbating the issue in developing teacher skills and attitudes, is the high turnover rate among the teaching staff in buildings serving larger numbers of students representing historically marginalized populations, where increased numbers of students are identified for reading intervention (Carver-Thomas & Darling-Hammond, 2019; Sousa, 2017; Williams et al., 2022). The need for strong, ongoing professional development is never fully realized when the teachers within the building move

frequently (Carver-Thomas & Darling-Hammond, 2019). This has been exacerbated across the nation and the world post-pandemic.

Formative Assessment Knowledge

"Firm evidence shows that formative assessment is an essential component of classroom work and that its development can raise standards of achievement" (Black & Wiliam, 1998). Formative assessment is often conceptualized as assessment used for learning (Black & Wiliam, 2009; Cagasan et al., 2020; Heredia, 2020; Schildkamp et al., 2020). In the groundbreaking work done in 1998, Black and Wiliam postulated that instruction and formative assessment were intimately intertwined and inseparable. For this reason, it is important that teachers have a full understanding of the nature of formative assessments, as well as their functions and forms, in order to harness the power of this component of effective teaching. Additional research has supported the claim that formative assessment as a process can improve student learning.

Mills and Harrison defined formative assessment as "a planned, ongoing process used by all students and teachers during learning and teaching to elicit and use evidence of student learning to improve student understanding of intended disciplinary learning outcomes and support students to become more self-directed learners" (2020, p. 332). In other words, formative assessment is a process that begins with clearly stated learning goals, includes checks for understanding, and then provides feedback to the teacher and learner regarding the learner's acquisition of those learning goals. Ultimately, the formative assessment leads to actionable decisions for the teacher and learners regarding

next steps to take in the teaching/learning process. It is this action that identifies an assessment as formative versus summative.

What then, are the factors of formative assessment that inform teachers on how to best implement this into the teaching/learning cycles of their classrooms? According to the research, formative assessments share four characteristics. First, formative assessments must be able to identify both the intended learning target and the individual student's knowledge and skills in relationship to that defined learning target (Heredia, 2020; Heritage, 2007; Heritage & Heritage, 2013). Teachers sometimes referred to this as a space of productive struggle. Other researchers refer to this as the zone of proximal development (Afflerbach & Cho, 2011). Teachers who are adept at recognizing the student's zone of proximal development can more effectively provide just enough scaffolding to allow for productive struggle without frustration.

Secondly, formative assessment must provide feedback to the teacher (Fisher et al., 2016; Hattie & Timperley, 2007; Heredia, 2020; Heritage, 2007, 2020; Heritage & Heritage, 2013). This feedback should inform the teacher on students' current levels of performance in relation to the learning target, as well as provide information that will inform the teacher's next steps in teaching (Afflerbach & Cho, 2011). In this regard, teachers are able to use the formative data to inform their decisions regarding whether to push ahead, circle back, review, or provide additional support for learning. As reading intervention teachers, this skill is essential in ensuring that students are working at the upper limits of their instructional zones.

The third factor of formative assessment is feedback to the learner (Afflerbach & Cho, 2011; Fisher et al., 2016; Hattie & Timperley, 2007; Heredia, 2020; Heritage, 2007, 2020; Heritage & Heritage, 2013). Students must be involved in the learning process and motivated to learn. In this way, students are able to monitor their own learning in relation to the clearly defined learning targets set forth by the teacher. In regards to reading intervention, student motivation is a critical element teachers must address in order for students to make maximum growth in minimal time.

The fourth and final factor involved in formative assessments is the use of learning progressions (Fisher et al., 2016; Heredia, 2020; Heritage, 2007, 2020; Heritage & Heritage, 2013). Learning progressions provide clearly defined learning goals, with additional learning objectives that build up to those learning goals. Ideally, this mix of long-term and short-term goals include clearly defined success criteria, which informs the learners of where they are, where they are headed, and how they will get to the target learning destination. These learning progressions also provide a roadmap for teachers, allowing them to weigh their moment-to-moment decisions about pacing, etc. in light of the overall plan for the class. In reading intervention classes, these learning targets could be measured by fluency rates, fluency rubrics, or comprehension strategy use.

In the early research on professional development on formative assessments, Cowie and Bell (1999) identified the ability of the teachers to notice learning as a key principle in interactive (unplanned) formative assessments. For teachers to be able to engage in this noticing, they must have deep domain knowledge of their subject (Cowie & Bell, 1999). Otherwise, they will not know what aspects of the interactions to attend to,

and will be unable to make intentional decisions about the next teaching moves. Additionally, researchers recognize that some types of formative assessment are more relevant to particular content areas (Bell & Cowie, 2000; Brookhart, 2009; Fisher et al., 2006; Heritage, 2007; Kosnik et al., 2015; Lyon et al., 2018; Mills & Harrison, 2020; Schildkamp et al., 2020).

Clearly reading intervention teachers must be well-versed in the use of formative assessment in order to carefully craft lessons that allow students productive struggle, allow teachers to use data to design appropriate learning activities, motivate students, and provide clear learning targets for students.

Skills in Providing Feedback to Students

Much has been written about feedback and the power and purpose of feedback used to support learning (Andersson & Palm, 2017; Brookhart, 2009; Hattie & Timperley, 2007; Heritage, 2007). For feedback to be effective, teachers must have a strong understanding of the content they are teaching and the students with whom they are teaching. Teachers can then work to scaffold learning within each student's zone of proximal development in order to promote learning. Without this content knowledge, teachers may not be able to provide sufficient scaffolding for learning.

Middle school teachers must also be prepared to teach students how to engage in self and peer assessments. By participating in peer assessments, research indicates students learn to be more independent in their own learning (Fisher et al., 2006, 2016; Hattie & Timperley, 2007; Heritage, 2020; Schildkamp et al., 2020). Students develop metacognitive skills, which in turn promotes a sense of agency and independence as

students gain clarity about the learning target, their relationship to that target, and steps they can pursue to achieve the learning goals (Fisher et al., 2006, 2016; Hattie & Timperley, 2007; Schildkamp et al., 2020).

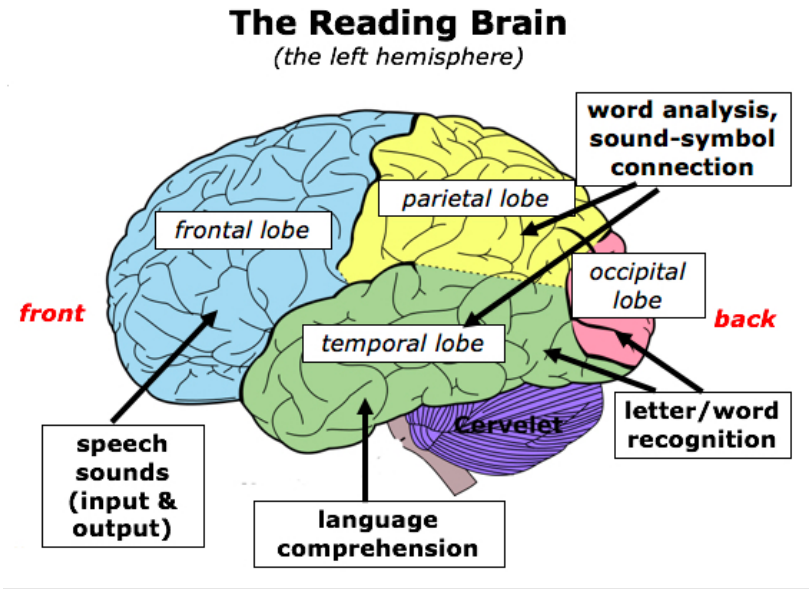
Brain Research and Reading

Over the past two decades, researchers have made tremendous advances in understanding how people learn to read. Of particular interest is the way in which learning to read fundamentally changes the brain. In his book *Reading in the Brain* (2009) Dehaene demonstrates the evolution of the reading brain, tracing the evolution from the primate brain to the modern human brain. By weaving together neuroscience, cognitive theory, and cultural development, Dehaene illuminates the complex processes involved in learning to read.

Researchers most recently have recognized that learning to read, unlike learning to speak, is an extraordinarily complex skill (Dehaene, 2009; Sousa, 2017; Willis, 2008). Unlike learning language, there is no specialized area of the brain devoted to learning to read. This means learning to read requires the coordination of several areas of the brain — including three neural systems (see Figure 9). The visual processor allows the brain to scan the letters in the word. The signals travel to the occipital lobe in the back of the brain. The signals are decoded in the angular gyrus located in the left hemisphere, where the signals are then separated into phonemes. Next the language area of the brain is activated in the temporal lobe. The temporal lobe is also where auditory processing occurs. The auditory processor allows the brain to sound out each phoneme in the word.

Figure 9

Areas of the Brain Associated with Reading (Sedita, 2020)



Broca's and Wernicke's area then provide information about the word from the mental lexicon. Finally, the frontal lobe processes the information from all the sources and provides meaning for the decoded word (Moats & Tolman, 2019; Sousa, 2017).

Adolescent Brain Development

Although each person will develop at individual rates, researchers agree that adolescence is a time of tremendous change in a person's social, emotional, physical, and cognitive growth (Blackwell et al., 2007; Casey et al., 2008; Christie & Viner, 2005; Csikszentmihalyi, 2023; Dahl, 2004; Foulkes & Blakemore, 2018; Steinberg & Morris, 2001). This particular developmental period, marked by the beginning of puberty and ending with adult independence, brings with it a reorientation of social influences. Namely, adolescents shift their attention from parents and respected adults, to peer

influences. Researchers have identified particular aspects of social cognition that develop during adolescence, including: “heightened effects of peer influence on risk taking, risk perception and reasoning, hypersensitivity to social exclusion, and reduced use of other people’s perspective in decision making” (Foulkes & Blakemore, 2018, p. 2). Of particular importance when considering reading interventions for adolescents, is the increased sensitivity students in this age range experience regarding social exclusion (Csikszentmihalyi, 2023). When students are enrolled in reading intervention classes, they often miss taking classes that allow students to express their ideas through art, music, etc.

Why Some Students Struggle to Read

Sousa (2017) notes three main reasons why some students struggle to learn to read. These include inadequate instruction, social and cultural differences, and physical causes which include both linguistic and non-linguistic issues (Sousa, 2017). Inadequate Tier 1 instruction was addressed earlier in this chapter, as were the social and cultural differences that lead to overrepresentations of some groups of students in reading intervention courses. In this section, I examine the physical causes of students’ struggles to learn to read.

Linguistic Physical Causes of Difficulty Learning to Read. Students may struggle to learn to read due to physical conditions that impact their linguistic systems. These causes may be interrelated, and some individuals may experience multiple linguistic problems. These linguistic conditions include phonological deficits, slow auditory and visual processors, differences in brain structure, deficits in phonological

memory, lesions in the brain, specifically in the visual word form area, and differences in the way females and males are socialized, leading to increased identification of males to reading interventions (Sousa, 2017).

Non-linguistic Physical Causes of Difficulty Learning to Read. Sousa also notes that some students struggle to learn to read even when all parts of the linguistic system are in-tact (2017). Non-linguistic causes of reading difficulties include poor sequential sound perception, impairments in the ability to hear differences in sound frequency, auditory functioning problems that make it difficult for students to discern noise and tones, poor motor coordination due to deficits in the cerebellum, the area that coordinates learned motor skills, and attention deficit/hyperactivity (Sousa, 2017). Each of these result in students struggling with learning to read due to difficulties in decoding auditory and visual information, and difficulties with executive functioning skills.

Understanding how the brain works, and specifically, what the brain must do to learn to read, is an arduous task. Advancements in functional magnetic resonance imaging and other medical breakthroughs are increasingly adding to our understanding of the complex nature of learning to read. I turn now to the research specifically addressing how to help students from whom learning to read is a challenge, particularly those who have not mastered this complex skill by the time they reach middle school.

Reading Intervention with Middle School Students

Research is clear that early intervention with students demonstrating a need for reading support is most efficacious (Chapman & Tunmer, 2003; Tunmer, 2008; Vaughn et al., 2011; Vaughn & Fletcher, 2012). Yet repeatedly, despite our efforts to ensure all

students are proficient readers by the time they leave elementary school, we see evidence that some students need continued support to achieve reading proficiency. Breckinridge Public Schools uses a Multi-tiered Systems of Support (MTSS) to support students and identify needs. According to the Breckinridge Public Schools website, MTSS provides an "evidence-based model of schooling that uses data-based problem-solving to integrate academic, communication, and behavioral instruction and intervention" (District Website, 2022). The goal of MTSS is to support students academically, socially, and emotionally, support differentiation of interventions to align with student needs, and build consistency throughout the district. MTSS is based on three tiers: strong universal teaching for all students (Tier 1), targeted instruction for students needing additional support (Tier 2), and intensive support for those students who do not respond to the strong Tier 1 and 2 interventions. With this model, middle school reading intervention is a Tier 2, or targeted, intervention.

While instruction for younger readers includes phonics, phonemic awareness, fluency, comprehension, and vocabulary, adolescent struggling readers need support to develop fluency, word study, vocabulary, comprehension, and motivation (Baye et al., 2019; Frankel et al., 2016, 2021). The 2022 Institute of Education Sciences Practice Guide (Vaughn et al.) offers four recommendations for providing reading interventions for adolescents. In the following section, I identify each of these recommendations while describing the steps teachers should take to enact these recommendations.

Best Practices

Recommendation #1: Build students' decoding skills so they can read complex multisyllabic words (Vaughn et al., 2022). To enact this recommendation, teachers should first identify students' ability to read words, and teach any sounds or sound combinations that students have not mastered. Next, teachers should help students learn a routine for reading multisyllabic words. Here, the panel notes that a single routine for breaking words into syllables that can be used across a variety of words is more effective than teaching several routines. As a third step, teachers working to build students' decoding skills should include spelling instruction. This encoding of sounds supports the decoding of sounds students must do when encountering unknown words in texts (Vaughn et al., 2022). A final step for this recommendation is to provide a variety of activities that allow students to practice reading multisyllabic words accurately and fluently.

Recommendation #2: Provide purposeful fluency-building activities to help students read effortlessly (Vaughn et al., 2022). Fluency instruction begins with the teacher establishing a purpose for re-reading texts. Research indicates that students will not only become more fluent readers, but that the repeated readings will also increase their ability to understand the text (Vaughn et al., 2022). A second step in developing fluency is providing direct instruction on reading with prosody. Prosody, the ability to read with appropriate rate, expression, pitch and pauses, helps readers make sense of what they are reading. The next step in fluency instruction is to ensure students regularly

read a wide variety of texts. This allows students to experience new vocabulary writing styles, which in turn allows them to read more fluently (Vaughn et al., 2022).

Recommendation #3: Routinely use a set of comprehension-building practices to help students make sense of the text (Vaughn et al., 2022). This recommendation can be broken into four specific parts. In Part A, teachers must take steps to intentionally build students' background knowledge and vocabulary, allowing them to understand what they are reading. This includes teaching words specific to the text, directly and explicitly teaching a few vocabulary students will encounter in the text, teaching students how to use context clues to infer the meaning of unknown words, and teaching students to identify and use morpheme knowledge to both read and make sense of unfamiliar words, and including instruction in Greek and Latin roots. Part B of this recommendation indicates teachers should routinely provide opportunities where students ask and answer questions while reading. In Part C, teachers should help students develop a routine that will help them understand the main idea of a shorter section of a text. Finally, with Part D, teachers help students develop self-monitoring skills, so that they can monitor their understanding as they read (Vaughn et al., 2022).

Recommendation #4: Provide students with opportunities to practice making sense of stretch text (i.e., challenging text) that will expose them to complex ideas and information (Vaughn et al., 2022). To enact this recommendation, teachers should carefully select text that is at or just above the upper band of students' independent reading levels, and then identify places within the text to stop and ask questions and clarify understandings. Teachers should also consider which words to teach explicitly,

and which words to leave for students to problem solve. In selecting these texts, teachers should gradually increase the complexity and length of the passages students will read, further supporting both students' persistence and confidence. The Panel recommends that teachers carefully and purposefully scaffold the reading of this text, allowing for more support initially, while fading this support as students gain confidence and skill. As a final part of this recommendation, teachers should equip students with electronic tools to continue reading stretch texts independently and individually. This includes the use of online dictionaries, as well as tools that include audio enhancements, allowing students to hear the text while they read. An important caveat here is that students are also looking at the text and reading. They are not passively listening to the text read for them. The panel also recommends that students have opportunities to discuss what they read when working independently (Vaughn et al., 2022).

Models

In a recent meta-analysis of small group reading interventions, Hall and Burns (2018) identified several contributing variables when looking at the efficacy of reading interventions. They found targeted intervention, rather than generic or comprehensive interventions, contribute to positive effects. They also found interventions led by researchers or graduate research assistants had stronger effects compared to those led by classroom teachers. This may be due to the number of tasks and decisions that require teacher focus. More surprisingly, Hall and Burns (2018) found small correlations between dose or duration of intervention and positive outcomes, and small effects for interventions for secondary students. Additionally, researchers find better effects for

small intervention sizes (groups of 2-5 students) compared to 1:1 intervention or interventions with larger numbers of students (Baye et al., 2019; Hall & Burns, 2018; Scammacca, Fall, et al., 2015; Vaughn et al., 2011).

While much has been written in regards to what students should be taught in reading intervention classes in middle school (Daniel et al., 2021; Hock et al., 2017; Kilpatrick, 2015; Slavin et al., 2011; Vaughn et al., 2022), and the size of the intervention groups, less is known about the actual delivery models of intervention. Research investigating length of interventions typically counts the number of intervention lessons students receive. This is sometimes referred to as the "dose" (Baye et al., 2019; Hall & Burns, 2018). Typically, this is computed by multiplying the number of classes by the number of minutes per class, and again by the number of weeks. Researchers often report total intervention minutes (or hours) as an indicator of dose. Baye and associates reported mixed reviews of providing additional doses of reading in middle school, with some studies indicating the benefits disappeared by the time students were in grade eight (2019). Additionally, this synthesis of research found no significant difference between interventions that provided an extra period of reading support and those that did not (Baye et al., 2019).

For my study, I am interested in evaluating the efficacy of reading intervention models in terms of minutes per day and total minutes per week, to better inform decision-makers regarding which model of intervention to employ in their buildings.

"At every point in our research — in our observing, our interpreting, our reporting, and everything else we do as researchers — we inject a host of assumptions. These assumptions are about human knowledge and assumptions about realities encountered in our human world. Such assumptions shape for us the meaning of research questions, the purposiveness of research methodologies, and the interpretability of research findings." (Crotty, 1998, p. 17)

Chapter 3

Methodology

This research study aimed to illuminate the effects of two different models of reading intervention used in middle schools in one large-sized urban school district in the Midwest. I used archival summary data including census data, MAP Growth Reading data, and student perception surveys to better understand the impact of two models of reading intervention used in grades seven and eight.

This chapter details the theoretical and conceptual frameworks that structured the study. After outlining the theoretical and conceptual framework, I provide detailed information about the research questions, data sources and collection, and analysis techniques. The next sections of the chapter provide a discussion of the logic of inquiry, a description of the research setting and participants, and issues related to research reliability and validity. In the final sections, I share researcher positionality, my relationship to the participants, and outline potential biases.

Research Design

This Illuminative Evaluation study used quantitative data and data analysis to explore the effects of two models of reading intervention used in seventh and eighth grades. Parlett and Hamilton (1972) first introduced the Illuminative Evaluation Model, a three-step process used in social science and educational research. In Illuminative Evaluation, the goal is to better understand an innovation. According to Parlett and Hamilton, this includes: "how it operates, how it is influenced by the various school situations in which it is applied; what those directly concerned regard as its advantages and disadvantages, and how students' intellectual tasks and academic experiences are most affected" (1972, p. 11). According to Parlett and Hamilton (1972), key components of Illuminative Evaluation are:

1. Total objectivity is unachievable.
2. Innovation is often in a constant state of change.
3. The learning milieu is a unique network of connected variables that include social, cultural, psychological, and institutional variables.
4. A goal of Illuminative Evaluation is to understand how changes in the learning environment impact student experiences.
5. Illuminative Evaluation is a general strategy rather than a specific methodological recipe.

Like a critical pragmatic paradigm, the research questions within Illuminative Evaluation drive the methods. Both the methodology and the theoretical framework rely on the ability to employ the best research methods to address the aims of the research

(Parlett & Hamilton, 1972; Shapiro & Reed, 1984). This flexibility allows the researcher to shine light on somewhat hidden or obscure research findings, allowing the researcher to understand the problem of practice from multiple perspectives (Parlett & Hamilton, 1972). Additionally, both Illuminative Evaluation and critical pragmatism attempt to represent different perspectives and opinions of thought, and to do so in ways that are perceived as fair by those being studied (Parlett & Hamilton, 1972; Shapiro & Reed, 1984).

The data collection I used was comprised of demographic descriptions of students enrolled in one of two reading courses in grades seven and eight. This summary data included race/ethnicity, gender, and participation in free and reduced meal programs. I originally planned to include qualification for special education services and qualification for English language instruction, but those were excluded as I lacked access to this data. Summary data was analyzed using descriptive statistics to better understand who was being served in the middle school reading intervention programs within the different models of intervention. This nominal data was disaggregated and compared to the total district population to understand who the students were in the different models of intervention. I looked for similarities and differences between the subgroups and the total district population to discern the similarities and differences between the populations.

Methodology: Evaluation

The aim of this research was to inform decision makers about the potential differing effects of the two reading intervention models used in this large-sized urban district in the Midwest. I aspired to move beyond a mere judgment of the effectiveness of

our reading intervention program based on a single viewpoint. I wanted to include the voices of our students enrolled in two different reading intervention models, and to do so framed within the costs and benefits of that enrollment for the students. In this way, I wanted to elevate the voices of students, with a keen eye on representing all voices, most especially those from historically marginalized populations. As it stands, students are the key stakeholders, often having interventions designed *for* them, experiencing interventions done *to* them, but rarely having the opportunity to share the impact of that intervention *on* them with decision-makers. Recognizing that we currently run different models of reading intervention, with sharp contrasts to the demographic groups of students served in each model, it is imperative that we ensure all students have equitable access to the programs that will best support their reading growth.

