# IMPACT OF FLEXIBLE SEATING ON FIRST GRADE READING PROGRESSION

by

Stephana M. Logue

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

Proponents of flexible seating options within the classroom claim this simple change will transform education, improve children's engagement and learning, and renew classroom teaching. Opponents argue that such benefits are overstated because, currently, little evidence exists that eliminating desks and chairs improves learning and student engagement. In this study, the impact of flexible seating on first grade reading scores was examined and how it is implemented when teaching reading at the primary level. This quantitative research plan used the Fountas and Pinnell Benchmarking Kit to determine if students who chose the option of flexible seating during the reading block had differing scores than their peers using a tradition desk-chair or table-chair seating arrangement. The research was completed by collecting data from six first grade classrooms and a total of 103 students across the Rapid City Area School District. The research showed no difference in scores among the two groups as well as subgroups studied when an ANOVA was used to analyze the results. Further research of greater length of time, behavior analysis, and emotional impact based upon class size, teacher training, and years of experience would be beneficial to future study.

*Keywords*: flexible seating, primary reading, student choice, assessment

## Dedication

To all the little learners that have been part of my journey, you have taught me how to love unconditionally, live life to the fullest, and take time to enjoy the even smallest moments. Never stop learning.

**Acknowledgements**

It is with a large heartfelt thank you that I acknowledge my advisor, Dr. Michelle Goodwin, who helped me reach my goal with all the patience and support in the world. Her amazing spirit and Christ-like heart allowed me to work at my own pace while continuing to push forward through any roadblocks. I would also like to say thank you and extend my deepest appreciation to the members of my doctoral committee, Dr. Stacey Bose and Dr. Robin Gillespie. I appreciate the time taken to help me become an even better version of myself as an educator, mentor, and leader. The guidance, help, and encouragement each of you have shown me as I made my way down this path, in which the Lord directed me, has been greatly appreciated.

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Finally, I would like to say thank you to my amazing family. They have endured the many hours of reading, writing, and arithmetic right alongside me at the kitchen table. My husband, Ron, and children, Harmony, Hunter, and Aubrie Logue have been the greatest gift God has given me. Without their unconditional love and overwhelming encouragement, I could have never reached this goal. Ron, you are my biggest cheerleader, and I would not want to walk this road with anyone but you.

Thank you to my parents, Stephan and Sandra Mendel, for showing me what hard work and a little determination can do. You have always shown me that sometimes you may be down, but you are never out of the game. Sometimes you have to get back up, dust yourself off, and keep moving forward.

**Table of Contents**

**List of Tables**

## List of Figures

**List of Abbreviations**

Analysis of Variance (ANOVA)

English Language Arts (ELA)

Leadership in Energy and Environmental Design (LEED)

Literacy Intervention System (LLI)

National Reading Panel (NRP)

Progress in International Reading Literacy Study (PIRLS)

Rapid City Area Schools (RCAS)

Response to Intervention (RTI)

Text Reading Level (TRL)

**CHAPTER 1: INTRODUCTION**

**Background**

Across the United States, educators are scrambling to find the best strategies and practices to help their students become proficient readers and writers (Allington, 2012). In an effort to encourage reading and get students on board, the latest trends have teachers creating classroom environments that resemble the neighborhood coffee shop or the family living room (Bray & McClaskey, 2016). This effort not only aims to help students make larger gains academically but also attempts to allow students more time for movement throughout the day.

Beginning in the late 1800s, America's quest for prosperity led into the second industrial revolution. Reforms and efforts to deter child labor in factories resulted in a surge in school enrollment across America (Brite, 2014). School administrators made efforts to fit the maximum number of bodies into any given classroom space available (Baker, 2012).

First beginning in the 20th century, education reformers of the 1920s and 1930s were putting efforts towards curbing the utilitarian approach of learning from the previous era (Brite, 2014). A significant effort was placed on creating rooms that offered better windows and views of the outside environment. Educators began to arrange desks in groups rather than rows (Baker, 2012). However, these efforts for change were impeded significantly with the baby boom during the mid-century population explosion (Brite, 2014).

Around that same time period, the 1950s ushered in a push for phonics training and teaching within reading programs across the United States (Kim, 2008). Teachers began an effort to assist students in breaking down words and using letter sounds to help improve fluency and reading scores (Kim, 2008). This large group reading instruction approach, together with

large numbers of students, led many schools to revert back to the rows and column layout in order to accommodate the large number of students who needed an education (Brite, 2014).

Moving into the decades of the 1970s and 1980s, Americans began to drastically reduce funding placed toward education due to dropping enrollments and the overarching lecture-type teaching practices of the time. Learning was specifically teacher-to-student and the classroom layout reflected this belief (Baker, 2012). The 1970s also heralded in the era of whole language reading instruction where teachers began to make long lists of what would become known as sight words (Kim, 2008).

Since the 1990s, much more research has been done to study the effects of classroom environment on learning and comprehension. In 1997, Congress created the National Reading Panel (NRP) to initiate national, comprehensive, research-based groups whose purpose was to study reading instructional approaches and help improve reading instruction in American schools (Baker et al., 2011).

In the spring of 2006, two Mayo Clinic researchers, Drs. Levine and Lanningham-Foster, began studying the effects of movement and desk-free classrooms on student health. Researchers and teachers in the Rochester, Minnesota, area found that "there was less movement for movement's sake — fewer trips to the bathroom or water fountain" (Brekke-Sisk, 2006, p. 3). Students were given more opportunities to shift and move around the room as needed for comfort or better learning. Teachers discovered that there was less conflict when students could move away from the distractions of others (Brekke-Sisk, 2006).

While the benefits to students' health and risks of obesity have been more widely researched, little research exists on the effects of classroom setting and the impact on academics. The benefits of flexible seating and personalized learning environments seem to be a benefit to

student physical growth.  This study will look at the impact on academics, and specifically, reading.

Many reading programs used in classrooms today are structured around a proficiency model.  This model places students into one of three tiers for instruction: basic/below basic (below grade level), proficient (on grade level), and advanced (Kontovourki, 2012).  Students receive instruction based on their location within the three-tiered system, and most instruction is provided using a leveled reading curriculum (Pinnell & Fountas, 2011).  This leveled reading instruction is most frequently taught at the student's instructional level using reading instruction called guided reading (Fountas & Pinnell, 2001).  After initial instruction, students are given time to practice new skills and read independently until the next guided reading lesson (Fountas & Pinnell, 2001).

## Problem Statement

The National Reading Panel (NRP), founded