Evaluative research, a unique form of inquiry, seeks to understand the quality of a program or innovation from the perspective of multiple stakeholders (Anderson, 2016; Kushner, 2017). As such, evaluative research allows me to include both standardized assessment data and student perceptions. Given the two models of reading intervention, and the unique populations of students served in those models, I must intentionally employ a methodology that will allow me to contextualize the impact of the different models. Evaluation is different from assessment, for evaluation looks beyond a singular judgment of worth to better understand the complex nature of interventions (Kushner, 2017), while assessment, especially external accountability assessment, seeks to provide a verdict (Penuel & Shepard, 2016). Kushner, recognizing evaluation must go beyond "merit, worth, and significance" (2017, p. 8) frames the shift from a singular focus on the

program activities to the focus of the program within the particular context of the public community in which it is situated. This widening of the lens, to include not just the evaluation of the reading models, but the impact of the reading models on the students, the public community the model must serve, makes evaluation research an inclusive approach and a superior methodology for this study. Evaluative methodology is aligned with the inclusive nature of critical pragmatism as both seek to empower oppressed voices.

Rossi et al. define program evaluation as a "purposeful and systematic assessment of programs designed to improve social conditions and our individual and collective well-being" (2019, p. 1). Kushner describes evaluation research as "a process for arriving at judgements about public value, in a way that reveals the nature of the public" (2017, p. 8). Again, this allows evaluative methodologies to be inclusive and elevate the voices of marginalized populations.

Researchers caution that while programs are established to address social problems, most often the problems are of such a complex nature that they cannot be easily remedied (Rossi et al., 2019). This is due to the complicated nature of implementing effective social programs. The complex task of designing an effective intervention for a social program includes accurately understanding the social problem the intervention is attempting to address, designing, and implementing a workable plan, realizing the positive impact for the targeted population, and ensuring the intervention is cost effective. These researchers additionally caution that "intuitively plausible

interventions do not necessarily lead to better outcomes" (Rossi et al., 2019, p. 4), and sometimes well-designed programs have unintended negative consequences.

Evaluation research is especially suited to understanding the outcomes of an innovation in education or other social fields (Kushner, 2017). Using different models of reading intervention, where some students are enrolled in intervention for a full class period every day and others are enrolled in intervention for either a half class period daily or a full class period alternate days is an innovation. Evaluative research is a form of democratic inquiry, which shifts the focus from measuring and describing the qualities of an object or innovation, to those who are informed by the research (Kushner, 2017). As I, the researcher in this study, am not a decision maker in regards to which model of intervention to use for students in grades seven and eight, the study is focused on bringing effects of the intervention models into focus for the decision makers. This research inquiry seeks to illuminate additional aspects of the effects of different models of intervention and communicate those effects to decision makers in this district.

Method: Illuminative Evaluation

The specific method for this research was Illuminative Evaluation. According to Parlett and Hamilton (1972), Illuminative Evaluation is a particular form of evaluation that seeks to understand the innovatory program, specifically "how it operates, how it is influenced by the various school situations in which it is applied; what those directly concerned regard as its advantages and disadvantages; and how students' intellectual tasks and academic experiences are most affected" (1972, p. 11). With this method of evaluation, researchers attempt to bring to light the most noteworthy features of an

innovation, including the recurring important processes inherent to that innovation (Parlett & Hamilton, 1972). Through this process, the researcher seeks to illuminate what is working within the innovation and identify those elements that are impacting students in the manner intended. Additionally, researchers using this method can identify the unintended impact of the innovation. Of particular importance, Illuminative Evaluation allows the researcher to account for more subtle aspects of an innovation that are not identified or accounted for in traditional evaluation relying on psychometric and experimental methodologies (Gunio, 2021). Rather than trying to measure and make predictions about an innovation, the primary concern of Illuminative Evaluation is description and interpretation of the impact of the innovation (Parlett & Dearden, 1977) for decision makers.

According to Parlett and Dearden (1977), Illuminative Evaluation is a suitable method for understanding educational innovations when the innovation is defined by complex goals that are difficult to define, when innovations are heavily influenced by the local character or dominated by particular influences, or when the innovations are less suited to formalized evaluation designs due to lack of time, data, or certainty about the questions the evaluation will address.

In this research inquiry, I sought to identify the impact of two models of reading intervention. My goal was complicated by the distinct, local characteristics of each middle school and the demographic differences in student populations where these models were employed. Each building was situated within a unique context, formed in part by the confluence of the unique characteristics of the student populations they

served, the goals and leadership skills of building administrators as both leaders and decision-makers, the aptitudes, attitudes, and skills of teachers and staff members working in that building, as well as the influences of family and neighborhoods in which the buildings were located.

Innovations often have unintended consequences (Anderson, 2016; Kushner, 2017). From the outset, I had no way of knowing if unintended consequences were occurring, but Illuminative Evaluation afforded me the opportunity to identify them as they were revealed within the research, allowing these consequences to be illuminated for decision-makers. Unintended consequences include both positive and negative consequences, and both are important to consider when framing the costs and benefits of a particular model of reading intervention. Notably, this research aimed to uncover the hidden impacts of these different intervention models by including student perceptions. This critical step sought to include the voices of the students for whom the program was intended to serve

Presuppositions of Illuminative Evaluation

Illuminative Evaluation is based on four particular presuppositions (Parlett & Dearden, 1977). First, within Illuminative Evaluation, the researcher is not attempting to provide fully objective research. Researchers in this realm believe that all research is influenced by human thought and logic, and therefore, rather than seeking to distance the researcher from the research, Illuminative Evaluation seeks to understand the researcher within the context of the evaluation. This results in the researcher being both a knowledgeable insider and objective outsider (Shapiro & Reed, 1984). The richest results

are obtained when the researcher has intimate knowledge of the learning milieu in which the inquiry takes place (Parlett & Dearden, 1977).

Secondly, Illuminative Evaluation recognizes the complex relationship between reliability and validity and relevance (Parlett & Dearden, 1977). Notably, large scale standardized assessments tend to have higher reliability, especially when the items are posed as multiple-choice questions (Parlett & Dearden, 1977). However, this high reliability does not always indicate high validity or relevance. Reliability is the measure of how well the same scores would be obtained if measurements were repeated. Validity, according to Messick (1995) is the inference of meaning we attribute to a data set. The internal validity is a measure of how well assessment measures the intentions within the study participant set, while the external validity is the measure of how well the assessment measures the intentions outside the study population, or how well the study can be generalized (Messick, 1995).

Third, Illuminative Evaluation posits checks and balances throughout the research project. These can be thought of as rules rather than guidelines, and include ensuring participants have the opportunity to listen back to interpretations of the researcher, distributing early drafts of findings to samples of participants, positioning respected "devil's advocates" to interrogate the researcher's arguments, submitting arguments to group discussions, and triangulation of data to ensure all voices are included in the evaluation. In my practice, I have a network of colleagues, university professors, evaluation experts, and outside graduate students to check the assumptions of my claims.

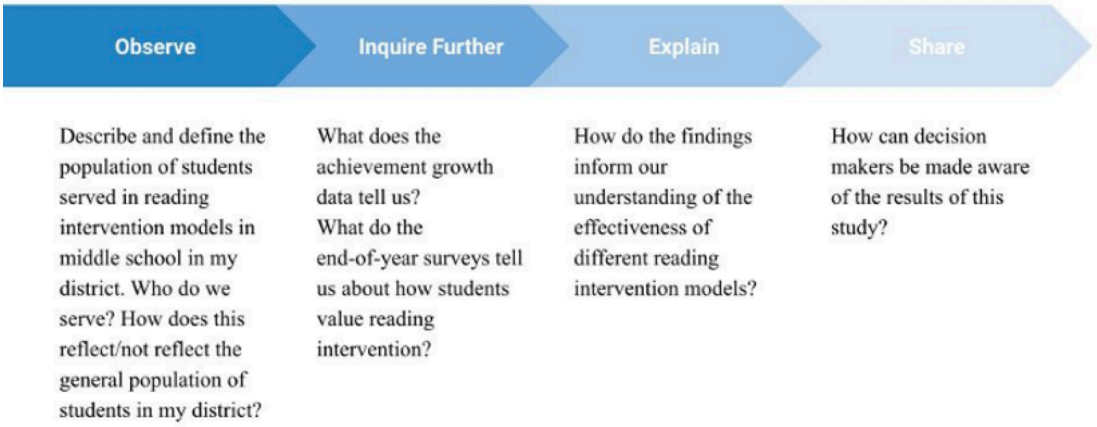
Fourth, Illuminative Evaluation assumes completely objective data cannot be attained, as throughout any study, the researcher is making decisions regarding which data to include, how it should be framed and interpreted, and what to do with missing information. For a myriad of reasons, single data points can never fully identify the limits of a student's understanding or abilities (National Research Council, 2001). Students may be distracted, tired, hungry. The learning milieu interacts with student outcomes (Parlett & Dearden, 1977). This recognition that total objectivity is unattainable allows (forces) the researcher to make their decision-making visible and open for interrogation by the readers.

While Illuminative Evaluation is a particular type of research, it is an open and flexible method rather than a prescribed recipe (Parlett & Dearden, 1977; Parlett & Hamilton, 1972; Shapiro & Reed, 1984). This flexibility is required, as it allows researchers to use the research problem to identify the methods (Shapiro & Reed, 1984). In this way, "the problem defines the methods, not vice versa" (Shapiro & Reed, 1984, p. 434). As I considered my research goals, I sought to illustrate the impact of the different models of intervention on our middle school reading intervention students. Doing so gives decision-makers additional information to use in considering which model to employ at their building.

Figure 10 provides a visual roadmap of how the research was conducted, and how this research maps onto the Illuminative Evaluation method.

Figure 10

Conceptual Framework



Research Questions

In seeking to increase the efficacy of our intervention programs, we must also be aware of both the intended and unintended consequences of the models we impose (Gunio, 2021). By illuminating the impact of the current reading intervention models used in our middle schools, decision makers have a fuller picture of what is happening in regards to reading intervention, allowing them to make better informed decisions when selecting an intervention model to be used.

Focus Questions

1. What are the demographic profiles of students enrolled in reading intervention in grades seven and eight?
    a. How does the demographic profiles of the subgroup of students enrolled in reading intervention in grades seven and eight compare to the larger population of students enrolled in Breckinridge Public Schools when looking at race/ethnicity, gender, and participation in free/reduced meals.

2. What are the differences in gains for students enrolled in the traditional reading intervention and reading lab reading intervention classes?
3. How do students perceive the value of inclusion in reading intervention courses in grades seven and eight?
    a. Are there differences in student perceptions of value between the traditional and reading lab models
    b. Are there differences in student perceptions of value between the traditional and reading lab models when data is disaggregated by race/ethnicity, or gender?

Null Hypotheses

The hypotheses to test in this study include:

$H_0$1: There is no statistically significant difference between the population of students enrolled in reading intervention (either model) and the total population of students enrolled in Breckinridge Public Schools when disaggregated by race/ethnicity, gender, participation in free/reduced meals.

$H_0$2: There is no statistically significant difference between the traditional and reading lab models of intervention in regard to student growth as measured by the MAP Growth Reading assessment.

$H_0$3: There is no statistically significant relationship between the traditional and reading lab models of intervention in regard to student growth as measured by the MAP Growth Reading assessment when the population

of each model is disaggregated by race/ethnicity; participation in free/reduced meals; and gender.

$H_0$4: There is no statistically significant relationship between student survey results and specific reading intervention model enrollment.

$H_0$5: There is no statistically significant relationship between student survey results and specific reading intervention model enrollment when enrollment is disaggregated by race/ethnicity; and gender.

Research Setting and Participants

The District

The large public school district in the Midwest served nearly 42,000 students (about twice the seating capacity of Madison Square Garden) in over sixty different programs. This is the second largest district in this midwestern state. In 2022-2023, the student population included 24,899 students. Specific distribution by race/ethnicity is summarized in Table 4. The district serves a diverse population of students, and this diversity is summarized in Table 5.

The Middle Schools

This large, midwestern school district includes twelve middle schools serving students in grades 6-8. For the purposes of this study, I eliminated one building from the data, as this building employs specific teachers and accepts particular students for behavioral support. The teachers in this building work from an entirely different model for curriculum and instruction. Of the twelve middle schools included in the study, five

Table 4

Ethnic Distribution of Breckinridge Public School Students; October, 2022

Race/Ethnicity	Number of Participants	% of Total Population
White	24,899	62.3
American Indian/Alaskan Native	251	0.6
Black or African American	2,880	7.2
Asian	1,862	4.7
Hispanic/Latino	6,314	15.8
Native Hawaiian or Pacific Islander	39	0.1
2 or more races	3,712	9.3

*New federal identifiers are being used so the distribution across groups may vary from previous years.

Table 5

Distribution of Total Student Enrollment by Various Identifiers; October, 2022

Category	Number of Participants	% of Population
Free/Reduced Meal Program Participation	19,069	47.7
Gender		
Female	19,348	48.4
Male	20,609	51.6
Qualifies for Special Education	6,209 (K-12)	15.5
English Language Learners	2,472	6.2
Identified as Gifted	5,798	14.5
Mobile Students (2021-22)	3,003	7.3

received Title-1 funding, and three of these used a reading lab model of reading intervention. All seven non Title-1 buildings used a traditional model of reading intervention.

The Participants

Table 6 provides a further contextualization of Breckinridge School, showing the distribution of middle school students across race/ethnicity, gender, participation in the free and reduced meal program, and participation in English Learner or Special Education programs. This distribution is disaggregated between Title-1 and non Title-1 buildings, allowing readers to better understand the population of students served.

Data Sources and Collection

Measure One: Demographic Data

For measure one, I collected archival summary demographic data for students enrolled in two reading intervention courses in grades seven and eight during the 2022-2023 school year. This summary data was the same as the summary data reported to the State Department of Education, and was provided to me by the Assessment and Evaluation team within my district. The demographic data is self-reported by families on the annual student census forms collected each fall.

Measure Two: Test Score Data

For measure two, I collected archival summary data of Fall and Winter 2022 MAP Growth Reading assessments, using the RIT scores to measure growth. This summary data was also provided by the Assessment and Evaluation team in my district.

Table 6

Distribution of Middle School Students (Grades 6-8) By Various Identifiers (Oct 2022)

	Title-1 Building		Non Title-1 Building		Total Middle School Population	
Identifier	*N*	*%*	*N*	*%*	*N*	*%*
Race/Ethnicity	3,430	36.8	5,889	63.2	9,319	100.0
Students of Color	1,857	52.8	1,658	47.2	3,515	37.7
White Students	1,573	27.1	4,231	72.9	5,804	62.3
Gender	3,430	36.8	5,889	63.2	9,319	100.0
Female	1,646	36.6	2,850	63.4	4,496	48.2
Male	1,784	37.0	3,039	63.0	4,823	51.8
Participation In Free/Reduced Meal Program	3,430	36.8	5,889	63.2	9,319	100.0
Yes	2,555	56.3	1,980	43.7	4,535	48.7
No	875	18.3	3,909	81.7	4,784	51.3
Identified as English Learner	[a]	[a]	[a]	[a]	9,319	100.0
Yes	[a]	[a]	[a]	[a]	279	3.0
No	[a]	[a]	[a]	[a]	9,044	97.0
Participation In Special Education	3,430	36.8	5,889	63.2	9,319	100.0
Yes	760	47.6	838	52.4	1,598	17.1
No	2,670	34.6	5,051	65.4	7,721	82.9

[a] English learner data not available by building.

Measure Three: Survey Data

For measure three, I collected archival summary data of end-of-year student surveys. I looked for patterns and trends in the responses to identify how students perceived their enrollment in reading intervention. Most importantly, I sought to

understand how students view the benefits and costs of the intervention. This summary data, too, was provided by the Assessment and Evaluation team in my district.

Data Analysis

Illuminative Evaluation Step #1: Observe

In Step 1 of Illuminative Evaluation, the researcher observes the innovation or intervention. Here the researcher is getting a sense of the program and the "learning milieu". Illuminative Evaluation methods recognize that innovations are always enacted within the context of the learning environment (Gunio, 2021). This learning milieu comprises the "network or nexus of cultural, social, institutional, and psychological variables" (Parlett & Hamilton, 1972, p. 13). The unique interactions of each of these domains creates a unique learning environment for students and teachers (Parlett & Hamilton, 1972).

At this stage, I used descriptive statistics to define the population of students enrolled in reading intervention in the fall of the 2022-2023 school year. As a matter of practice, all schools in my state record demographic data. I used October 1 data, which allows for consistent measures to be taken for year-to-year comparisons, and ensured that no student was counted in two districts' data sets.

The data collection at this stage included gathering summary demographic descriptions of students enrolled in one of two reading courses in grades seven and eight. This summary data included the following: grade level, race/ethnicity, gender, and participation in free and reduced meal program. Summary data was analyzed using

descriptive statistics to better understand who was being served in the middle school reading intervention programs within the different models of intervention.

To test Null Hypothesis #1, I disaggregated the information to better understand who the students were in the different models of intervention. To discern the similarities and differences between the populations, I looked to see how the reading intervention enrollment reflected the total population of students in grades seven and eight. I compared the percentages of each of the independent variables to the total grade seven and eight population.

Student free and reduced meal program participation was provided by Nutrition Services and other demographic data was collected for every student in our district, and is reported by parents on annual census forms. I obtained archival summary data of these demographics through the Assessment and Evaluation team.

Illuminative Evaluation Step #2: Inquire Further

In this second step of the research, I collected summary MAP Growth Reading data and ran an independent *t*-test to identify if the mean growth of the traditional and reading lab models differ. An independent *t*-test allows researchers to see if differences exist between the two different reading intervention models (Frey, 2016). The results of this analysis was considered significant if the *p*-value was less than the critical *p*-value of .05. The independent *t*-test assumed that the variance in means between the two groups was similar.

Computing the *t*-test allowed me to identify the significance of variance between these two groups (Frey, 2016). The independent variable was the reading intervention

model to which students were assigned, and the dependent variable was the growth realized from fall - winter MAP Growth Reading assessments.

With this analysis of variance completed, I moved to step two, which was a two-by-two Analysis of Variance. Here, I identified whether any interaction existed between the model (lab vs. traditional) and the separate categories in relation to realized growth according to the MAP Growth Reading scores. Now the independent variable, the reading model used, was further broken into a second level to include race/ethnicity (students of color or white), gender (female or male), and participation in free/reduced meal program (yes or no). The dependent variable remained the reading outcome or growth as measured by the fall-winter MAP Growth Reading scores. Tables 7, 8, and 9 represent this Analysis of Variance.

Table 7

Race/Ethnicity and Model of Intervention

Students of Color X Traditional Model	Students of Color X Reading Lab Model
White Students X Traditional Model	White Students X Reading lab Model

Table 8

Gender and Model of Intervention

Female X Traditional Model	Female X Reading Lab Model
Male X Traditional Model	Male X Reading Lab Model

Table 9

Free/Reduced Meal Program Participation and Model of Intervention

Free/Reduced Meal Program Participation X Traditional Model	Free/Reduced Meal Program Participation X Reading Lab Model
No Free/Reduced Meal Program Participation X Traditional Model	No Free/Reduced Meal Program Participation X Reading Lab Model

With the summary data obtained, I next looked to identify the main effects. I wanted to see if race/ethnicity was more predictive of growth than the specific intervention model. Alternatively, I wanted to know if the research showed no real difference in the outcomes as measured by the MAP Growth Reading scores, in which case decision makers may want to consider using the reading lab model across all middle school buildings.

With these analyses completed, I moved to the next phase of the study. Here I collected summary data of the annual student end of year surveys. Again, using descriptive statistics with the students' self-reported demographic data, I first sought to understand how the summary data matched the original descriptive statistics from step one. I noted who was represented, who was missing from the data, and considered why those students' input was missing. Next, I conducted independent samples *t*-tests to analyze the variance between the reading lab and traditional models of intervention, again looking for the critical *p*-value to be less than .05. I then used two-by-two Analysis of Variance to see if any interaction impacted the students' perceptions of the value of reading intervention enrollment, noting a significant interaction would be represented by a critical *p*-value below .05. The specific ANOVAs planned are represented in

Tables 10, 11, and 12. After looking at the summary data, I realized we had no way of collecting information regarding free and reduced meal program participation, so this analysis was impossible to conduct. Additionally, teachers reported student confusion over the identification of race/ethnicity. With no method of checking the data, I decided to disregard this planned analysis as well, leaving only the analysis of variance for gender (female, male) and reading model (reading lab, traditional).

Table 10

Race/Ethnicity and Model of Intervention

Students of Color/Traditional Model	Students of Color/Reading Lab Model
White Students/ Traditional Model	White Students/Reading Lab Model

Table 11

Free/Reduced Meal Participation and Model of Intervention

Free/reduced Meal Program Participation/Traditional Model	Free/Reduced Meal Program Participation/ Reading Lab Model
No Free/Reduced Meal Program Participation/ Traditional Model	No Free/Reduced Meal Program Participation/ Reading Lab Model

Table 12

Gender and Model of Intervention

Female/Traditional Model	Female/Reading Lab Model
Male/ Traditional Model	Male/Reading Lab Model

* Students who did not identify as either male or female, or who chose not to say on the survey were not included in the analysis.

Illuminative Evaluation Step #3: Explain

Step 3 of Illuminative Evaluation moves the researcher to explain the findings (Parlett & Hamilton, 1972). As such, this became Chapter 4 of my Dissertation. Once I analyzed the data, I carefully considered what that analyzed data said about the effects of reading intervention for middle schoolers in my district. I looked for themes and patterns reflected in the analysis, to further reveal causal relationships that enabled me to situate the data within the broader question of the impact of reading intervention models in my district. I interpreted the results of the statistical analysis and contextualized the data back within the learning milieu, using student perception survey results to further provide definition to the picture that emerged from the study.

I then considered how to best describe the findings so decision makers have a better understanding of the effectiveness of the models of reading intervention in middle schools in our district. Adding in the student perception survey data further illuminated the impact of reading intervention models, and provide additional information for decision makers.

Decision to Include Quantitative Methods/Logic of Inquiry

According to Creswell and Creswell (2018), researchers must answer three questions to determine whether quantitative methods are appropriate. These include:

1. Does the researcher want to identify what or how particular factors (independent variables) influence an outcome (the dependent variable)?
2. Does the researcher seek to identify the utility of an intervention?
3. Does the research want to identify predictors of outcomes?

For this inquiry project, I wanted to illuminate how particular variables affected an outcome (Research Question #2). I also wanted to know how students perceive their intervention experience, and if any notable differences existed between those enrolled in the reading lab and the traditional intervention model.

Using a quantitative approach helped me understand the findings of research question one. Using descriptive statistics, I illustrated who we were serving in middle school reading intervention, and compared this to the total population of students served in the entire district.

To address research question three, I used summary survey data to understand how students perceive reading intervention — both the benefits and the costs. I looked for patterns in student responses, and looked specifically for references to what was gained and what was lost when students are enrolled in reading intervention courses. I disaggregated the data by reading model, to see if any additional patterns emerged in student responses.

A quantitative approach was best suited to address the research aims and objectives of my study, as my focus was on illuminating the impact of reading intervention models for district decision makers. While qualitative methods would allow me to investigate students,' teachers, and district leader perceptions of the efficacy of middle school reading intervention programs, I believed quantitative data would speak more strongly to the decision-makers and stakeholders I wanted to inform. In order to garner the attention of decision makers more fully, I made the intentional decision to use quantitative data for this study, as this was the "language" that would most likely be

heard. I countered this by seeking feedback on my conclusions with colleagues within the Secondary English Language Arts team, the Assessment and Evaluation team, with middle school reading intervention teachers, and with classmates within my cohort of CPED students.

Research Reliability, Validity, and Generalizability

Issues of validity have been discussed for decades (Kane, 1990; Messick, 1995; Plano Clark & Ivankova, 2016; Shadish et al., 2002). Messick writes, "validity is broadly defined as nothing less than an evaluative summary of both the evidence for the actual — as well as potential — consequences of score interpretation and use" (1995, p. 742). Research indicates two threats to construct validity: "construct underrepresentation" (Messick, 1995, p. 742), when the assessment does not include all relevant dimensions it aims to measure, and "construct-irrelevant variance" (Messick, 1995, p. 742), which indicates the assessment may be too broad and include extraneous variables that are irrelevant to the concept being studied and whose inclusion may lead to false, weak, or misleading conclusions. Construct irrelevant variance may also include items that are so easy, they falsely inflate the results, or items that are so difficult they falsely deflate the results (Messick, 1995).

Kane (1990) implores us to critically analyze the interpretations and assumptions we make from data, and ensure that those interpretations and assumptions are strong enough to be valid. Still, one must analyze test content and procedures, as we can discredit some inferences based on these two more obvious criteria. Kane (1990) wants propositions to be made visible, so that the reasoning leading to those propositions can be

interrogated and analyzed for plausibility. Of particular interest is Kane's claim that one can never fully assert or prove validity, as it will always be based on assumptions and new interpretations and new research on the theories from which they arise (Kane, 1990). In this way, researchers, teachers and decision-makers must be continually alert to the ways in which their own biases inform their interpretations of assessment results, and lead to potentially invalid interpretations.

Within the Illuminative Evaluation model, the researcher is expected to carefully account for the reliability and validity of results (Parlett & Dearden, 1977). Validity is achieved by carefully interrogating assumptions and inferences (Kane, 1990; Messick, 1995; Parlett & Dearden, 1977). Having strong validity is no assurance that reliability has also been achieved, and it is possible for an instrument to have strong validity and weak reliability. However, researchers require minimal levels of reliability be achieved in order to move further with a study. Reliability is the measure of how well an instrument will produce comparable results in different situations (Roberts & Priest, 2006). With this in mind, I turn now to the specific issues of reliability, validity, relevance, and generalizability for each of the measurement tools used in this dissertation.

Measure #1: Demographic Data

Demographic data came from annual self-reported forms collected every fall from each family in the school district. This data is reported annually each fall to the State Department of Education. As this information was self-reported, I can only surmise that the information was accurate and reliable. Since I included the entire subset of participants in the traditional and reading lab model of reading intervention, the data is

highly valid and directly relevant to the decision makers I wish to inform. For comparison, I used district (grades seven and eight) summary demographic data to better understand who was served in reading intervention in each model.

I recognize that while I am using the entire population in my study, when I disaggregated the data I moved to increasingly smaller numbers of participants, and the reliability of my results diminished. To address this concern, I intentionally chose to disaggregate the data to only two levels to avoid small numbers that could inflate or deflate mathematical calculations. Additionally, while the study was parametric, the relatively small size of the data sets made population sampling unnecessary. With this, I am confident I did not distort my data set due to sampling error and that the results are relevant to my specific population.

Again, I assume this data to be valid and reliable. I report the findings, so others may compare their own district demographics and determine generalizability. Generalizability, however, is not a concern for me, as my greatest concern is how the study informs decision-makers within my district.

Measure #2: MAP Reading Conditional Growth Index Scores

The use of MAP Growth Reading scores gives me confidence in the realized growth of reading intervention students as identified by the assessment. Students completed the assessments within a three-week period across the district in both the fall and winter testing sessions, ensuring that time between assessments was minimally different.

The Measure of Academic Progress is a computer adaptive test given up to three times per year in our school district. Norm data includes 2.3 million students (about twice the population of New Hampshire) from 32 states across the United States (Thum & Kuhfeld, 2020). Validity of the Measure of Academic Progress (Thum & Kuhfeld, 2020) includes both curricular and criterion related evidence. MAP was correlated to Iowa Test of Basic Skills (ITBS) and the Standford Achievement Test, 9th Edition (SAT9), with concurrent validity coefficients ranging from .78-.88 (Thum & Kuhfeld, 2020).

This assessment includes three sets of reliability measures: marginal, test-retest, and conditional standard errors of measurement (CSEMs) for reading and math. The norms were updated as recently as 2020.

- Marginal reliability for grades 2-10: .92-.96
- Test-retest reliability: .77-.94
- CSEMs: small

Measure #3: Student Perception Surveys

The end-of-year student perception surveys are highly valid and relevant to the study, though perhaps less reliable. Yet these student voices were an integral part of this Illuminative study, and allowed me to describe the impact of our reading intervention models more fully. I am acutely aware that district leaders design curriculum and assessments *for* these students, assign the intervention class *to* the students, and give little attention to how *the students* are experiencing that intervention. As I worked to include the students' voices, I increased the relevance of the evaluation, as the students are an integral part of the reading models. I wanted to illuminate the impact of enrollment in

reading intervention courses more fully by including student perception data. I am comfortable with the ambiguity concerning reliability with this data set. Future research might seek to conduct qualitative or mixed method research, using semi-structured interviews to understand and frame the experiences of students in their own voices and to triangulate the data more deeply.

Researchers are aware that the use of qualitative data may reduce reliability (Creswell & Poth, 2018), as what is shared on a survey by an individual is also influenced by confounding factors such as mood and motivation. This must be recognized, and to the best of my ability, I reported these extraneous variables as they were shared with me by teachers. Given that I was looking at summary data, I was unable to provide more than construct validity.

I addressed validity issues of the student perception surveys by sharing draft versions of the final dissertation to members of the Assessment and Evaluation team within my district, sharing draft versions of the results and discussion with members of the Secondary English Language Arts team. Additionally, I remained open to interrogation of my findings to my dissertation committee, ensuring that inferences I formed were logical.

Finally, one of the “rules” of Illuminative Evaluation is the reading back of notes taken by the researcher to those she interviews. I did access individual information, and was not able to or need to check my generalizations against what students intended to say on the survey.

Researcher Positionality/Reflexivity Statement

An important assumption of Illuminative Evaluation research is the recognition of the dual roles the researcher plays in conducting this type of research, positioned as both a knowledgeable insider and an independent outsider (Shapiro & Reed, 1984).

My role as the teacher leader positioned me as a knowledgeable insider. I was charged with designing curriculum and assessments for the reading intervention classes, and with training teachers and coaching them to enact that curriculum with fidelity to student learning. I designed the daily lessons used in the reading intervention classroom in grades seven and eight. I provided ongoing professional development through scheduled learning sessions which I facilitated and through regular classroom visits. In the course of a school year, I typically saw every reading intervention teacher at least three times. I often saw teachers new to the profession or new to the assignment monthly or more frequently, helping them to make sense of what, why, and how to instruct the students enrolled in reading intervention classes. I worked with a sense of urgency to develop the capacity of all teachers, so every student in reading intervention in middle school had the best opportunity to develop their reading skills.

Through this evaluative research, I was also an independent outsider. I was not present in every classroom every day, and I recognize the impact of the learning milieu on both teacher development and student progress (Parlett & Hamilton, 1972). Through this research, I was able to step out of the role of curriculum writer and developer and move into the role of observer, analyzer, questioner, and describer (Shapiro & Reed, 1984).

As I am accessed only summary data, I was able to maintain the professional working relationship with my team of teachers. I was looking to evaluate the reading models, not the teachers nor students, and I was specific and intentional about this messaging as I conducted the study.

Relationship to the Participants

When I began this journey, my role as the middle school reading intervention teacher leader was one of tremendous responsibility but little actual power or authority. While I was tasked with making many decisions, I had little control over how those decisions were acted upon in classrooms. I was rarely asked to consult with principals regarding a particular intervention model to use. As such, I recognized that my job title offered only a superficial position of power. Still, it is important I report my experiences and biases for my readers to interrogate my findings. In this section, I outline four potential biases and outline how I guarded against bias in my research. While writing the results of my study, I moved to a different position in my district, now working on assessment and evaluation district-wide.

Potential Biases

One bias I guarded against is the idea that more minutes in intervention would ultimately lead to more robust gains in literacy proficiency. This follows logic, as one could expect twice the minutes of an intervention would result in double the gains. I guarded against this bias through careful collection and analysis of fall and winter MAP Growth Reading RIT scores and through my work with the district Assessment and Evaluation team. I also recognized the law of diminishing returns, an economic principle

that states that when other variables remain constant, the profit of a particular investment cannot continue to increase (Editors of Encyclopedia Britannica (The), 2023). I recognized thresholds for time and attention to intervention might exist, and that minutes beyond that threshold might yield diminishing returns.

Another bias I recognized is the belief that literacy intervention is good for everyone. In preparation for this study, I developed a heightened awareness of the costs of middle school reading intervention to students, schools, and our district. While in the past I believed that intervention "would not hurt" students, I have come to appreciate Newton's 3rd Law of Motion, which states that for every action, there is an equal and opposite reaction. We must guard against unnecessary enrollments in intervention, for the students ultimately pay the largest cost in lost opportunities. These costs include opportunity to enroll in other academic connection courses, loss of agency, and loss of self-esteem as they feel the weight of the "struggling reader" label. Throughout the analysis and discussion, I guarded against the belief that literacy intervention will always be a positive experience.

As a researcher, I also recognized that most of the reading intervention teachers working in buildings using the reading lab model did not attend my professional learning sessions, and often lacked knowledge about literacy development and pedagogy. Most of the teachers in reading lab schools had another primary teaching position — typically, English or special education. I did not have regular opportunities to interact and support these teachers. Whether due to unfamiliarity from lack of opportunity, a feeling of insecurity, or a lack of time to devote to improving practices for this single class period, I

found it difficult to be “invited” into these classrooms. As I analyzed results, I kept this in mind, and considered if any of the differences found between the groups might be due to differences in knowledge and experience teaching middle school reading intervention, an important part of the learning milieu as noted by Parlett and Hamilton (1972).

Finally, others may believe that I had a personal stake in recruiting and maintaining elevated levels of enrollment in reading intervention classes, as my job literally hinged on students being enrolled in intervention. However, helping students develop their literacy skills was and remains my primary motivation, not maintaining my own job status. While I am passionate about developing the literacy proficiency of our middle school students, if it means all children are able to read, I will happily move on to other work within the school system.

Research is formalized curiosity. It is poking and prying with a purpose.

(Hurston, 1995)

Chapter 4

Presentation of Results

Chapter 4 presents quantitative data to address the three research questions framed in this dissertation. These include:

RQ #1: What are the demographic profiles of students enrolled in reading intervention in grades seven and eight?

RQ #2: What are the differences in gains for students enrolled in the traditional reading intervention and reading lab reading intervention classes?

RQ #3: How do students perceive the value of inclusion in reading intervention courses in grades seven and eight?

I present a combination of descriptive and inferential statistics used to answer each research question. In all cases, I used archival summary data of students enrolled in Breckinridge Public Schools in grades seven and eight during the 2022-23 school year. I analyzed percentages and frequencies of demographic data, MAP Reading Conditional Growth Index summary data, and summary student end-of-year perception survey results. Each analysis process and result are presented in the following sections, organized by Research Question.

Defining the Population: RQ #1

To address research question #1*: What are the demographic profiles of students enrolled in reading intervention in grades seven and eight?* I obtained archival summary demographic data for students enrolled in reading intervention in grades seven and eight during the 2022-2023 school year. Using descriptive statistics, I identified the total population of students in grades seven and eight, as well as the total population of students served in reading intervention in grades seven and eight. I then calculated the percentage of the total population of students in reading intervention to compare populations against the total group of seventh and eighth graders, disaggregating each of these by race/ethnicity, gender, and participation in the free and reduced meal program.

I also made comparisons between Title-1 and non Title-1 enrollments, as this is frequently reported by principals and teachers cited as a confounding variable when looking at student growth. Title-1 is a federal designation given to schools serving high populations of students living in poverty. The percentage of students in poverty is determined by free and reduced meal program participation. While federal rules allow flexibility for districts to determine individual building status for schools serving between 40% -70% students in poverty, all schools serving 75% or more students in poverty are required to be designated Title-1 buildings. At Breckinridge Public Schools, middle schools serving 60% or more students who participate in the free and reduced meal program are designated Title-1 buildings. While this is reviewed annually, currently five of the twelve middle schools district-wide are deemed Title-1 buildings (District Federal Programs Supervisor, personal communication, September 9, 2023). During the 2022-23

school year, the reading lab model is only used in Title-1 buildings, though not all Title-1 buildings use this model.

To begin, I looked at the summary demographic data showing the total number of students enrolled in reading intervention in grades seven and eight, and compared this to the enrollment in Title-1 and non Title-1 buildings. Then I disaggregated the summary data further to identify if differences exist between the reading lab and traditional model of reading intervention regarding Title-1 enrollment. Frequencies and percentages are summarized in Table 13.

Table 13

Enrollment Disaggregated by Model and Title-1 Designation

	Title-1		Non Title-1		Total District (Gr. 7-8)	
Reading Intervention Enrollment	*N*	*%*	*N*	*%*	*N*	*%*
Reading Lab Model*	626	80.4	0	0	626	48.4
Traditional Model*	153	19.6	514	100	667	51.6
Total in Reading Intervention	779	100	514	100	1,293	20.1

Note. Reading Lab and Traditional Model are explained in Operationalized Definitions.

I began my analysis by looking at the summary demographic data through the lens of national current understandings about who is typically served in middle school reading interventions. With an understanding of the layered needs of students living in poverty, I wanted to identify any particular patterns in the data that would better explain the phenomenon of seeing so many more students reading below grade level within this

particular population. Additionally, I often experienced a defensive stance whenever I pushed teachers to consider their lackluster classroom expectations. I was weary of being told, “This is a Title-1 building”, or “My students can’t. . . .” I wanted to understand in what ways my district mirrored the national research, and where my district might differ. I began the analysis by working through the largest funnel, disaggregating our reading intervention population into those attending Title-1 and non Title-1 buildings. I hoped that by doing so, I would be able to better understand the effectiveness of our intervention for this most vulnerable population, and identify any disparities in access to resources and/or opportunities that might interact with or influence student achievement.

Overall, one-fifth of the students in grades seven and eight (20.1%) were enrolled in reading intervention. Students attending Title-1 buildings where the reading lab model was employed were four times more likely to be enrolled in reading intervention compared to students attending Title-1 buildings where the traditional intervention model was used. While the breakdown between reading lab enrollment and traditional intervention enrollment is nearly split district-wide, Title-1 buildings using the reading lab model enrolled the highest percentage of students in reading intervention. Yet, fewer than one-half of the students (48.4%) in reading intervention were enrolled in the reading lab model. The traditional model served more students (51.6%) than the reading lab model. Just under one-fifth of the students (19.6%) in Title-1 buildings were enrolled in the traditional intervention model. This indicates the Title-1 buildings using the traditional model of intervention are more closely aligned to the district wide percentage of 20.1%.

Population Disaggregated by Race/Ethnicity

Recognizing that poverty is confounded (and sometimes systemically reproduced) by systems of oppression that prevent families from historically marginalized populations from moving out of poverty, I next sought to understand the reading intervention population in light of their racial/ethnic membership. I wanted to determine whether or not this would be a confounding variable when looking at achievement data. I disaggregated demographic data to show frequency and percentage of student membership in race/ethnicity groups as designated by the U.S. Census Bureau. This information is self-reported by parents/guardians at the beginning of each school year. The results are summarized in Table 14. The specific distribution of students by each race/ethnicity is represented in light gray and parentheses.

I collapsed the categories for race/ethnicity into two main categories: Students of Color and White, to avoid misinterpreting small population percentages. The data is summarized in Table 15.

Out of the total population of students enrolled in grades seven and eight, 38.2% identified as Students of Color, while nearly two-thirds (61.8%) identified as White. Over one-fourth (28.7%) Students of Color were enrolled in reading intervention. Conversely, fewer than one-sixth (14.8%) of the White students were enrolled in reading intervention. In summary students of color are twice as likely to be identified for reading intervention as their White peers.

Table 14

Intervention Enrollment Disaggregated by Specific Race/Ethnicity Compared to Total Intervention Enrollment

	Total Grade 7, 8 Enrollment		Reading Intervention Enrollment Collapsed to 2 Groups
Race/Ethnicity	*N*	%	%
Students of Color*	2,454	38.2	54.5
American Indian or Alaska Native	(50)	(0.8)	
Asian	(264)	(4.1)	
Black or African American	(484)	(7.5)	
Hispanic	(1,038)	(16.1)	
Native Hawaiian or Other Pacific Islander	(--[a])	(0.1)	
Two or more	(614)	(9.6)	
White	3,976	61.8	45.5
Total grade 7, 8 population	6,430[2]		

**Note*. Actual frequencies and percentages of each racial/ethnic group are shown in the parentheses.
[a] Reflects fewer than ten; risks of identification prevent me from reporting the actual number.

[2] Total population varies between 6,430 and 6,431 students. This is likely due to a reporting error. Any and all statistical values are maintained.

Table 15

Intervention Enrollment Disaggregated by Race/Ethnicity Compared to Total Intervention Enrollment

Race/Ethnicity	Reading Intervention Enrollment as Part of Total Enrollment	
	N	*%*
Students of Color*	705	28.7
White	588	14.8
Total grade 7, 8 population	1,293	20.1

**Note*. Disaggregation was limited to 2 levels due to small population sizes.

In Table 16 I disaggregated the archival demographic summary data by race/ethnicity (Students of Color and White) for each model of intervention to identify any differences in these populations.

Table 16

Reading Intervention Enrollment Disaggregated by Model and Race/Ethnicity

Race/ Ethnicity	Reading Lab Title-1		Traditional Title-1		Traditional Non Title-1		Total Reading Intervention		Total Grades 7, 8	
	N	%	*N*	%	*N*	%	*N*	*%*	*N*	%
Students of Color*	399	63.7	83	54.3	223	43.4	705	54.5	2,454	38.2
White Students	227	36.3	70	45.8	291	56.6	588	45.5	3,976	61.8
Total	626	100	153	100	514	100	1,293	100	6,430	100

Students of Color, representing over one-third (38.2%) of the total population of seventh and eighth graders, made up the majority of students enrolled in the reading lab (63.7%) and traditional model Title-1 populations (54.3%) served in reading intervention. When looking at traditional non Title-1 enrollment, Students of Color continued to be over-represented, as they made up 43.4% of the population for this subgroup. In all cases, Students of Color were over-represented in reading intervention.

I disaggregated frequencies and percentages of students enrolled in reading intervention by gender to identify any differences in these populations. I then disaggregated the population of students enrolled in reading intervention by gender and model of intervention. The data was compared to the total population of students in grades seven and eight and is summarized in Table 17.

Table 17

Enrollment Disaggregated by Gender and Intervention Model

	Reading Lab		Traditional Title-1		Traditional Non Title-1		Total Intervention		Total Enrolled Grades 7, 8	
Gender	*N*	%	*N*	%	*N*	*%*	*N*	*%*	*N*	%
Female	280	44.7	69	45.1	216	42.0	565	43.7	3,147	48.9
Male	346	55.3	84	54.9	298	58.0	728	56.3	3,283	51.1
Total	626		153		514		1293		6,431	

In the fall, the distribution of males and females in the total enrollment at grades seven and eight was nearly evenly split, with slightly less than one-half (48.9%) female, and over one-half (51.1%) male. More males were enrolled in the total population of

seventh and eighth graders. Likewise, more males were enrolled in reading intervention compared to females.

As shown in Table 17, more males were enrolled in reading intervention compared to females, regardless of the model of intervention. Additionally, the proportion of males to females in each model was aligned to the proportion of females and males served in reading intervention overall. These proportions, however, differ from the total population of females and males in grades seven and eight, with slightly higher numbers of males served in reading intervention.

Population Disaggregated by Free/Reduced Meal Program Participation

To better define the population of students served in reading intervention in grades seven and eight at Breckinridge Public Schools, I disaggregated the data by participation in the free and reduced meal program for each reading model. As noted earlier, this is the basis for schools to be designated Title-1 buildings. Descriptive statistics including frequencies and percentages are summarized in Table 18, which also includes descriptive statistics for total intervention and total enrollment in grades seven and eight.

While nearly half of the students (48.6%) in grades seven and eight participated in the free and reduced meal program, greater proportions of students enrolled in intervention participating in the free and reduced meal program. Over three-fourths of the students (75.4%) enrolled in intervention participated in the free and reduced meal program. The percentages of students enrolled in intervention who participated in the free

Table 18

Participation in the Free/Reduced Meal Program Disaggregated by Intervention Model

Program Participant	Reading Lab		Traditional Title-1		Traditional Non Title-1		Total Intervention		Total Enrollment Grades 7, 8	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Yes	530	84.7	124	81.1	321	62.5	975	75.4	3,123	48.6
No	96	15.3	29	19.0	193	37.6	318	24.6	3,307	51.4

and reduced meal program are highest at the Title-1 buildings, including both the reading lab (84.7%) and traditional model (81.1%). A disproportionate number of students in reading intervention participated in the free and reduced meal program compared to the total student population in grades seven and eight.

Summary of Findings for RQ #1

The question I investigated in phase 1 of the research was: *What are the demographic profiles of students enrolled in reading intervention in grades seven and eight?* After reviewing the frequencies and percentages of students enrolled in reading intervention, as summarized in Table 19, the data revealed Breckinridge Public Schools enrolled higher proportions of Students of Color, males, and students who participated in the free and reduced meal program in reading intervention courses in grades seven and eight compared to the general population of students enrolled in grades seven and eight.

Table 19

Demographic Summary of Students Enrolled in Reading Intervention

	Reading Lab Model	Traditional Model Title-1	Traditional Model Non Title-1	Total Reading Intervention	Total Grade 7-8 Population
Intervention Model	%	%	%	%	%
Race/Ethnicity					
Students of Color	63.7	54.3	43.4	54.5	38.2
"White"	36.3	45.8	56.6	45.5	61.8
Gender					
Female	44.7	45.1	42.0	43.7	48.9
Male	55.3	54.9	58.0	56.3	51.1
Free and Reduced Meal Program Participation					
Yes	84.7	81.1	62.5	75.4	48.6
No	15.3	19.0	37.6	24.6	51.4

MAP Analysis: RQ #2

I analyzed MAP Reading Conditional Growth Index fall to winter archival summary data to address research question #2: *What are the differences in gains for students enrolled in the traditional reading intervention and reading lab reading intervention classes?* Follow-up questions included:

> *Are there specific groups of students who benefit more from a specific model of reading intervention? (race/ethnicity, gender, and/or participation in free/reduced meals)*

First, I used an independent-samples *t*-test to compare MAP Reading Conditional Growth Index scores for students in reading lab and traditional reading intervention models. A score of zero indicates expected growth and a negative score indicates less than expected average growth with standard instruction. I found a significant difference in the scores for reading lab (M = -0.48, SD =1.63) and traditional intervention classes (M = -0.05, SD = 0.072); $t(1,096) = 4.18$, $p > 0.001$. The effect size, as measured by Cohen's d, was $d = .25$, indicating the reading model had a small but statistically significant effect on student scores. Students enrolled in the reading lab model achieved nearly one-half a standard deviation (0.48) less than expected growth, and students in traditional classes achieved just less than (0.05) expected growth. These results suggest that reading models do impact scores on fall-winter MAP Reading Conditional Growth outcomes. Specifically, the students enrolled in reading lab models made statistically significant less growth compared to those enrolled in a traditional model of reading intervention.

I conducted further analyses to determine the interaction between reading models and race/ethnicity, gender, and participation in the free and reduced meal program. Descriptive statistics including means and standard deviations are summarized in Table 20 and explained in the following sections.

Table 20

Means and Standard Deviations for Membership Variables on MAP Reading Conditional Growth Index Fall-Winter Scores

	Reading Lab Model		Traditional Model	
Group Membership	*M*	*SD*	*M*	*SD*
Race/Ethnicity				
Student of Color	-0.49	1.63	0.03	1.71
White	-0.46	1.61	-0.11	1.76
Gender				
Female	-0.43	1.48	-0.14	1.64
Male	-0.51	1.73	0.01	1.81
Participation in the Free and Reduced Meal Program				
Yes	-0.48	1.68	-0.06	1.8
No	-0.47	1.28	-0.03	1.61

Reading Model and Race/Ethnicity

As I began to drill down into the data, I wanted to know if reading model and race/ethnicity produced an interaction that would account for any differences in the achievement data. Additionally, I wanted to know if either reading model or race/ethnicity had a main effect on student achievement scores.

I next used a two-way analysis of variance to better understand the influence of two independent variables, in this case “reading model” and “race/ethnicity” on MAP Reading Conditional Growth Index fall to winter scores. The reading model was separated into two levels: “reading lab” and “traditional” and race/ethnicity also included

two levels: “Students of Color” and “White”. The analysis revealed the interaction effect between reading model and race/ethnicity did not reach significance at the .05 significance level. The particular interaction effect yielded an *F*-ratio of $F(1, 1{,}094) = .65$, $p > .05$. Looking at the main effects, one main effect was significant and one was not. The main effect for “race/ethnicity” yielded an *F*-ratio of $F(1, 1{,}094) = .26$, with a *p*-value above 0.05. This indicates no significant differences exist for “Students of Color” and “White” students regarding reading model and Reading Conditional Growth Index fall to winter scores. However, the main effect for the “reading model” did identify a significant result, yielding an *F*-ratio of $F(1, 1{,}094) = 16.61$, with a *p*-value less than 0.001, with Cohen’s $d = 0.25$, indicating the reading model does have a small impact on student scores.

Further examination of the specific means indicated the Conditional Growth Index for the reading lab model ($M = -0.48$) was significantly lower in comparison to the Conditional Growth Index for students in the traditional intervention ($M = -0.05$). This implies students in the reading lab experienced lower growth compared to their counterparts enrolled in the traditional intervention model.

Reading Model and Gender

I conducted a two-way analysis of variance to better understand the influence of reading model and gender on MAP Reading Conditional Growth Index fall to winter scores. This time I investigated the influence of two independent variables, namely “reading model” and “gender”. The reading model variable included two levels, including “reading lab” and “traditional”, while the gender variable included two levels,

namely “female” and “male”. This analysis demonstrated the interaction effect between reading model and gender did not achieve statistical significance at the 0.05 level. This specific interaction effect resulted in an *F*-ratio of $F(1, 1{,}094) = 0.26$, with the corresponding *p*-value greater than 0.05. This suggests that the interaction between reading model and gender did not significantly impact students’ scores.

Regarding the main effects, the results indicated one main effect was statistically significant while the other was not. The main effect for “gender” yielded an *F*-ratio of $F(1, 1{,}094) = .11$, with a corresponding *p*-value exceeding the 0.05 thresh-hold. This indicates no notable differences exist in the MAP Reading Conditional Growth Index scores between “females” and “males” across the different reading intervention models. Conversely, the main effect for “reading model” did find a significant result, reporting an *F*-ratio of $F(1, 1{,}094) = 15.80$, with a *p* -value lower than 0.001, and Cohen’s $d = 0.25$. This significant finding indicates a small influence of reading model on student MAP Reading Conditional Growth outcomes. As a reminder, I examined the specific means and found the Conditional Growth Index for the reading lab model ($M = -0.48$) was significantly lower than the Conditional Growth Index for students in traditional intervention ($M = -0.05$).

Reading Model and Free/Reduced Meal Program Participation

Finally, I conducted a two-way analysis of variance to determine the influence of two independent variables, this time “reading model” and “participation in free and reduced meal program” on MAP Reading Conditional Growth Index fall to winter scores. As with other analyses of variance, I wanted to identify if any interaction existed between

reading model and student participation in the free and reduced meal program. I was also interested in determining if either of these variables had a main effect on the differences in student scores. Again, the reading model variable included two levels: “reading lab” and “traditional”, while participation in the free/reduced meal program variable included two levels: “participant” and “non-participant”. This specific interaction effect was again insignificant at the 0.05 significance level. The specific interaction found an *F*-ratio of $F(1, 1{,}094) = 0.01$, with a corresponding *p*-value greater than 0.05. This suggests the combined influence of reading model and participation in the free and reduced meal program did not significantly impact students’ scores.

The main effect for free and reduced meal program participation yielded and *F*-ratio of $F(1, 1{,}094) = 0.03$, with a corresponding *p*-value greater than 0.05. This finding indicates no significant difference between students participating in the free and reduced meal program and those who do not participate on the students’ fall-winter MAP Reading Conditional Growth Index scores. At the same time, the main effect for “reading model” did find a significant result, reporting and *F*-ratio of $F(1, 1{,}094) = 11.03$, with a *p*-value lower than 0.001, and a Cohen’s $d = 0.25$. This finding is significant, and again indicates the reading model does have a small influence on students’ scores. As reported earlier, further examination of the means indicated the realized Conditional Growth Index for the Reading Lab model ($M = -0.48$) was significantly lower than the realized Conditional Growth Index for students in traditional intervention ($M = -0.05$).

Summary of Findings for RQ #2

In summary, to address Research Question #2: *What are the differences in gains for students enrolled in the traditional reading intervention and reading lab reading intervention classes?* I first conducted an independent samples *t*-test. The analysis revealed a significant difference in gains between students enrolled in the reading lab model versus students enrolled in a traditional intervention model, with students enrolled in the reading lab showing significantly less growth compared to students enrolled in the traditional model.

Next, I conducted three separate two-way Analyses of Variance (ANOVAs) to identify whether any of the differences in gains between the students in each model (reading lab and traditional) could be attributed to race/ethnicity, gender, or participation in the free and reduced meal program. The interaction effects in all cases demonstrated no significant interaction between the model of intervention and each of the other independent variables. Students in reading labs scored lower than expected when measured by fall-winter MAP Reading Conditional Growth index. The differences in gains between the two models is not related to race, gender, or participation in the free and reduced meal program. The only variable that shows a statistically significant effect is the model of intervention, with students enrolled in the reading lab model showing significantly less growth than students enrolled in the traditional model of reading intervention. This statistically significant effect was small.

Survey Results: RQ #3

To address research question #3, *How do students perceive the value of inclusion in reading intervention courses in grades seven and eight*? I obtained archival summary data of students' responses to end-of year 2022-2023 perception surveys (Appendix A). The survey was comprised of three sections: (a) Likert-scale prompts, (b) Class choice prompt, and (c) Open-ended response. Reading intervention teachers in grades seven and eight allocated class time for students to complete the end-of-year perception survey using Qualtrics. All student responses remained confidential, and only summary data was obtained. Descriptive statistics, including frequency and percentage, were used to identify the population of respondents. This data is summarized in Table 21.

Table 21

Participation in End-of-Year Student Perception Survey Disaggregated by Intervention Model

	Total Respondents		Percent of Total Subgroup
Intervention Model	*n*	%	%
Reading Lab	364	49.0	61.7
Traditional	379	51.0	54.5

Out of the total student population in reading intervention for grades seven and eight, 743 surveys were collected, representing 58% participation overall. Nearly have the respondents (48.7%) were from reading lab students (61.7% of students enrolled in reading labs overall), and half (50.7%) were from students enrolled in traditional reading

intervention (54.5% of those enrolled in the traditional reading intervention overall). In essence, the survey responses were nearly evenly split between reading lab and traditional model, and in each category, over 50% of the students responded to the end-of-year survey.

Students were prompted to identify their race/ethnicity. Teachers reported many students were confused by this prompt, especially students who appeared to belong to the White group. Due to this, I decided to not disaggregate the data for race/ethnicity, as I had no method of confirming the data.

Additionally, the nature of the survey did not prompt students to report participation in the free or reduced meal programs. Due to this, it was impossible to disaggregate survey results by participation in the free and reduced meal program.

I analyzed the end-of-year student perception surveys, disaggregating them by reading model and by gender. In the following sections, descriptive data including frequency and percentages are reported for each portion of the survey. Additional analyses are then described and summarized.

Survey Part 1: Likert-scale Prompts

A total of 690 responses were collected for the Likert-scale portion of the survey. Of these, 334 (48.4%) students reported enrollment in the reading lab model, and 356 (51.6%) students reported enrollment in the traditional model of reading intervention.

The end-of-year survey included seven questions, asking students to respond to a prompt from strongly disagree-disagree-agree-strongly agree. The survey results were re-coded to allow for analysis using 1 = strongly disagree, 2 = disagree, 3 = agree,

4 = strongly agree, Not sure = missing. Two of the prompts were re-coded to match negative-positive scale. These included: “I give up too much to be in my reading class.” and “I struggle to stay motivated in my reading class.” Inter-item correlations were calculated and are summarized in Table 22. Nearly half of the students (49.0%) responded to each of the items, and these surveys were then included in the analysis for the Likert-Scale portion of the study.

Table 22

Survey Inter-Item Correlation Matrix

	Item						
Item	Successful	Confident	Helpful	Enjoy	Improved	Give Up Too Much	Motivation
Successful	1.00						
Confident	0.76	1.00					
Helpful	0.56	0.60	1.00				
Enjoy	0.54	0.51	0.69	1.00			
Improved	0.68	0.64	0.648	0.51	1.00		
Give Up Too Much	-0.13	-0.12	-0.08	-0.03	-0.14	1.00	
Motivation	-0.15	-0.14	-0.11	-0.07	-0.13	0.47	1.00

Table 22 also shows two items were outliers. These include: *I give up too much to be in reading intervention*, and *I struggle to stay motivated in reading class*. Another inter-item analysis was conducted to see if elimination of these items increased reliability

as identified by Cronbach's alpha. The results of this analysis are summarized in Table 23.

Table 23

Survey Inter-Item Correlation Matrix After Deletion of Two Items

	Item				
Item	Successful	Confident	Helpful	Enjoy	Improved
Successful	1.00				
Confident	0.75	1.00			
Helpful	0.54	0.59	1.00		
Enjoy	0.49	0.48	0.68	1.00	
Improved	0.65	0.61	0.64	0.52	1.00

The exclusion of these two items increased Cronbach's alpha, and were excluded to improve reliability. When all seven items were included, Cronbach's Alpha was calculated at 0.71. The removal of those two items increased Cronbach's Alpha to 0.88, indicating improved reliability of the scale. As a result, these two items were removed and not included in the remaining analysis.

Next, means and standard deviations were calculated. The range of scores was one-four, with four representing more positive responses and one representing more negative responses. Results are summarized in Table 24.

Table 24

Survey Item Statistics for Likert- Scale Responses

Item	*M*	*SD*	*Mode*	*n*
Successful	3.22	0.81	3	443
Confident	3.22	0.80	3	443
Helpful	2.96	0.93	3	443
Enjoy	2.83	0.98	3	443
Improved	3.15	0.87	3	443

Note. Likert-scale items included a range of 1 (strongly disagree) to 4 (strongly agree).

Students expressed generally positive feelings about their experience in reading intervention. Students tended to agree/strongly agree with the following statements:

- I believe I can be successful in my reading class.
- My reading has improved since the beginning of the year.
- I am confident I can improve my reading skills.
- I think my reading class is helpful.
- I enjoy my reading class.

With the values for standard deviations nearing a full point on the four-point scale, most students' responses tended to cluster around the "agree" range of the scale. Small differences between models were noted on the distribution graphs (Appendix C), but the overall distribution was similar for each model of intervention.

Looking at the distribution graphs (Appendix C), students in either model showed consensus on most items, with most students responding agree or strongly agree to the

statements. This phenomenon points to a consensus among the students, indicating a moderate level of agreement with the presented statement, and suggesting that student enrollment to a particular model of intervention had little effect on students' overall perception of the experience, and that students neither strongly agreed or disagreed with any statement.

Next, frequencies and percentages of student responses were disaggregated by reading model to determine if differences existed in student responses between the two models. Table 25 summarizes student responses for the five Likert-items included in the analysis. Additional graphic representations of this data are included in Appendix C.

Table 25

Survey Part 1 Item Response Summary

	Reading Lab		Traditional Model		Total Responses	
Item	*n*	%	*n*	%	*n*	%
1 I believe I can be successful in my reading class.						
Strongly Disagree	16	6	23	5	39	5.7
Disagree	11	6	8	7	19	2.8
Agree	182	34	171	43	353	51.2
Strongly Agree	104	36	132	26	236	34.2
Not Sure	31	17	27	18	58	8.4
2 I am confident I can improve my reading skills.						
Strongly Disagree	12	3	21	6	33	4.8
Disagree	17	5	16	4	33	4.8
Agree	186	54	163	45	349	50.6
Strongly Agree	106	31	122	34	228	33.0
Not Sure	23	7	37	10	60	8.7

Table 25 continues

	Reading Lab		Traditional Model		Total Responses	
Item	*n*	%	*n*	%	*n*	%
3 I think my reading class is helpful.						
Strongly Disagree	30	9	36	10	66	9.6
Disagree	42	12	35	10	77	11.2
Agree	156	46	155	43	310	44.9
Strongly Agree	66	19	83	23	149	21.6
Not Sure	47	14	50	14	97	14.1
4 I enjoy my reading class						
Strongly Disagree	43	13	43	12	86	12.5
Disagree	53	16	51	14	104	15.1
Agree	124	36	128	36	252	36.5
Strongly Agree	58	17	83	23	141	20.4
Not Sure	63	18	53	15	116	18.8
5 My reading has improved since the beginning of the year.						
Strongly Disagree	18	5	22	6	40	5.8
Disagree	25	7	22	6	47	6.8
Agree	148	43	122	34	270	39.1
Strongly Agree	91	26	131	36	222	32.1
Not Sure	62	18	62	17	124	18.0

Survey Part 1: Disaggregated by Reading Model

I conducted an independent-samples *t*-test to compare overall students' perceptions on end-of-year perception survey for students enrolled in reading lab and traditional reading intervention classes, to understand if any statistically significant differences could be identified in student responses. Results are summarized in Table 26.

Table 26

Survey Total Results Disaggregated by Reading Model

Intervention Model	*n*	*M*	*SD*
Reading Lab	334	13.47	4.15
Traditional	356	13.57	4.39

No significant difference was found in the scores for reading lab ($M = 13.47$, $SD = 4.15$, $N = 334$) and traditional reading intervention classes ($M = 13.57$, $SD = 4.39$, $N = 356$); $t\ (688) = 0.42$, $p = 0.77$. These results suggest the reading model does not have a significant effect on overall student perceptions as reported on the Likert-scale portion of the survey. Additionally, the means of both groups indicate students most often chose "agree" for each statement. This is confirmed by the data represented in the graphs included in Appendix C.

Survey Part 1: Disaggregated by Reading Model and Gender

Next, I conducted a two-way analysis of variance to assess the impact of two independent variables, namely, "reading model" and "gender" on the end-of-year student perception survey. The reading model was categorized into two levels, namely "reading lab" and "traditional" and the gender variable encompassed two levels, "female" and "male". The analysis revealed the interaction effect between the reading model and gender did not reach statistical significance at the 0.05 significance level. The specific interaction effect yielded an F-ratio of $F(1, 623) = .50$, with a corresponding p-value greater than 0.05.

Regarding the main effects, the results found neither main effect to be statistically significant. The main effect for the "gender" variable yielded an F ratio of $F(1, 623) = .78$, with a corresponding p-value greater than 0.05. This indicates no noteworthy differences exist in the student end-of-year perception survey results between female and male students. The main effect for the "reading model" variable found an F-ratio of $F(1, 623) = .55$, with a p-value again exceeding the 0.05 thresh-hold. This indicates no noteworthy influence of the reading model on the student end-of-year perception surveys.

Next, a two-way Analysis of Variance was conducted for each item of Part 1 (Likert-Scale) of the end-of-year student perception survey to see if any significant differences exist between students enrolled in the two models of reading intervention and gender. The results for each item are summarized in Table 27 and described in the following section.

Gender: Question 1: I believe I can be successful in my reading class. I conducted a two-way analysis of variance to compare the main effects of reading model and gender on the statement: *I believe I can be successful in my reading class*. The reading model variable included two levels, "reading lab" and "traditional", while the gender variable also included two levels, namely "female" and "male". This examination showed that the interaction effect between reading model and gender was statistically insignificant at the 0.05 level for this question. The interaction effect resulted in the F-ratio of $F(1, 586) = 1.22$, with the subsequent p-value greater than the .05 level of significance.

Table 27

Mean and Standard Deviation Statistics for Survey Items Disaggregated by Gender

	Reading Lab Intervention Model		Traditional Intervention Model	
Group Membership	*M*	*SD*	*M*	*SD*
Item 1: I believe I can be successful in my reading class.				
Female	3.29	0.69	3.27	0.70
Male	3.18	0.73	3.29	0.78
Item 2: I am confident I can improve my reading skills.				
Female	3.21	0.67	3.26	0.75
Male	3.23	0.73	3.27	0.74
Item 3: I think my reading class is helpful.				
Female	2.97	0.79	3.02	0.86
Male	2.80	0.96	2.91	0.88
Item 4: I enjoy my reading class.				
Female	2.83	0.92	2.93	0.97
Male	2.64	1.02	2.80	0.96
Item 5: My reading has improved since the beginning of the year.				
Female	3.17	0.75	3.31	0.80
Male	3.10	0.86	3.20	0.87
Item 6: I have to give up too much to be in my reading class.				
Female	3.01	0.78	2.71	0.99
Male	2.74	0.96	2.61	0.94

Note. Likert-scale items included a range of 1 (strongly disagree) to 4 (strongly agree).

Additionally, the main effects were also statistically insignificant at the .05 significance level. The main effect for the reading model yielded an *F*-ratio of $F(1, 586) = .607$, and a subsequent *p*-value greater than the .05 significance level. The main effect for gender resulted in an *F*-ratio of $F(1, 586) = .574$, again with a corresponding *p*-value again greater than .05. This analysis shows no notable differences

exist in students' response to the statement: *I believe I can be successful in my reading class* based on gender or reading intervention model.

Gender: Question 2: I am confident I can improve my reading skills. In order to identify any interaction between reading model and gender on the second statement: *I am confident I can improve my reading skills*. I conducted a two-way analysis of variance. The reading model variable was divided in two levels, "reading lab" and "traditional", and the gender variable again included two levels, "female" and "male". The interaction effect found an *F*-ratio of $F(1, 581) = .006$, with a subsequent *p*-value greater than the .05 significance level. This indicates that the combined influence of reading model and gender did not significantly impact students' responses on this item.

I then calculated the main effects to determine if either main effect was significant. The main effect for the reading model resulted in an *F*-ratio of $F(1, 581) = .57$, with the corresponding *p*-value exceeding the .05 level of significance, and the main effect for gender found an *F*-ratio of $F(1, 581) = .14$, again with the *p*-value greater than the .05 level of significance. Taken together with the lack of significance on the interaction effect, these findings indicate that neither gender nor reading model, nor the combination of these two variables, influenced students' response to the statement: *I am confident I can improve my reading skills.*

Gender: Question 3: I think my reading class is helpful. I conducted another two-way analysis of variance to compare the main effects of the same two variables, that is reading model and gender, on the statement: *I think my reading class is helpful*. As previously indicated, the reading model variable included two levels, namely "reading

lab" and "traditional", and the gender variable also included two levels, namely "female" and "male". Here again, all effects were statistically insignificant at the .05 significance thresh-hold. The interaction effect found an *F*-ratio of $F(1, 539) = .19$, with the resulting *p*-value greater than .05. The main effect for reading model yielded an *F*-ratio of $F(1, 539) = .95$, with the *p*-value above .05, and the main effect for gender yielded an *F*-ratio of $F(1, 539) = 3.26$, with the resulting *p*-value greater than .05. This indicates neither the interaction between reading model and gender, nor either of these variables alone, can explain any differences in students' response to the statement: *I think my reading class is helpful*.

Gender: Question 4: I enjoy my reading class. I conducted yet another two-way analysis of variance to compare the main effects of these same two variables, reading model ("reading lab" and "traditional") and gender ("female" and "male") on the statement: *I enjoy my reading class.* Again, all effects were statistically insignificant at the .05 significance level. This specific interaction found an *F*-ratio of $F(1, 523) = .08$, and the *p*-value above the .05 significance level. The main effect for reading model yielded an *F*-ratio of $F(1, 523) = 2.44$, $p > .05$, and the main effect for gender yielded an *F*-ratio of $F(1, 523) = 3.80$, with the *p*-value approaching significance ($p = 0.052$). This analysis indicates no significant influence of reading model nor gender influenced students' response to the statement: *I enjoy my reading class.*

Gender: Question 5: My reading has improved since the beginning of the year. Another two-way analysis of variance was conducted to compare the main effects of these same variables, reading model ("reading lab" and "traditional") and gender

("female" and "male") on the statement: *My reading has improved since the beginning of the year*. All effects were again statistically insignificant at the .05 significance level. The interaction effect was not significant, $F(1, 521) = .11$, $p > .05$. The main effects were also not significant. The main effect for reading model yielded an F-ratio of $F(1, 521) = 2.83$, $p > .05$, and the main effect for gender yielded an F-ratio of $F(1, 521) = 1.54$, $p > .05$. This indicates that the two variables, reading model and gender, do not account for differences in students' response to the statement: *My reading has improved since the beginning of the year.*

Gender: Question 6: I have to give up too much to be in my reading class. Although this question was excluded from the overall analysis, this particular item was of great interest to me. Therefore, I conducted a two-way analysis of variance to compare the main effects of reading model ("reading lab" and "traditional") and gender ("female" and "male") on the statement: *I have to give up too much to be in my reading class*. The interaction effect resulted in an F-ratio of $F(1, 473) = 1.05$, and the corresponding p-value above the .05 thresh-hold for significance. This suggests the combined influence of reading model and gender did not statistically influence students' response to this item.

As I did with previous questions, I next looked to identify if either of the main effects were statistically significant. Here I discovered both main effects reached statistical significance at the .05 significance level. The main effect for reading model yielded an F-ratio of $F(1, 473) = 6.26$, $p < .05$, with Cohen's $d = 0.19$, indicating a small but statistically significant effect. The main effect for gender yielded an F-ratio of $F(1, 473) = 4.62$, $p < .05$, again with Cohen's $d = 0.19$, and again indicating a small but

statistically significant effect. Both gender and reading model impacted student responses to the "give up" question. Females reported stronger agreement to the statement and students in the reading lab model also reported stronger agreement, although there was no interaction between the two variables.

In summary, the analyses of the end-of-year student survey indicates little effect between reading models and student responses. Small effects were found for some items, where students enrolled in reading labs expressed more negative feelings to their participation in reading intervention compared to students in the traditional model of intervention. These effects were all found to be small, even if they were statistically significant.

Survey Part 2: Class Choice Item

For Part 2 of the end-of-year student perception survey, students were asked to indicate what class they would request if they were not enrolled in reading intervention. Thirteen choices were provided, including twelve courses that were available at one or more middle schools, as well as "other". All courses listed were available at one or more middle schools, though not every class was offered at every middle school.

Six hundred ninety-nine (96%) respondents completed this question on the survey. These results are depicted in Table 28.

No students indicated they would request health, physical education, or AVID (Advancement Via Individual Determination) courses. These are classes that are generally assigned to students, and not all classes are available at every building. Seven

Table 28

Course Request if Not Enrolled in Reading Intervention

Course Choice	Lab model		Traditional model		Total	
	n	*%*	*n*	*%*	*n*	*%*
AVID *	0	0	0	0	0	0
Health	0	0	0	0	0	0
Physical Education	0	0	0	0	0	0
Contemporary Communication/LACA	1	14	6	86	7	1.0
Music, band, or orchestra	15	63	9	38	24	3.4
Industrial Technology	15	56	12	44	27	3.9
Drama	21	54	18	46	39	5.6
Publications (Yearbook)	31	66	16	34	47	6.7
Business or Computer Technology	20	35	37	65	57	8.2
Family and Consumer Science (FCS)	49	53	43	47	92	13.2
Art	73	54	61	46	134	19.2
World Language (Spanish, French, Chinese)	64	47	72	53	136	19.5
Other	70	51	66	49	136	19.5

Note. [a] is an acronym for Advancement Via Individual Determination course

students indicated they would request Contemporary Communications, and 86% of those choosing this class were from Lab School buildings, where this class is not available to anyone. While 136 students (19.5%) indicated "other", 136 students (19.5%) also indicated they would request world language, and 134 (19.2%) reported they would request art.

Survey Part 3: Open-ended Question

Part 3 of the end-of-year student perception survey included one open-ended question: *What else do you want us to know about your experience in a reading class?*

(Optional). Descriptive statistics including frequencies and percentages for each model are summarized in Table 29.

Table 29

Participation in End-of-Year Perception Survey by Reading Model

	Total Respondents	Item Respondents		Total Open-ended Responses	
Intervention Model	*n*	*n*	*%*	*n*	*%*
Reading Lab	590	364	49.0	81	44.5
Traditional	695	379	51.0	101	55.5
Total	1,286	743	58.1	182	24.5

Of the students who completed the survey, 182 (24.5%) responded to the open-ended question. Eighty-one responses (44.5%) were from students enrolled in reading labs, and 101 responses (55.5%) were from students enrolled in the traditional model.

Responses to this item were coded according to the following categories and the numbers of responses in each category were counted. Some responses contained more than one comment and are represented in more than one category. The data is summarized in Table 30. Example responses are included in Appendix B.

The compilation of student responses to the open-ended, optional question asking students what additional information they want to share revealed students have mixed feelings about enrollment in reading intervention and the realized value of that class.

Table 30

Summary Responses to Open-ended Prompt

	Reading Lab Model		Traditional Model		Total	
Category	*n*	*%*	*n*	*%*	*n*	*%*
Helpful						
yes	17	21.0	15	14.9	32	17.6
no	4	4.9	9	8.9	13	7.1
Positive Attributions						
To self	7	8.6	21	20.8	28	15.4
To teacher	12	14.8	17	16.8	29	15.9
To class	36	44.4	30	29.7	66	36.3
Negative Attributions						
To self	6	7.4	6	5.9	12	6.6
To teacher	3	3.7	5	5.0	8	4.4
To class	19	23.5	25	24.8	44	24.2
Rigor of class						
Too easy	2	2.5	2	2.0	4	2.2
Too challenging	4	4.9	5	5.0	6	3.3
Prevents from taking other classes	1	1.2	5	5.0	6	3.3
Desire to not have reading class	5	6.2	19	18.8	24	13.2
Other	4	4.9	0	0.0	4	2.2

*Note. Total respondents = 182; n= 81 (reading lab), n= 101 (traditional model).

One notable difference between students enrolled in the different models is the responses that indicate a generally positive attribution to self and to the class. More students in the traditional model of intervention made comments indicating a positive attribution to self (20.8%) compared to those enrolled in the reading lab model (8.6%). Conversely, more students enrolled in the reading lab model expressed positive attributions to the class (44.4%) compared to students enrolled in the traditional model (29.7%). Another interesting finding is the number of students who wrote about a desire to not have reading

intervention class. Here, students enrolled in the traditional model saw higher numbers (18.8%) compared to students enrolled in the reading lab model (6.2%). While several students spoke of having friends and generally enjoying class, others reported more negative feelings. Although few in number, several student responses indicated a lack of hope, and a generalization to being "slow" or "dumb".

Summary of Findings for RQ #3

The student perception survey data was collected and analyzed to answer Research Question #3: *How do students perceive the value of inclusion in reading intervention courses in grades seven and eight?* The analysis showed no significant difference between responses to the end-of-year perception survey for students in either model. The results of Part 1: Likert-Scale responses indicate neither reading model nor gender had a significant impact on end-of-year student perception surveys, with students indicating generally positive experiences in reading intervention classes in grades seven and eight. Students in either model, however, were neither more nor less positive about the experience compared to students in another model. The results of Part 2: Class Choice responses indicate students favor taking a world language class if they were not enrolled in reading intervention in grades seven and eight. The results of Part 3: Open-ended question responses indicate students generally attribute positive feelings to their reading intervention teachers.

In the late stages of my analysis, I learned of one grade level at one middle school that was inadvertently included with the "reading lab" population. This particular building includes both models of reading intervention, employing reading labs for grade

seven students and a traditional model for grade eight students. Rather than counting these separately, thirty-three students (grade eight) enrolled in the traditional model were counted as reading lab model. Once this became known, I returned to the data to calculate the impact of this mislabeling. The results are summarized in Table 31.

Table 31

Mean, Median, and Conditional Growth by Reading Model with Recalculations

Data	Reading Lab Model	Reading Lab *Recalculated	Traditional Model	Traditional *Recalculated
Mean Fall RIT	201.3	201.6	199.8	199.7
Mean Winter RIT	202.4	202.4	203.5	203.5
Median Fall Achievement %tile	23	24	20	19
Mean Winter Achievement %tile	19	19	21	19
Median Conditional Growth %tile	33	31	50	50

Note: These calculations are based on students who had both fall and winter MAP scores.

The Mean Fall RIT score for students in the reading lab model was 0.3 point higher when recalculated to exclude the subset of students who were technically enrolled in traditional intervention course. Conversely, the adjusted Mean Fall RIT score for students in the traditional model was 0.1 point lower. Additionally, the Mean Fall Achievement percentiles resulted in an increase of one percentile for the reading lab students, and a decrease of one percentile for the traditional model students when

recalculated. More importantly, the recalculated Conditional Growth Percentile was two points lower for students enrolled in the reading lab model, while the Conditional Growth Percentile for students enrolled in the traditional model remained consistent even with the recalculations.

Next, I calculated MAP Results for students performing below the 40th percentile, a benchmark for reading intervention enrollment in our district. These results are summarized in Table 32.

Table 32

MAP Results for Students Below 40th Percentile with Recalculations

Data	Reading Lab	Reading Lab *Recalculated	Traditional Model	Traditional Model *Recalculated
Fall Reading RIT	196.9	196.9	197.6	197.6
Winter Reading RIT	198.9	198.7	201.9	201.9
Median Fall Achievement %tile	16	16	16	16
Median Winter Achievement %tile	15	15	18	18
Mean Conditional Growth %tile	37	36	54	53

With this analysis, median fall and winter achievement percentile scores remain unchanged with the recalculations. Also, recalculations resulted in a decrease of one point for mean conditional growth percentiles in each group. The only other difference occurred in the recalculated mean winter reading RIT score for students enrolled in the reading lab model, which resulted in a decrease of 0.2 points.

With these calculations, I believe the results of the study are valid, and the findings showing students enrolled in reading labs performed below students enrolled in the traditional model are strengthened. It should be noted, however, that the results contained in this dissertation reflect the inclusion of thirty-three students enrolled in the reading lab who were technically enrolled in the traditional model of reading intervention in eighth grade.

Chapter 4 Summary

This chapter described the descriptive and inferential statistics employed to answer the three research questions framed in this dissertation. I described the procedures used and the findings, using data tables to summarize results in order to accept or deny the null hypotheses generated in Chapter 3.

Research Question #1 asked: *What are the demographic profiles of students enrolled in reading intervention in grades seven and eight?* From the analysis of the descriptive statistics, Breckinridge Public Schools over-identified males and Students of Color in reading intervention classes in grades seven and eight during the 2022-23 school year. Additionally, more students participating in the free and reduced meal program in grades seven and eight also participated in reading intervention during the 2022-23 school year compared to those who did not participate in the meal program.

Research Question #2 asked: *What are the differences in gains for students enrolled in the traditional reading intervention and reading lab reading intervention classes?* The analysis revealed statistically significant differences between the traditional and reading lab models of intervention in regard to student growth as measured by the

MAP Growth Reading assessment. Specifically, students enrolled in the reading lab model realized significantly less growth than students enrolled in the traditional model of reading intervention in grades seven and eight during the 2022-23 school year. It is also noted that neither group of students fully realized expected conditional growth, and the students enrolled in the reading lab model were nearly one-half standard deviation below the mean for expected growth, while those in the traditional model realized growth was .05 standard deviation below expected growth.

Research Question #3 asked: *How do students perceive the value of inclusion in reading intervention courses in grades seven and eight?* The data analysis revealed students reported generally positive perceptions of the value of inclusion in reading intervention in grades seven and eight during the 2022-23 school year. No notable differences were found between students in either model of intervention for Part 1 (Likert-scale portion), nor for individua items on the Likert-scale portion of the survey. The final question on the survey revealed interesting responses, and these will be discussed in Chapter 5.

In the next chapter, I discuss the major findings of this research, highlighting the significance of the findings, how these findings fit within the body of scholarly knowledge as described in Chapter 2, and the implications of these findings. I also address limitations and additional research opportunities.

"I think there is data, and then there's information that comes from data.

And then there's knowledge that comes from information.

And then, after knowledge, there is wisdom.

I am interested in how to get from data to wisdom."

(Toni Morrison, interview for Harvard Advocate, 2016)

Chapter 5

Summary, Implications, and Conclusions

This Illuminative Evaluation research is grounded within a critical pragmatic paradigm. Critical pragmatism is unique in that the action or outcome one aspires to initiate drives the methodology of the study. This study arose from my desire to illuminate both the costs and benefits of reading intervention for middle school students, and to make sense of the influence of two different models of reading intervention currently in use in my district, in hopes that we could determine a single best model moving forward.

Research indicates students who read below grade-level proficiency are more likely to drop out of high school (World Literacy Summit, 2018). This has lasting ramifications, as lack of a high school diploma is associated with lower, limited financial earnings (Smart et al., 2017) and increased risks for maladaptive behaviors (Smart et al., 2017; Wicht et al., 2021). Importantly, literacy is a tool that allows students to critically consume and create content, skills needed for civic engagement in a democratic society (Chapman & Tunmer, 2003; Wicht et al., 2021).

Phase three of Illuminative Evaluation asks researchers to *Explain* their findings (Parlett & Hamilton, 1972). By making sense of the findings, researchers using Illuminative Evaluation methodology are placing actionable information before decision makers. This essential element is critically important, as the researcher, like me, is rarely a decision-maker, and the driving force of Illuminative Evaluation is the "doing" inspired by the findings. The synthesis and making sense of findings provides the body of this, Chapter 5, of my dissertation. My goal is to inform decision-makers at the building and district levels about reading intervention for middle school students. I aim to address a problem of practice in my particular setting by elevating the findings beyond the completion of this dissertation. This aligns with the core values of the Carnegie Project on the Education Doctorate, which recognizes the dissertation as a small part of a much larger undertaking, with researchers becoming transactional agents moving research into practice (Perry et al., 2020).

Structure of Chapter 5

In this chapter, I discuss the conclusions drawn for the three research questions framing my study, explaining how these conclusions fit into the current body of scholarly knowledge. Continuing to work within the framework of Illuminative Evaluation, I share additional findings that emerged as I conducted the study, again putting these findings into conversation with the research literature. Next, I share the limitations of my study, giving additional rationale for understanding these limitations. In alignment with Illuminative Evaluation methodology, I frame the implications of my findings as a call to action for various stakeholders. In the section "Opportunities", I outline additional

research to inform our practice, specifically within Breckinridge Public Schools. My closing remarks frame a better way forward, based on the findings of this dissertation.

Discussion of Findings

RQ #1: Mine, Yours, and Ours; Breckinridge Statistics Mirror National Findings

Readers may be unimpressed with the descriptive statistics that frame my first research question. Reading intervention students in Breckinridge Public Schools reflect the populations described in research literature. Like many other medium-sized school districts across the nation, we serve disproportionately more students of color, more male students, and more students who participate in the free and reduced meal program in reading intervention compared to our overall population in grades seven and eight. This important, if unsurprising, finding suggests we match the national trend in serving higher proportions of particular populations, including many belonging to historically marginalized groups, in intervention programs. In telling the story of Breckinridge Public Schools, then, I am telling the story of school districts across the nation.

In Chapter 2, I outlined many reasons disparities in enrollment exist for students of color, males, and students participating in the free and reduced meal program. Research has identified the profound impact of systemic bias for marginalized racial and ethnic groups that continue to bind people of color to a lower socio-economic status (Hung et al., 2020). Students living in poverty often struggle to learn to read compared to students in higher income homes (Buckingham et al., 2013; Carroll et al., 2019; Hung et al., 2020; Kuhfeld et al., 2018; National Academies of Sciences, 2023). Lack of access to resources influence some of the disparities for families in the lower socio-economic

bands (Buckingham et al., 2013; Fisher et al., 2016; Hung et al., 2020; Kuhfeld et al., 2018; National Academies of Sciences, 2023), with additional mediating variables including school attendance, sleep, mobility, and parental support of academic endeavors (Buckingham et al., 2013). The structural reproduction of racism in our nation occurs in both overt and covert ways. The solution requires actionable steps that illuminate covert structures in order to dismantle systems of oppression. The structural elements impacting students of color cannot be easily shifted within the confines of middle school public education. However, as a researcher, I am obligated to fully interrogate the findings of my study to determine what, if any, variables we can influence. This is a particularly important component of the Carnegie Project on the Education Doctorate, which seeks to develop research practitioners who design solutions to problems that not only improve the problem, improve the system that produced the problem (Perry et al., 2020).

A major finding, then, is the demographic data revealing Breckinridge serves larger proportions of males in reading intervention compared to females. While research may help us rationalize the disparities for students participating in the free and reduced meal program, an inherent reflection of poverty, and we can draw connections between race and poverty due to inequitable and systemic practices inside and outside of schools that bind some racial and ethnic groups to a life of poverty (Hung et al., 2020), how do we account for the overrepresentation of *males* in our intervention courses? As discussed in the literature review, researchers have concluded differences in achievement between males and females cannot be explained by cognitive differences (Heyder et al., 2021; Quinn, 2018). If cognitive differences cannot explain the differences, we must dig deeper

to understand the root cause of this achievement disparity that leads to an overrepresentation of males in intervention, and consider how disproportionate representation in reading intervention intersects with equity.

In a meta-analysis, Quinn found more males were identified in reading intervention, with the disproportionality increasing as the reading difficulties grew in severity (2018). Quinn's student hypothesized this could be due to identification bias. Quinn identified three broad categories for identification. The first, low achievement, relies on a chosen cut-off for a percentile. Quinn found a wide range here, with some criteria for different intervention programs ranging from the 3rd to the 30th percentile on a particular reading measure. Quinn reminded readers of the fallacy of this identification system, citing evidence that "no distinct cutoff point exists that will correctly distinguish between children with and without reading difficulties" (2018, p. 1041). Further, researchers acknowledge cultural bias is inherent in the design of standardized testing, at both the overall test and discrete item levels of construction (Cunningham, 2019; Warne et al., 2014). Yet Breckinridge, like many other districts, relies on identified cut scores as part of the identification for reading intervention at the middle school level.

The second method of identification found in Quinn's study was the use of school- or clinician-based definitions, which might include isolated or combined sources of data such as teacher referrals, medical evaluations, or historical classroom data (2018). Research indicates this method, too, is biased, resulting in the overidentification of males in intervention. Shaywitz et al. noted males tend to demonstrate frustrations more overtly, drawing more teacher attention that in turn moves teachers to identify a student for

reading intervention (Shaywitz et al., 1990, as cited in Quinn, 2018). Discrepancies in the male-female ratios in reading intervention may reflect differences in behavior instead of true differences in reading.

Prior to the MAP Reading assessments, various criteria were set forth and used to identify students for reading intervention. My own experiences frame this as a subjective process, as when working with teams of teachers to determine reading intervention placements, I often heard about the students, usually females, “who work so hard” (therefore, should not be placed in intervention), and the “behavior kids” (often males) whom teachers recommended for intervention.

An underlying cause in the overt misbehaviors between males and females is the way in which males are more prone to gender conformity compared to females (Heyder et al., 2021). Heyder et al. found, “the more pressure male adolescents felt to adhere to gender norms, the larger their increase in school misconduct during their first 2 years of secondary school” (2021, p. 70). This phenomenon may impact teacher judgement, as teachers are more apt to identify students who are misbehaving for additional reading intervention. Additionally, students may indicate they need an intervention by underperforming in class reading activities as well as standardized assessments, out of this realized pressure to conform to gender stereotypes that “males don’t read”.

Speaking of gender stereotypes, students’ perceptions of gender stereotypes may lead to male students displaying more aggressive or dominant behaviors, which in turn reinforces those false stereotypes (Doyle, 2023), thereby leading teachers to overidentify males for intervention courses. Doyle found 58% of teachers included in their study

reported male students experienced more severe consequences for “unwanted” behaviors compared to females (Doyle, 2023). This suggest that even when teachers recognize the impact of gender biases, it is difficult for them to set those biases aside. These biases tend to favor females, especially in regard to reading and English classes (Doyle, 2023) which may also lead to overidentification of males in reading intervention courses.

The third method of identification outlined in Quinn’s meta-analysis was the use of IQ-discrepancy criteria (2018). This method requires administration of either a full-scale IQ test or a proxy variable for IQ and a comparison reading measure, to determine if a discrepancy exists between what the student *should* be able to read and what the student *is* able to read. However, it is notable that psychometricians believe the effects of measurement unreliability double when two sources of measurement are used, as is the case when looking at IQ measure and the reading measure, making the results difficult to interpret (Cattell, 1982, as cited in Quinn, 2018). The effect remains that this test unreliability results in the identification of more males for reading intervention. At Breckinridge, the IQ discrepancy method is one of several paths used to identify students for special education, and is handled entirely through the Multi-Disciplinary Team (personal communication, October 12, 2023). I was not able to disaggregate the data by participation in special education, though it is likely the inherent bias in this method of identification accounts for some of the disproportionality of males in reading intervention.

RQ #2: Dosage and Casting a Wide Net

The results of research question two indicate significant differences in achievement as measured by the fall-winter MAP Reading Conditional Growth Index, with students in the reading lab model achieving significantly lower than expected growth compared to students in the traditional model of reading intervention. These differences were not related to race, gender, or participation in the free and reduced meal program, with the reading model the only main effect found to be statistically significant. I was surprised to find no interaction effects or main effects from the analysis of variance for participation in the free and reduced meal program, given the magnitude of studies that would suggest poverty impacts achievement, and the literature demonstrating the compounded influences of race/ethnicity and poverty (Fien et al., 2018; Hung et al., 2020; Losen et al., 2015; Losen et al., 2018; Milner et al., 2019).

Identifying the reading lab model as the only variable that explained differences in student achievement was also surprising considering the reading lab model includes an over-representation of students across the board, as nearly every student in seventh grade is rostered to some form of reading intervention. One might have expected the cohort of reading lab model students to out-perform the cohort of students in the traditional model, as the addition of more proficient readers would naturally inflate the mean achievement score. The basic math function of adding in expectedly higher scores did not manifest in the results. To unpack this finding, we need to examine this influence of casting a wider net on intervention dosage.

Dosage. To borrow from the medical field, dosage has several meanings, including mode, potency, frequency, and duration. For reading intervention, the mode might be considered the curricula or even the model of intervention – whether it is administered in small groups, with a paraprofessional, a computer program, etc. For the purpose of our discussion, we will focus on curricula as an indicator of mode. Since both models of intervention used the same published curricula, we will assume the mode aspect of dosage did not account for differences. Potency refers to the strength of the intervention, and in reading intervention this would include the strength of the instruction. Frequency refers to how often the intervention occurs, and duration the length of the intervention. The findings of this dissertation indicate a consistent relationship between dosage and reading outcomes, where students who received fewer minutes achieved well below expected growth. To better understand this, we must consider dosage in terms of potency, frequency, and duration.

Potency. Potency, as indicated by strength of teaching, is an aspect of dosage that may account for the lower gains realized by students participating in the reading lab model. Reading intervention teachers at the schools using the reading lab are often assigned another primary teaching assignment. They may teach English, special education, or another content for the majority of their day. This has consequences in that these teachers, many of whom are not formally trained in reading instruction, are tasked with teaching students without adequate subject matter knowledge. Research indicates teachers need solid subject matter to be effectual (Sousa, 2017). Research also indicates preservice secondary teacher programs do not systematically and regularly include

foundations of reading as part of the core content (Bartholomew & De Jong, 2017; Baye et al., 2019). Compounding this practice, these teachers are required to attend professional learning for their primary teaching position. While teachers are always welcome to attend additional professional learning, it is unrealistic to expect them to avail themselves of this "free learning" opportunity. Additionally, the majority of a teacher's time and attention is likely spent on their primary teaching assignment, further reducing the potency of instruction.

Another aspect of dosage potency must also be recognized. That is, buildings employing the reading lab model serve students who would not typically be served in reading intervention where the traditional model is used. In buildings using the reading lab model, the majority of students in grade seven are enrolled in a reading intervention course. This casting of a wide net has the iatrogenic effect of diluting the dose by diluting the teacher's attention to the needs of students particularly in need of the intervention. Teachers in the reading lab schools frequently report student misbehaviors interrupt their teaching, though this was not included in the current study. However, one cause of student misbehavior is the perception that the work is too easy (Kapoor et al., 2022; TNTP, 2018). This may account for the deflated growth scores for this cohort.

Potency also refers to the degree in which the intervention is targeted to address a student's needs. In a meta-analysis, Hall and Burns found targeted instruction, focused on the specific needs of students, was more effective compared to more generalized interventions (2018). As such, we can define potency in relation to targeted instruction. A weaker potency of intervention occurs when targeted instruction is less targeted, as is the

case when we uniformly assign students to an intervention without respect to whether they need that specific intervention (Hall & Burns, 2018). The watered-down dosage limits the potency, or strength of the instruction, and may explain why students in the reading lab cohort did not meet projected growth.

Frequency. Frequency as an aspect of reading intervention dosage refers to how often the students have access to the intervention. The research literature in regards to dosage frequency is hazy. Baye et al.'s (2019) synthesis of quantitative research of reading programs at the secondary level found additional periods [classes] of instruction had mixed impact. Overall, their analysis revealed no statistically significant differences between programs that provided additional class periods and those that did not, noting the most common approach to reading intervention at the secondary level was the incorporation of an additional class period for struggling students. This team also reported one study that showed initial benefits of the extra dose of intervention, but the impact of that dose disappeared after two years (Baye et al., 2019).

Hall and Burns reported meta-analytic data found no association between intervention dose and reading achievement (2018). However, their own meta-analysis found a small correlation between intervention hours and reading outcomes. These authors posit the small correlation may have been due to inconsistencies in criteria for stopping the intervention, where some studies used a particular criterion and others continued for a particular period of time.

Frequency, then, might frame the statistically significant lower growth scores for the reading labs cohort. Time constraints did not allow me to further interrogate the data

to identify if differences exist between students participating in the daily half class period (seventh grade), and those participating in the alternate day full class period (eighth grade). A confounding variable in this analysis is the exclusion of some students in grade eight, as typically only students meeting the criteria for intervention are included at this grade level, while the wide-net is used in grade seven.

Duration. A final aspect of dosage to be considered is duration. My study focused on students in reading intervention over the course of two semesters, or a full year. In an effort to use consistent measures, the analysis for research question two included summary data of students using fall and winter MAP Reading Conditional Growth scores. I purposely excluded student data if both the fall and winter score was unavailable. This means I do not have data about students who were removed from reading intervention between August and December, as those data were excluded from the analysis. It is possible students were excluded from the study whose scores would have more positively impacted the overall average growth of this cohort.

Attention to duration is pertinent to understanding dosage, as master schedules often dictate exit windows for discontinuation of reading intervention. Building administrators feel compelled to keep students in intervention courses until the end of the quarter or the end of the semester. This becomes a type of de facto tracking, as it limits students' access to other content, further subjugating at-risk students from opportunities to engage with content that will help them grow their knowledge and their vocabularies, two critical elements of reading comprehension (Marchand-Martella et al., 2013; Wexler, 2020). Additionally, the practice of holding onto students works against the sense of

urgency we want to instill in both teachers and students. We want students to receive an intervention for the least amount of time possible, recognizing the lost opportunities to build knowledge and vocabulary when students are not in other content classes. In this sense, duration becomes a structural gate-keeper. Using the medical analogy, we would recognize the harm in keeping a broken bone in a cast beyond the time it was healed. Yet, we continue to hold students in reading intervention past the time when that intervention is warranted.

Dosage Summary. Interestingly, the studies read for this dissertation often included dosage notes as a cursory detail of the intervention design. Upon reflection, few included specific discussions about the dose in terms of frequency of teaching episodes, minutes of the teaching episode, or entire length of intervention, though these details were provided in the research design. Importantly, often the dosage was not summarily tested as part of the effect size. This dissertation illuminates the need for additional research on the impact of dosage on reading outcomes, with careful definitions of "dose" to include mode, potency, frequency, and duration.

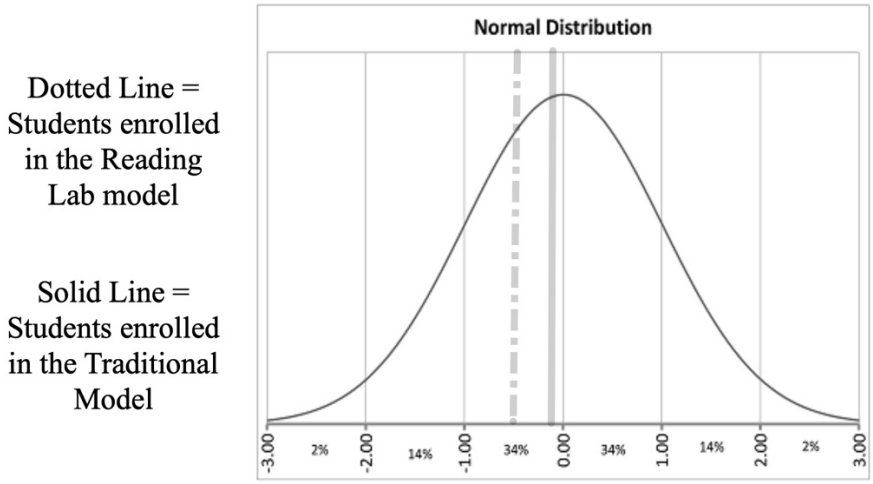
Beyond the Reading Lab: The Role of Intervention. The results for this research question go beyond calling out the reading lab model. A second major finding of this study is the data revealing students enrolled in reading intervention in grades seven and eight, regardless of the model, failed to outperform expected growth when measured by the MAP Growth Reading fall-winter Conditional Growth Index. While students in the traditional model nearly met expected growth (-0.05), neither group made the kind of gains that will substantially eliminate the achievement gaps.

If we are to make real gains in our intervention courses, students need to out-perform expected growth, or the gap persists. This is the role of intervention courses – to close the gap. If students only meet projected growth, they are merely maintaining the gap between themselves and higher-performing readers, a phenomenon referred to as the "Matthew Effect" (Stanovich, 1986). In 1964, Merton used the term "Matthew Effect" to refer to learning processes where early achievement drives increased rates of future learning (Stanovich, 1986). The opposite phenomenon happens when those who lag behind continue to show slower or less robust growth trajectories compared to their peers, further relegating them to performing well below those whose trajectories were initially potent.

For MAP Growth Reading, conditional growth is an indicator of a student's growth "relative to matching peers" (NWEA, 2023). The Conditional Growth Index number of zero signifies growth matched projections, while numbers above zero indicate growth exceed projections and values below zero indicate growth did not meet projections. As shown in Figure 11, the results of my study demonstrated students in the traditional reading intervention model met, or nearly met, conditional growth (M = -.05; standard error could account for the just below growth finding). Essentially, the traditional model cohort performed as expected, based on comparisons to other students who scored similarly to them in the fall. In this way, students in the traditional model cohort *maintained* the gap between themselves and higher performing students, given they, too, met projected growth. The gap did not close. Worse, students enrolled in the

Figure 11

Mean Conditional Growth Index Scores by Model



reading lab model did not meet projected growth – their growth was below others in their "group". For these students, the gap actually *increased*, given higher performing peers met their expected growth. To make real changes in the literacy trajectory of our students, we must offer the kinds of supports that will allow students in intervention to exceed projected growth, for this is how we close the achievement gap between the "haves" and the "have-nots".

RQ #3: Adding Definition: Students Report Generally Positive Perceptions

The summary growth data tells only part of the story. Phase Two of Illuminative Evaluation methodology, *Inquire Further*, allowed me to look at the students' perceptions of their reading intervention enrollment. The inclusion of student voices is aligned with the core values of the Carnegie Project on the Education Doctorate, which strives to address issues of equity and social justice through the dissertation process

(Perry et al., 2020). I analyzed the end-of-year perception survey results with anticipation, as I feel compelled to include student voice in this dissertation.

These end-of-year perception survey results indicate students reported generally positive experiences in reading intervention. The data did not reveal significant differences in perceptions of students enrolled in the reading lab or traditional model of intervention. Many students also expressed positive feelings about the teacher or their classmates on the open-ended question of the survey. This was somewhat surprising, as this was inconsistent with my observations during classroom visits.

To better understand these phenomena, I returned again to the literature review. In doing so, I recognized I had not considered choice theory or the reliability and validity of self-report measures in my literature review. The flexibility to address a new insight is perfectly aligned with the Illuminative Evaluation methodology that frames this study, and also aligns with the foundational principles of critical pragmatism. Recognizing I need to frame the findings from the student perception surveys within theoretical principles in order to make actionable recommendations to stakeholders, I offer a brief review of choice theory and self-report constructs here.

It is important to note that many people struggle to determine which is better if they only experience one part of the equation. In choice theory, this is known as the ambiguity effect (Muthukrishnan et al., 2009). A wise professor once used the metaphor of children leaving home to illustrate this concept. They only leave home once. They have nothing to compare their experiences against, and thus, they only know what they know. They are unable to rationally “rank” or “rate” that experience, for it is the only

experience they know. The ambiguity effect is a "cognitive bias where decision making is affected by a lack of information" (Muthukrishnan et al., 2009). This may explain some of the positive skew on responses asking students to agree/disagree on the Likert-scale portion of the survey. The students cannot be expected to articulate preferences when they only know their current reality. They lacked clarity about the additional options.

Relatedly, a careful examination of the limitations of self-report measures is also needed when interpreting the results of the survey. The Likert-scale portion of the perception survey prompted students to choose how strongly they agree/disagree with a series of statements. Self-report measures are open to reliability and validity bias, and researchers note it is nearly impossible to know exactly what is being measured in self-reports due to the outside influences including linguistic, psychological, and contextual variables (Betts Razavi, 2001). One particular bias in self-reports is negative affectivity bias, which is possible when the participant associates negative affects about themselves in relation to the items on the survey. In my study, this would be a concern if students felt self-conscious about marking strongly disagree or disagree to items such as "My reading has improved". This is related to social desirability bias, where respondents tend to represent oneself in a positive manner, whether consciously or unconsciously (Betts Razavi, 2001).

Another, real consideration for the positive skew on this portion of the survey is the innate power differential present. Teachers ultimately determine much of a student's experiences while within the confines of her/his classroom. Even though the information

explicitly stated student responses were confidential, teachers monitoring the room are exerting their power differential, if even subtly.

As I was not present when the survey was completed, I do not know if additional factors influenced this finding. Additional qualitative studies using semi-structured interviews would provide the kind of follow-up questions needed to unpack the Likert-scale item results, in order to determine if the results are actionable.

Additional Findings

In this section, I share two additional findings of this research. While I did not frame my study to specifically reveal these additional findings, Illuminative Evaluation sets an expectation that researchers will acknowledge and reflect on additional findings and include those in the outcomes of the study (Parlett & Hamilton, 1972). This flexibility to address what is revealed in the research is the power of Illuminative Evaluation as a research method, and further demonstrates its position within a critical pragmatic framework. Additionally, the Carnegie Project on the Education Doctorate supports the inclusion of additional research when new factors are illuminated, especially when doing so helps scholars "understand systems and processes that created inequities" (Perry et al., 2020, p. 33).

World Language

The end-of-year student surveys were of particular interest in my analysis. I immediately noticed one hundred thirty-six students (19.5%) indicated they would choose a world language course were they not enrolled in reading intervention. This is particularly important because world language is one of two classes offering high school

credit for students in eighth grade (personal communication, August 14, 2023). Taking high school credit-bearing classes in middle school allows students greater flexibility in class options at the high school level, and logically, increases the probability of on-time graduation, a critical part of this district's Board of Education goals. Students in reading intervention in grades seven and eight miss one of the academic connection "elective" type courses, such as world language. My research indicates a number of students would take a course that would help them meet high school graduation credit requirements. This enrollment in reading intervention, then, is an opportunity cost for many students the Board wants to reach.

Benefits of World Language Extended to Struggling Readers. Benefits of learning another language abound. Research indicates these benefits include increased achievement in academic subjects including English language arts, mathematics, science, and social studies (Abbott, 2018; Taylor & Lafayette, 2010). Fielding and Harbon (2022) posit the effects of bilingual education contributes to growth in reading, writing, and language convention skills. Reading skills include forming inferences, connecting ideas across multiple paragraphs, and identifying cause and effect, among other skills. Writing gains include areas such as spelling, punctuation, grammar, and the ability to write more complex sentences, express opinions, and provide logical arguments. Language convention skills include identifying grammatical and spelling errors, use of a variety of adverbs, prepositions, and conjunctions, among others (Fielding & Harbon, 2022). All of these are skills needed for English proficiency, and all of them contribute to a student's ability to critically create and consume text, a skill needed for life in a democratic

society. The benefits of learning a world language extend to include more generalizable skills in problem solving, executive functioning, and even memory (Abbott, 2018). Most importantly, research demonstrates learning another language builds capacity for compassion, empathy, and awareness of and tolerance of differences (Abbott, 2018; Taylor & Lafayette, 2010). Might students in reading intervention be better served, then, by a world language course?

Recently a large-scale study that included over 650,000 native and non-native English speakers identified a critical period exists for language-learning (Hartshorne et al., 2018). Hartshorne et al. found people need to begin learning another language by the age of ten-twelve in order to attain native-level fluency (2018). These findings support the importance of learning another language in middle school, indicating students experience a loss when they are not able to enroll in a language course in middle school due to their enrollment in reading intervention.

Additionally, students with weaker reading skills may benefit as much or more from enrollment in a world language course as they do in a reading intervention course, especially when motivation and student agency are also considered. Students who want to be in a class, such as when they elect to take a course, are more apt to be engaged, focused, and learn more, compared to when they are forced into a class they did not request (Cook-Sather, 2020). Most students do not “elect” a reading intervention course, particularly given the connotation that students in the class are “struggling”.

"Use the question to answer the question does not help at all"

As I reviewed the students' responses to the open-ended question included on the end-of-year survey, one comment particularly required attention. The student wrote "Use the question to answer the question does not help at all" (Response #55). This student, a young teen, was brave enough to call out a technique often employed in reading intervention courses designed to support students in constructing written responses to questions, and is an excellent example of knowledge blindness on the part of teachers. In offering support, we believe we are being explicit enough that our students will understand our messages, when many have no idea what we are trying to convey and lack the bravado, motivation, or perhaps energy, to inquire further.

Explicit Instruction. This student's response is important to frame within the literature on explicit instruction (Archer & Hughes, 2011). Researchers recognize the need for explicit instruction for all students, and most especially, for struggling middle school readers (Farkas & Jang, 2019). As outlined in Chapter 2, explicit instruction is a core method underpinning the four recommendations offered in the most recent publication from the Institute of Education Sciences *Providing Reading Interventions for Students in Grades 4-9* (Vaughn et al., 2022). Explicit instruction provides a "structured, systematic, and effective methodology for teaching academic skills" (Archer & Hughes, 2011, p. 1). Sixteen elements of explicit instruction have been identified by educational researchers. These include:

1. Focus instruction on critical content.
2. Sequence skills logically.
3. Break down complex skills and strategies into smaller instructional units.
4. Design organized and focused lessons.

5. Begin lessons with a clear statement of the lesson's goals and your expectations.
6. Review prior skills and knowledge before beginning instruction.
7. Provide step-by-step demonstrations.
8. Use clear and concise language.
9. Provide an adequate range of examples and non-examples.
10. Provide guided and supported practice.
11. Require frequent responses.
12. Monitor student performance closely.
13. Provide immediate affirmative and corrective feedback.
14. Deliver the lesson at a brisk pace.
15. Help students organize knowledge.
16. Provide distributed and cumulative practice. (Archer & Hughes, 2011, p. 2)

The systematic scaffolding of explicit instruction, flowing between maximum and minimum support, must be carefully tied to the needs of the learner and the teacher's knowledge of next steps (Farkas & Jang, 2019; Jimerson et al., 2007). In considering the student's statement, I believe this student is asking for explicit instruction in how to use the *strategy* to build the *skill* for composing written responses. Reading strategies are the "deliberate, goal-directed attempts to control and modify the reader's efforts to decode text, understand words, and construct meanings of text" (Afflerbach et al., 2008, p. 368). Reading skills, on the other hand, are the "automatic actions that result in decoding and comprehension with speed, efficiency, and fluency and usually occur without awareness of the components or control involved" (Afflerbach et al., 2008, p. 368).

The student clearly knows the phrase, and knows the action to take with the phrase, demonstrating the teacher provided direct instruction for the strategy. This student needs direct, explicit instruction to build their understanding of how *to use the strategy* to build the *skill* for answering questions in writing. Research indicates students' reading comprehension is strengthened when teachers use direct, explicit instruction in

the meta-cognitive strategies employing the discrete reading skills they are teaching (Afflerbach et al., 2008; Farkas & Jang, 2019). The inclusion of metacognition is critical to the ultimate goal of reading instruction: to build *skilled* readers who automatically employ specific *strategies* while reading a variety of texts (Afflerbach et al., 2008; Ciullo et al., 2016; Duke et al., 2017; Farkas & Jang, 2019). Cognitive skills are higher-order processing acts, and especially require the deliberate and specific use of direct instruction (Rupley et al., 2009).

Multi-tiered Systems of Support. Explicit instruction is also a foundational component of Multi-tiered Systems of Support, including Tier 1 instruction (Jimerson et al., 2016; Kim & Axelrod, 2005). As a reminder, Tier 1 instruction is universal, robust, core instruction offered to all students. Tier 1 content literacy for grades four – twelve includes, "Instruction for all students that addresses background knowledge, content vocabulary, comprehension strategies, goals for reading, and the reading/writing connections using classroom materials taught by content-area teachers in content classrooms" (Sedita, 2011). Here I return to the literature on the influence of poverty as a structural influence that results in "interdependent systems of disadvantage that multiply negative effects" to better understand why students lack access to Tier 1 instruction (National Academies of Sciences, 2023, p. 8–3).

It seems obvious that students living in poverty are likely to live in impoverished neighborhoods and attend schools that serve high proportions of students living in poverty. Often schools serving the highest proportions of students living in poverty also see the highest rates of discipline referrals, teacher turn-over, and weak instructional

practices (Carver-Thomas & Darling-Hammond, 2019; Cunningham, 2019). These variables perpetuate the structural inequities faced by students living in poverty, as students attending these buildings are more likely to lack access to strong Tier 1 instruction (Cunningham, 2019). The goal of Multi-tiered Systems of support is to prevent and remediate learning, making Tier 2 and Tier 3 interventions unnecessary (Wanzek et al., 2011). However, when Tier 1 instruction is interrupted, as happens when teachers are forced to address misbehaviors or when they lack the knowledge and skills to enact strong Tier 1 instruction, students are likely to require Tier 2 or Tier 3 supports.

While students in Breckinridge Public Schools have some freedom of "choice" regarding which school to attend, research recognizes the influences of structural racism that constrains families to impoverished neighborhoods (Milner et al., 2019). My own study included a framing of poverty through the lens of participation in the free and reduced meal program, which also serves to designate schools as Title-1 buildings. In essence, it is unwise to assume that a policy "allowing" students and caregivers the option of which school to attend is an actionable choice. Structural issues including transportation prevent access to those choices.

Readers will recall that all buildings using the lab model for reading intervention were designated Title-1 buildings, indicating students had numerous barriers to overcome. It is notable how casting the wide net to include nearly all students in grade seven in reading intervention places an additional barrier in front of students. This idea that all students need the intervention becomes another form of de facto tracking through the restriction of curricular options that have the possibility to ignite curiosity, grow

knowledge, and increase vocabulary. Importantly, the casting of a wide net runs counter to the efforts to position all students as capable. Rather, it reinforces the belief that "these kids (in Title-1 buildings) can't do grade-level work", leading teachers to expect less, accept less, and teach less effectively, continuing to further compound the structural influences of poverty.

Student Voice. Another important connection to research is the scholarly knowledge around student voice. The perception survey revealed students had opinions about the classes they would have enjoyed, as well as opinions about their experiences in reading intervention more generally. The data revealed no statistically significant differences between the two cohorts of students. Looking at the themes for the open-ended response provided insights into the experiences of our learners. This response telling us what is not helpful is helpful to those of us charged with curricular programming.

Those who design and support interventions must understand how students are experiencing the interventions they designed. Cook-Sather (2020) notes that including students in decisions that directly affect them allows students to develop agency in their learning. While this is important for all students, it is especially important for students from historically marginalized populations, for it allows students to develop a sense of agency in their learning, provides opportunities for students to feel their voices are recognized and valued which in turn teaches students how to "participate in civic life" (Cook-Sather, 2020). Farkas and Jang's study recognized the importance of examining

motivation and comprehension while respecting the voices of adolescent readers who struggle with reading" (2019, p. 2).

Rather than doing something TO our students, or designing interventions FOR our students, we must create interventions WITH our students while honoring both student voices and our expertise. This might include continued, regularly monitoring of student perceptions through a systematic process that allows students to share insights about their experiences. Additionally, exit surveys and surveys conducted at a future point in time might garner students' insights, which could then become a lens for curricular improvements and teacher professional learning.

Limitations

In this section, I address several limitations of this research, and why these limitations are inherent in the study. Students, like all humans, are extraordinarily complex creatures; as such, they are always more than a single score or a single outcome. Likewise, while I attempted to study variables in this dissertation, I did not, nor could I, identify all the variables that interact with student outcomes in reading intervention. In this section, I list the five limitations of this study I currently recognize.

Limitation #1: Short Window

First, we must recognize the short window for measuring growth. Although the MAP Conditional Growth Index attempts to account for this by setting a conditional growth index, research shows gains sometimes lag when measured on standardized assessments (Francis et al., 2022). It is possible students were making larger gains than what was realized on the MAP assessment, simply because standardized assessments may

lack sensitivity to report growth in relation to student's starting ability. Additionally, researchers found positive effect sizes are more likely associated with researcher-developed assessments compared to standardized assessments. They explain four reasons for this, including: "(1) alignment of the intervention with the assessment, (2) alignment of the conceptual framework with assessments, and (3) a psychometric perspective on alignment/misalignment across assessments [and (4)] measurable differences in the demands placed on readers" (Francis et al., 2022).

Limitation #2: Scope of Student Survey

A second limitation of this study was the scope of the end-of-year student perception survey. The time constraints for completing the dissertation did not allow for follow-up interviews of students. This study would be improved by allowing for semi-structured interviews to better capture the students' perceptions of reading intervention classes.

Limitation #3: Limited Study Population

A third limitation of this study is the limited focus on students enrolled in reading intervention in my district. While I am not attempting to generalize the findings beyond my district, Breckinridge Public Schools, additional voices need to be included to better understand the costs and benefits of reading intervention models more fully in middle school. This includes the voices of teachers, building administrators, and parents.

Limitation #4: Influence of Attendance

A fourth limitation of this research is the exclusion of attendance patterns as an independent variable. Students who struggle academically often struggle to maintain

regular, consistent attendance, and students who chronically absent often fail to meet learning targets, putting them further at risk for negative consequences (Balfanz et al., 2007; Pokhilenko et al., 2021). This confounding variable needs to be further explored in relationship to outcomes for the two models of intervention.

Limitation #5: Program Fidelity

Finally, an additional variable that may impact the outcome of this study is the attention to program fidelity. Robust reading interventions require teacher to be master teachers first. They must have the skills and mindset to meet students where they are, use systems and procedures to provide a safe, predictable learning environment, and implement literacy lessons with fidelity to student learning. The Basma and Savage (2018) study demonstrated the need for strong professional learning, consistent with the recommendations of (Coyne et al., 2018). Coyne et al., recognizing the need for strong professional development to support interventionists' fidelity to student learning, provided thirty hours of professional learning to interventionists prior to the school year, and additional support by literacy coaches throughout the year (2018).

Limitation #6: Disaggregating Data for Students Working in Special Education and English Learner Programs

Another confounding variable that poses a limitation to this study is the influence of students served in special education and those served in the English learner program. As the current study did not disaggregate the data to include these variables, it is possible some of the scores are unfairly influences by these factors.

Research indicates students served in special education programs represent extreme variability in performance as they advance through the grades. This was originally termed the "Matthew Effect" in the 1980s, to refer to the way in which small differences in reading abilities increase over time, as the "rich get richer and the poor get poorer" (Stanovich, 1986). This metaphor continues to be used today to describe the ways in which the gaps between struggling readers and proficient readers increases over time.

Likewise, the literature on students learning English suggests students' performance on standardized tests is dampened by their English proficiency. Researchers agree that large gaps exist when looking at performance outcomes between English learners and their native-speaker counterparts (Lane & Leventhal, 2015). These differences in outcomes are attributable to language proficiency and educational and cultural backgrounds. The complexity of assessing English learners is compounded by the fact that many English learners live in neighborhoods with more affordable housing, and the myriad inequitable access to resources that stems from this situation. As a result of "problems with the screening process, invalid assessment instruments, the belief that language differences constitute a disability, [and] accountability pressures," English learners are increasingly overidentified as students with learning disabilities (Lane & Leventhal, 2015). Given that the three buildings employing the reading lab model, all with Title 1 designation, are also English learner "sites" in Breckinridge Public Schools, the influence of English learners needs further investigation.

Implications as a Call to Action

An important function of Illuminative Evaluation methodology working within the critical pragmatic perspective is the answering of "so what". I now turn to the action that ultimately drives this study. The implications of this research require decision-makers to reconsider how to address low-literacy rates among middle school students. The ultimate goal of the Dissertation in Practice is the development of researcher practitioners who influence organizational decision-makers to act on the systems that caused and perpetuate problems within their respective practices (Perry et al., 2020). In this section, I outline the implications of my findings as a call to action for various stakeholders, including district decision-makers, building administrators, teachers, caregivers, and college professors. Ultimately, each of these stakeholders is driven to support students, yet no single group can do the work alone. Much like Scarborough's Reading Rope, each stakeholder group is influenced by the strength of the other strands. Figure 12 is a visual representation of the inter-relatedness of each of these roles, as each group both influences and is influenced by the others. Identifying the best way to support adolescent readers is a complex and multi-faceted problem of practice, demanding integrated action in order to expedite the solution for middle school students.

District Decision-Makers

The Board of Education, in enacting Board Policy 6210, is one driver within the system that needs to be reconsidered. This policy, specifically addressing reading intervention in middle school (grades 6, 7, 8), reads: "students who have not met district

Figure 12

The Many Strands of Student Support

reading and math criteria will be required to take additional reading and math until the criteria are met" (Board of Education, 2022). A major emphasis on equity undergirds the entire district's work, and one of the board's goals is to increase on-time graduation and to increase enrollments in advanced placement and differentiated courses. These equity goals are incongruent with Board Policy 6210, as the robust, positive effects for students in reading intervention were not found. The Board Policy further runs counter to the findings from this investigation, given the overrepresentation of students of color, males, and students participating in the free and reduced meal program. The over-representation of any specific group of students in intervention calls into question the systems currently in use for identification into and out of intervention courses. When we see increased proportions of students of color, male students, and students participating in the free and reduced meal programs (an indication of poverty), we must be cautious about accepting this as a logical necessity. I call on the Board to reconsider the necessity of this policy.

I call on curriculum specialists and coordinators to reexamine the entry and exit criteria, and more importantly, to provide additional support to teachers in *using* the criteria for identifying students into and out of intervention courses. Placement decisions into and out of reading intervention are complex and multifaceted. Beyond the bias inherent in formalized assessments, students are often placed into reading intervention based on "informal judgements of youths' motivation, behavior, and/or engagement" (Learned et al., 2022, p. 511). This type of placement process results in a student's identification for reading intervention intricately tied to factors including motivation and behavior, and positions students in intervention as deficient (Learned et al., 2022).

As discussed earlier, potential bias is inherent in nearly every measure used for placement into and out reading intervention. Teachers need continual support to integrate multiple sources of information into decisions about who goes in and who comes out of reading intervention. This is especially true given evidence that students sometimes do poorly on entry and exit tasks because they do not fully understand the "high stakes" nature of those tasks (Learned et al., 2022).

Differences in teacher judgements account for differences in intervention enrollment for particular groups (Learned et al., 2022). Researchers have indicated teachers need additional support and training to more accurately identify student learning needs (Girvan et al., 2017; Ritter & Anderson, 2018; Skiba et al., 2002). When teachers do not know how to support the needs of lower-performing students, they are apt to identify the student for intervention (Vaughn & Fuchs, 2003). Research indicates the important role entry and exit criteria play in a student's access to courses (Brooks &

Rodela, 2018). For these reasons, district curriculum specialists and teacher leaders need to intentionally provide ongoing support to teachers tasked with identifying students for intervention, and carefully interrogate those identifications through an equity lens.

I call on district curriculum developers, including teacher leaders and coordinators, to include student voice in the framing of curricular work. The importance of student voice is emerging in the field of educational reform research, and is worth noting here as the findings of the end-of-year perception surveys indicate our students have important thoughts to share with us. Relatedly, research indicates a clear connection between students' sense of agency, motivation and engagement in reading when their voice is represented (Sedita, 2011). Cook-Sather notes a strong relationship must exist between student voice and student agency, which she defines as the "students' ability to exert influence in their learning context, to transform their own and others' learning experiences, and to expand learning" (2020, p. 182). Cook-Sather cites studies that demonstrate the power of student voice and agency (or action). This includes fostering more civic engagement, including perspectives of disenfranchised populations, and co-creating more socially just educational spaces that reflect the needs of all students, especially those from historically marginalized populations.

Student voice is consistent with the work of Paulo Freire, who wrote: "By sharing power with students, by listening to them and seeking to follow their advice . . . educators, researchers, and policy makers are more likely to promote contexts through which the voiceless have a voice, the powerless have power. . . ." (1994, p. 491). Mitra (2018) conducted research on student voice, specifically in urban secondary schools, and

found student voice improves implementation efforts and classroom practices. Student voice that includes student action (agency) is one avenue for addressing the goals of "all means all" in relation to equity work done in Breckinridge Public Schools, and importantly, one way we may transform our intervention courses for the better.

Building Leaders

Building administrators ultimately determine whom to delegate the task of enrolling students into reading intervention courses. As a district, leaders at Breckinridge tried to mitigate the influence of subjective teacher judgements by including MAP Reading scores in the criteria for placement in reading intervention. Leaders did not intend to supplant other data through MAP scores, only to round out the data to provide a more complete picture of the student. Based on conversations with numerous teachers and leaders across the district, I believe some buildings position MAP Reading scores as the ultimate, single determining factor in identification for reading intervention in middle school, ultimately ignoring the inherent bias. Notably, researchers have found standard deviations on standardized assessments tend to be larger for males compared to females, suggesting that an arbitrary cut-score may naturally include more males than females for intervention (Quinn, 2018). This gender bias in testing may then account for the higher numbers of males (especially male students of color) identified in reading intervention in middle school. Building leaders must carefully consider the skills of teachers assigned to recommend students for reading intervention, in order to continue to push for more equitable placement decisions.

I call on these building leaders to thoughtfully hire and assign intervention teaching assignments to the most skilled practitioners. Teachers need time to develop expertise in teaching reading intervention, and research demonstrates a direct relationship between student achievement and teachers' growing skill and confidence in curriculum implementation (Troyer, 2019). The lower realized growth seen in the MAP scores for students in the reading lab buildings may well be influenced by the lower level of expertise teachers in these classes have, as many have primary teaching assignments other than reading. The research literature suggests it is unreasonable to expect content area teachers to have the expertise needed to support below-level readers, as this expertise is beyond the training and interests of secondary content-area teachers (Torgeson et al., 2007, as cited in Sedita, 2011).

Building leaders can influence the demographics of reading intervention by carefully hiring content area teachers who can offer the best of Tier 1 instruction. Sedita found a consistent theme in her review, noting that "content literacy skills, taught by content-area teachers, using subject-specific reading materials, and embedded in content-area instruction are essential for improving adolescent achievement" (Sedita, 2011, p. 5). Building leaders, then, must consider content area hiring in light of these recommendations, and hire teachers who have the capacity to position all students as readers within their particular content. In essence, this will provide a steady diet of strong literacy instruction that may decrease the number of students needing reading intervention, especially those who were overrepresented in the current study.

Research suggests enrollment in reading intervention courses is akin to de facto tracking (Brooks & Rodela, 2018; Learned et al., 2022). Students in reading intervention are systematically denied access to other courses, usually an elective such as world language, which has ramifications on students' high school and post-secondary opportunities. Additionally, students enrolled in reading intervention often proceed through their day *en* masse, as structural elements including master schedules influence course selections. I call on building leaders to adapt master schedules to allow more flexible groupings of students, especially in regards to exiting interventions. At this time, students who meet exit criteria are often left to linger in intervention courses until a "convenient" window opens, typically the end of the quarter or semester. This runs counter to the philosophy of intervention, whereby students experience robust, direct instruction for the shortest time possible, in order to return to Tier 1 instruction.

Intervention is intended as a corridor – not a classroom. Student agency and motivation may be a factor, again, in the lack of accelerated growth across the district. Students deserve to experience a direct relationship between their efforts, achievements, and opportunities to enroll in other classes. Being held in an intervention beyond the time it is needed is a form of de facto tracking, and is most concerning in light of the overrepresentation of students of color, males, and students participating in the free and reduced meal program. This is especially concerning in schools using the reading lab model, all of them designated Title-1 schools, where reading intervention is a class for all students in grade seven, and where so many students represent historically marginalized populations. Students would like to participate in other content area courses, as evidenced

by the end-of-year perception survey. They are missing not only the enrichment opportunity, but the opportunity to grow their knowledge of the world and their vocabulary, two strong predictors of reading comprehension (Scammacca et al., 2007; Sedita, 2011; Wexler, 2020).

Building leaders have great influence on the quality of Tier 1 instruction through both informal and formal teacher support that extends beyond the decision of whom to hire. This includes providing professional learning that deepens teacher knowledge and pedagogy. Additionally, a clear focus on student learning and best practices should be reflected in teacher appraisals, thereby diminishing the proportion of students needing reading intervention.

Knowing high poverty schools enroll high populations of students from historically marginalized communities, we are participating in perpetuating the problem of poverty, asking students to give up opportunities (to take other classes of interest) to be enrolled in intervention that does not adequately support their reading growth. Students are being penalized, through a limitation in their course opportunities, to explore their world, developing rich background knowledge and vocabulary that we know to be necessary for strong comprehension. This research indicates Title -1 buildings employing the reading lab model for intervention are perpetuating systemic biases that further prevent access to strong literacy instruction by the very framing of the model. The problem becomes cyclical when low enrollment in enrichment courses (due to reading intervention) leads to the restriction of enrichment courses due to funding and staffing. This is a systems-level problem, and I call on building administrators employing the

reading lab model to discontinue the practice of including the majority of students in grade seven in intervention at the end of the school year. The model is not serving our students, some among the most fragile in our district. With this model, the data from my study reveals students are failing to meet projected growth, further indicating the gap is growing even wider.

Teachers

Teachers in the reading lab model lack access to on-going, targeted professional learning for reading intervention when their core teaching assignment is not reading. As outlined in the literature review, effective professional development for teachers in secondary classrooms, especially those tasked with supporting students' ability to read, must be robust and ongoing, in order to keep teachers fully up to date on research-based best practices (Bartholomew & De Jong, 2017; Baye et al., 2019; Sousa, 2017). Increasingly, teachers' full plates make it difficult for them to appropriate adequate time preparing and planning for classes that are only a half of a period or that only meet every other day. Without the structured time spent on honing their craft, as is done through effective professional development, teachers may not have the energy or the initiative to grow their knowledge of literacy, pedagogy, or research that influences students' literacy growth.

I call on teachers to avail themselves of the resources provided to them. This includes using the curriculum provided to them, participating in the professional development planned for them, and reflecting on the feedback provided them by district teacher leaders and coordinators. I call on teachers to implement curricula with an eye

towards best practices for explicit instruction and fidelity to student learning. Students need to be reading to become more skillful readers. They need carefully scaffolded support “just in time” that is also intentionally removed to promote student independence. Our use of a scripted curricula offers teachers latent support in using explicit instruction. Neither an over-reliance nor an under-reliance in a solid curriculum will support the growth of teachers or students (Troyer, 2019). The explicit instruction built into the scripted curriculum is intended to build the expertise of both teachers and students, and should be positioned as a scaffold rather than a burden.

Resources are provided to teachers intentionally, considering both the needs of students and the needs of the teachers who lead them. The scripted curriculum models explicit instruction, using a gradual release of responsibility model. The teacher manual guides teachers through the explicit act of teaching students’ strategies to build skills, and provides actionable resources for teachers when students do not respond as expected. The scripted curriculum is an essential resource *for* teachers. Rather than dismissing the curriculum as a Draconian burden, teachers should embrace the curriculum as an important component of their “teacher toolbox”. The science of teaching students to read is embedded in the teacher’s manual. The expectation is for the teacher to find artful ways to enact that curriculum, always with fidelity to student learning. This is enhanced and supported through partnership with district teacher leaders and coordinators, who must also work with fidelity to student learning.

Further, I call on teachers to use district pacing guides. It is increasingly concerning that we have reading intervention students finishing a Chapter 1 assessment

while others are ready for Chapter 4. Given the mobility rates of some of our most fragile learners, many of whom we serve in reading intervention, it behooves teachers to more uniformly pace instruction. Even when students remain in a particular building, it becomes an equity issue when some students are offered the urgent, brisk pace needed in intervention and others not. The purpose of the district pacing guide is to provide a guaranteed and viable curriculum across the district, to ensure all students have equitable access to learning. The lack of opportunity to learn may be reflected in the diminished realized growth identified in this study.

Disrupting Disparate Discipline Practices – Before/During/After Intervention. Research indicates males, especially male students of color living in lower socio-economic status neighborhoods, receive harsher punishments for misbehaviors compared to their female counterparts (Jacobsen et al., 2019; Losen et al., 2015; Losen et al., 2018; Morris & Perry, 2016; Ritter & Anderson, 2018). This punishment often leads to exclusionary practices, which may include missing a single class period, suspension, or even expulsion, ultimately resulting in less access to Tier 1 instruction (Anderson et al., 2007; Khalifa, 2018). Consequently, more students are identified for reading intervention due to a maladaptive behavior (whether real or perceived) that restricts access to strong Tier 1 instruction. It is up to teachers to break this cycle of inequitable behavior practices, and I call on teachers to partner with family communities to better align our goals, our words, and our actions.

If we are going to alter the educational experiences of students in middle school in ways that promote the district equity goals, including increasing on time graduation rates

for all students, we must not settle for "meeting expected growth" through an intervention model. We must ensure students are *exceeding* expected growth, or our efforts fall short.

Caregivers

The findings revealed in this study also have implications for our students' caregivers, who ultimately have the power to waive students out of reading intervention in the middle school grades, although this option is less viable in the schools using the reading lab model where all students receive an "extra" dose of some form or reading. Caregivers must carefully consider the needs of their child in light of the findings that neither intervention model produced the desired results. They must make informed decisions about where to enroll their student if this "waiver option" is not viable, as when the reading lab model becomes part of the overall master schedule. Again, considering this is happening in buildings where caregivers often feel the least impowered to advocate for their students (Khalifa, 2018), questions of equity emerge.

Teacher Preparation Programs

I call on higher-education professors and program developers to consider their role in addressing reading intervention as well. Specifically, I call on teacher education programs to restructure the program of studies for students pursuing secondary teaching certificates, and I call on them to reconsider the overt and covert corruption of curriculum ubiquitous across my doctoral journey.

The secondary teacher preparation programs must include intentional focus on how secondary teachers can position students as readers within their particular content. This requires an unpacking of the metacognitive strategies used to read within a

particular content. Additionally, programs should intentionally and unapologetically drive the narrative that reading achievement is the responsibility of all teachers. The Carnegie Council on Advancing Adolescent Literacy proposed all content teachers possess, at a minimum, working knowledge of:

- How literacy demands change with age and grade
- How students vary in literacy strengths and needs
- How texts in a given content area raise specific literacy challenges
- How to recognize and address literacy difficulties
- How to adapt and develop teaching skills over time. (Carnegie Council on Advancing Adolescent Literacy, 2010, as cited in Sedita, 2011, p. 13)

By growing secondary teachers' skills and capacities as reading teachers within a specific content area, we will better position all students as capable readers, again, diminishing the number of students who need additional reading intervention. Notably, an essential requirement to being academically literate is the ability to read content-area text (Marchand-Martella et al., 2013). The time students spend in reading intervention is, at best, one-seventh of their day. Increasing students' access to literacy through content area courses has the power to exponentially increase the amount of reading they do in a single day, which is also highly regarded as a driver of reading achievement (Duke et al., 2021; Fisher et al., 2016; Stanovich, 1986).

I call on higher-education professors to ensure that all elementary teachers graduate college fully equipped with the knowledge and skills to teach elementary students how to read. Providing strong, robust Tier 1 instruction at the elementary level will decrease the number of students entering middle school needing reading intervention. Research repeatedly shows the value of strong Tier 1 instruction and the

value of *early* intervention in preventing long-term reading difficulties (Balfanz et al., 2007; Jimerson et al., 2016; Kilpatrick, 2015; Moats, 2020; Moats & Tolman, 2019; Shapiro, n.d.).

I call on higher-education professors to reconsider the messages they send, in both subtle and overt ways, that devalue scripted curricula. Given secondary teachers lack sufficient skills and knowledge on how to support fragile readers, scripted curricula can provide a much-needed scaffold. Helping teachers uncover the pedagogical and theoretical basis underlying strong curricula would help preservice teachers see the scripted curricula as a useful tool, rather than one to summarily disregard. Building and district leaders are striving for fidelity to student learning, and their careful selection of curricular materials are drivers in that initiative. New teachers, and even more veteran teachers, who have been "taught" to abhor published curricula, but who simultaneously lack the knowledge or skills to teach students how to read put increasing numbers of students at risk for reading failure.

Questioning Assumptions: Education Researchers

The results of this research are disappointing when looking at the outcomes of reading intervention in our district. A major implication of this study calls into question the value of middle school reading intervention. I began this dissertation journey wanting to know more about the influence of two models of intervention. With this part of the research project coming to a close, I am wondering if we are asking the right questions? Am I, as a scholarly practitioner, supplying the right kind of information?

Here I call on education researchers to carefully consider the myriad and compounded influences of race/ethnicity, gender, and poverty (as reflected by free and reduced meal program participation) have on students in our schools. Rather than conducting research to identify the best intervention models, programs, teachers, or curricula, our students might be better served if we shift our attention to investigate what can be done to address low reading levels beyond the confines of an intervention course.

Summary Remarks

This dissertation research builds a case that middle school reading is doing more harm than good. We are marginalizing the opportunities for the very students our Board of Education is asking us to address. While we know the human brain has limitless capacity to learn, and no deadline exists to describe when it is "too late" to learn to read, we do know it is easier to learn to read at an earlier age (primary grades) compared to later grades. This is not due to some physiological shortcoming of the human brain, but rather the myriad additional, compounding, and competing factors that influence learning to read at later grade levels. Dehaene, in *Reading in the Brain* (2009), articulates the challenges inherent in learning to read and the monumental changes the brain undergoes when it does learn to read — a wholly unnatural process.

What makes it so much more difficult in the later grades is the development of additional barriers. Beginning in early adolescence, we know students shift their attention away from teachers as mentors and towards peers, many of whom are very much less "mentor-like" than adults' desire! The implications of this study lead us to look for additional ways to address the problem of low-literacy proficiency in our students. As I

identified earlier, Breckinridge Public Schools serves disproportionately large numbers of males, students of color, and students participating in free and reduced meal programs. Any intervention, then, targeting reading intervention, must keep in mind the educational fragility inherent in this population. Research tells us male students, students of color, and students who participate in free and reduced meal programs are at greater risk of dropping out of high school, being involved in school disciplinary actions, often exclusionary, and are overrepresented in juvenile justice programs (Khalifa, 2018; Milner et al., 2019; Wicht et al., 2021).

Opportunities

Before making substantive changes beyond the discontinuation of the reading lab model, additional research is needed to confirm or refute this dissertation's findings. The studies I propose include the following:

1. Replication studies are needed to identify if the findings identified in this dissertation study hold true for additional cohorts of students. These replication studies should also include the descriptive analysis to determine whether we (Breckinridge Public Schools) continue to over-represent historically marginalized populations (including males, students of color, and students participating in free/reduced meal programs) in our reading intervention programs, and if this is warranted.
2. A longitudinal study is needed to identify long-term effects of enrollment in reading intervention, particularly the two models currently in use in Breckinridge Public Schools. These longitudinal studies should seek to

identify additional gains/costs to students that may not be noticeable from fall-winter benchmarks. We know that reading gains often happen incrementally, and it may be our fall-winter comparison did not allow for the full impact of reading intervention to be detected on the MAP Reading Conditional Growth Index.

3. Qualitative studies are needed to better understand the experiences of students served in middle school reading intervention programs. The results of these studies should be carefully considered alongside the results of this and the aforementioned studies, to better illuminate the costs and benefits of enrollment in middle school reading intervention programs. These studies would be improved through longitudinal case studies, again looking for realized costs and benefits of participation in middle school reading intervention that may not be noticeable in a single school year.
4. A longitudinal study is needed to understand the long-term implications of middle school reading intervention. Are students more or less likely to graduate on time? Do students who experience reading intervention in middle school continue in an upper or lower tract? How do the long-term outcomes differ from the two models? I suggest grounded theory would allow us to develop a better understanding of the experiences of middle school students in reading intervention.
5. Grounded theory would allow us to interrogate the experiences of students served in middle school reading intervention programs, allowing us to identify

themes that can help us frame the costs and benefits — the intended and iatrogenic consequences — as experienced by our students.

6. Research additional confounding variables, including the influence of attendance on outcomes within the two models of reading intervention.

A Better Way Forward

My understanding and belief in the value of literacy remains unchanged. I believe literacy CAN be a road to a brighter future. I find nothing in the current research literature indicating a specific "cut-off" time in learning to read. In fact, just the opposite is true. Why, then, is reading intervention during middle school so complicated? I believe it is due to the competing influences of human growth and social development, and the compounded influences of institutionalize and systemic inequities in and out of our schools.

The conclusions I have drawn from this dissertation now lead me in a new direction regarding how to advocate for and support the literacy needs of middle schoolers in Breckinridge Public Schools, even while my sense of urgency persists. While I am not a decision-maker, I continue to feel responsible for the 1,200 students enrolled in reading intervention in grades seven and eight each year in my district. As such, I call on district leaders and stakeholders to support further inquiry into the costs and benefits of reading intervention at the middle school level, including student, parent, teacher, and administrator voices in that study. Forcing students to enroll in an intervention course may be the wrong solution to the right problem of low literacy

rates. Perhaps a better outcome, at least an outcome that would incur less costs to students, our most important stakeholder, is five-fold.

First, we must ensure that all students have access to strong Tier 1 reading instruction from kindergarten through high school graduation. The goal, always, is to maximize the learning of all students in Tier 1 instruction, limiting the need for students to be included in intervention. This requires teachers to have firm knowledge of content, strong pedagogy, and culturally responsive teaching strategies. Scholars note what when 20% or more of the students need intervention, a return to core instruction is needed, not an intervention (Bartholomew & De Jong, 2017).

Second, at a systems level, we must interrogate our disciplinary practices, which are often tightly entwined with unconscious biases and systemic racism that are so ubiquitous they are ignored. This would increase the number of students moving into middle school with proficient literacy skills, minimizing the number of students needing intervention, and ultimately setting all students onto a path of greater academic achievement.

Third, we must ensure teachers across K-12 education have foundational literacy development understandings and the skills and knowledge to support continued literacy growth for all students in their classes. Many secondary teachers lack this skill and knowledge (Marchand-Martella et al., 2013). As a result, teachers position teaching curriculum or subject matter above teaching students. This leads to false assumptions, lower expectations, and lower literacy growth. When all students, in every class, are

asked to read, interpret, and critically and carefully analyze the messages within that content, we collectively elevate the proficiency of all students.

Fourth, the we must build robust reading intervention programs that align with the recommendations of the Institute of Education Science. This includes direct instruction to support decoding skills that enable students to read complex, multisyllabic words; purposefully incorporating activities to build reading fluency, promoting the prosodic nature of reading that aids in comprehension; explicit instruction on the use of comprehension building strategies with purposeful attention to explicitly teaching students how to leverage those strategies to become skilled readers; and inclusion of challenging texts, providing scaffolded support as needed (Vaughn et al., 2022). These recommendations should be the focus for professional development. This would have a greater impact if that were done at both the building and district levels, and across all grade levels, as research indicates this is the most effective way to leverage professional development to improve our teaching practice (Darling-Hammond et al., 2017, 2019).

Finally, as research practitioners, we must advocate for continued exploration of the factors that motivate and demotivate students beginning in grade seven through graduation. Once we know those variables, we must minimize the social and emotional costs to students while maximizing their learning opportunities. This requires teachers to be equipped with the funds of knowledge regarding learning and motivation, and the time and support to meet students where they are while not allowing them to stagnate at a particular “location”.

Closing Remarks

In closing, I share my growing concern that we as stakeholders, influencers, and decision-makers are addressing a legitimate concern with a less legitimate solution. While we are recognizing a true problem of practice, the low literacy rates of middle-school students, we are quick to assume intervention classes, in either form, will adequately move the needle towards proficiency. We fail to ask the hard questions of our *students* that might better enable them to reach their full potential in literacy. While we tout the importance of building relationships with our students, we continue to quiet their voices in programming that impacts them. We fail to recognize the unintended consequences of middle school reading intervention and the *costs*, both to students and communities, of those programs.

As adults, we have the obligation to do better when we know better. Identification of students for whom reading is difficult is a step but placing all the students into specific intervention courses for a year, two, or more years at a time is a significant opportunity cost to those we most want to influence — our students. Identification can aid us in addressing these low skills, but only if we ensure we use that identification to serve students. In many classrooms, low literacy proficiency becomes an excuse for low achievement. We simply cannot continue to expect less of our students, accept less from them, and wring our hands about how to "fix" them.

The results of this dissertation have only increased the burning sense of urgency I felt when I began this journey. Rather than finding solutions, this research helped me recognize we must confront our own misinformed decisions about what is best for our

students, our most important stakeholders. I truly began this project believing that the reading lab model was insufficient compared to the traditional model. With the findings I revealed, my focus shifts to questioning whether we need a model of intervention at all. I am left wondering how we might infuse strong, robust literacy support for all students through strong Tier 1 instruction. I leave readers with this: While we have identified a worthy problem to be addressed (students reading below proficiency levels in middle school), how might we reimagine solutions that will solve that problem while limiting the negative consequences of such action, ultimately interrupting the systemic reproduction of racism that continues to permeate our schools?

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Appendix A

End-of-Year Student Survey

Default Question Block

We want to better understand the experiences of reading students in . Please complete the following survey. The results will be used to evaluate how we serve students and how reading classes impact students. All results will be anonymous. No personal information will be shared publicly.

What reading course are you taking?

- ○
- ○
- ○

Block 1

Where do you go to school?

- ○
- ○
- ○
- ○
- ○
- ○
- ○
- ○
- ○
- ○
- ○
- ○

What is your grade level?

- ○ 7th
- ○ 8th

Did you attend more than one middle school this year (e.g., change schools)?

- ○ Yes
- ○ No

Block 2

Please indicate how strongly you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree	Not sure
I believe I can be successful in my reading class.	○	○	○	○	○
I am confident I can improve my reading skills.	○	○	○	○	○
I think my reading class is helpful.	○	○	○	○	○
I enjoy my reading class.	○	○	○	○	○
I have to give up too much to be in my reading class.	○	○	○	○	○
I struggle to stay motivated in my reading class.	○	○	○	○	○
My reading has improved since the beginning of the year.	○	○	○	○	○

How often are you engaged in your reading class (on task, thinking about the topic, doing the work, etc.)?

- ○ Never
- ○ Almost never
- ○ Sometimes
- ○ Almost always
- ○ Always

If you were not in reading class, which class would you have chosen?

- ○ Art
- ○ AVID
- ○ Business or Computer Technology
- ○ Contemporary Communication/LACA
- ○ Drama
- ○ Family and Consumer Science (FCS)
- ○ Health
- ○ Industrial Technology
- ○ Music, band, or orchestra
- ○ PE
- ○ Publications (Yearbook)
- ○ World Language (Spanish, French, Chinese)
- ○ [ ] Other

Block 3

What else do you want us to know about your experience in a reading class? (Optional)

Block 4

Please provide some information about yourself. If you prefer not to answer any question, please skip it.

What is your race/ethnicity?

- ○ Asian
- ○ American Indian or Alaska Native
- ○ Black or African American

- ○ Hispanic
- ○ Native Hawaiian or Other Pacific Islander
- ○ White
- ○ Two or More
- ○ Prefer not to say

Do you consider yourself a person of color?

- ○ Yes
- ○ No
- ○ Prefer not to say

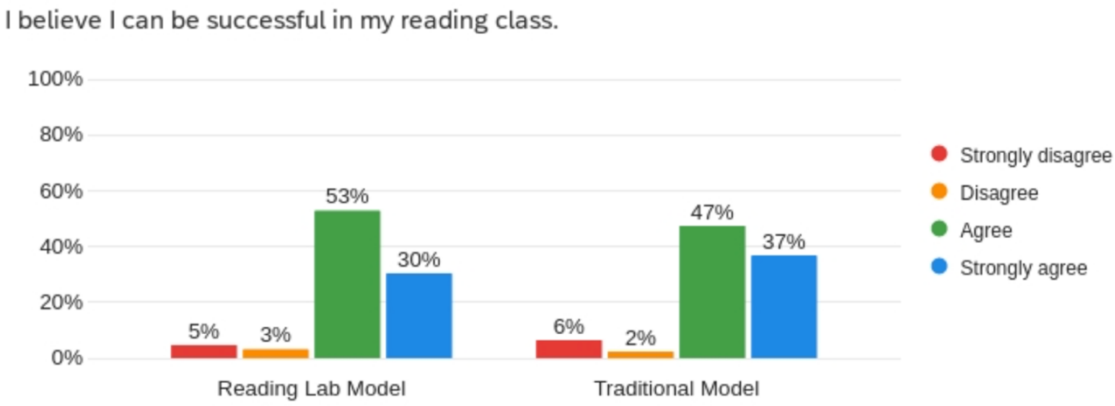
What is your gender?

- ○ Male
- ○ Female
- ○ [ ] Other
- ○ Prefer not to say

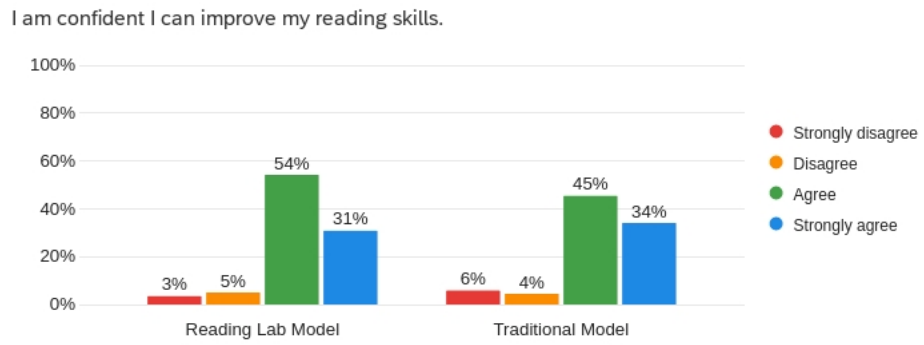
Appendix B

Graphic Representation of Student Responses for Survey Part 1: Likert-Scale

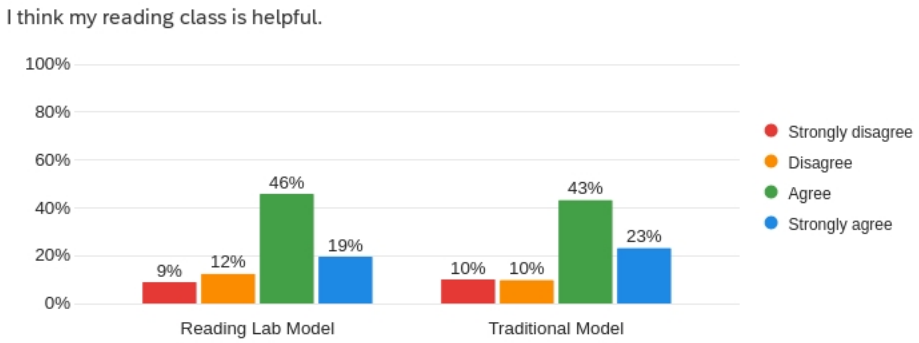
Item 1: I believe I can be successful in my reading class.



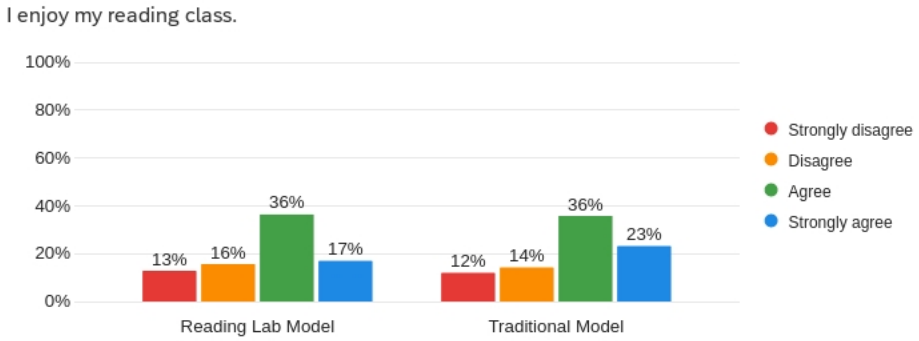
Item 2: I am confident I can improve my reading skills.



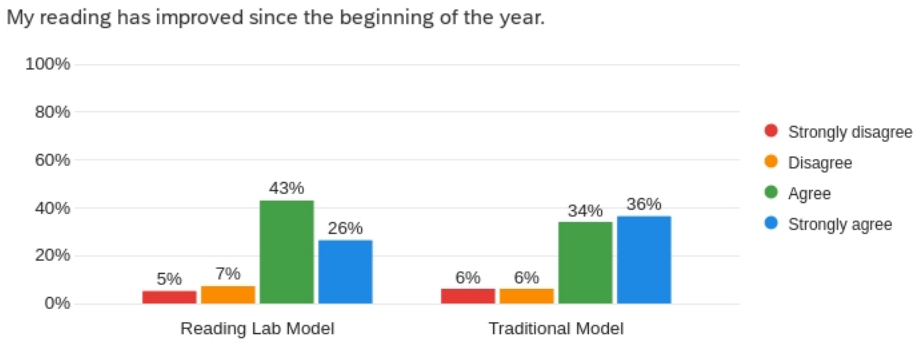
Item 3: I think my reading class is helpful.



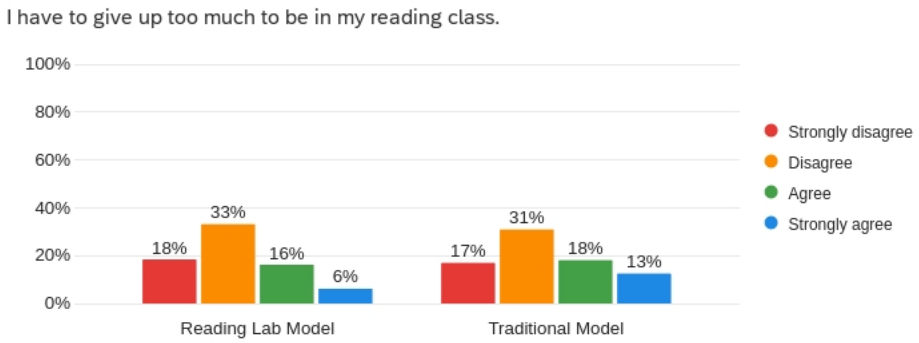
Item 4: I enjoy my reading class.



Item 7 (relabeled Item 5): My reading has improved since the beginning of the year.



Item 5 (relabeled Item 6): I have to give up too much to be in my reading class.



Appendix C

Illustrative Examples of Open-Ended Responses on End-of-Year Survey

This appendix provides examples to illustrate the categories used to quantify the student responses to the open-ended question on the end-of-year student perception survey. The specific question asked: *What else do you want us to know about your experience in a reading class? (Optional).*

Helpful

Yes

- Ever since I got in this I have improved in my reading and I can sound out words easier then [sic] I could before (response 408)
- I feel good because my ready [sic] level is growing and getting better (response 536)
- Its my favorite class its fun and teaches me at the same time [sic] response 238

No

- I don’t like my reading class and i don’t think i need it because i am already really good at reading and i don’t need it [sic] (response 471)
- I hate that it takes up my time and I think that this class is very pointless (response 414)
- I think it didn’t help the stories sucked i did not learn much as I learned it in other classes the stroies did not help me or my class mates improve our reading (response 237)

Positive Attributions

To Self

- I do very very well in my reading class (response 249)
- Hard working helps me in reading class [sic] (response 360)
- I have learned enough English and I am sure that I can improve a lot by myself by practicing (response 379)

To Teacher

- My reading lab teacher is amazing! (response 264)
- The teacher is good she is nice to us [sic] (response 321)
- I have had an amazing reading teacher in my class throughout my whole school year. (response 420)

To Class

- ..I like being in this class im going to miss it [sic] (response 487)
- It has been really fun and I like to engage and read to people who come visit our class. And I got a chance to learn new things in this reading class. (response 421)
- Is it fun because i get to see (student name) and my other friends (response #196)

Negative Attributions

To Self

- Im slow [sic] (response 595)
- I struggle a lot in reading. [sic] (response 21)

- …I feel like I cant learn [sic] (response 469)

To Teacher

- I feel that sometimes {teacher name} is unfair and goes by feeling not mind [sic] (response 153)
- I dont like my teacher [sic] (response 363)
- The teacher can be rude sometimes. (response 609)

To Class

- This class sucks and no one wants to be here bum book change it right now [sic] (response 139)
- I don't really like it (response 34)
- I hate it (response 320)

Rigor of Class

Too easy

- It's to easy [sic] (response 17)
- I think is pretty easy just read and answer some questions and then your done [sic] (response 30)
- My reading class is super easy. (response 105)

Too challenging

- Its too much work [sic] (response 409)
- Its hard (response 109)
- …its so stressful and were forced to do stuff we don't like [sic] (response 627)

Prevents from taking other classes

- That i never got my class i wanted cuz of my reading and math [sic] (response 501)
- …i wish i wasn't in this class cause i would do a bunch of other fun classes … [sic] (response 224)

Desire to not have reading class

- It sucks i hate the feeling of being dumb becuase i need to be taught how to reed when im perfectly fine and dont need it its just because of the test i didn't think it mattered and would effect anything but it did and know im in here [sic] (response 467)
- I want to get out of this class please and thank you [smiling emoji] (response 66)
- I want out (response 78)

Other

- We already have English (response 60)
- "Use the question to answer the question" does not help at all (student quotes) (response 55)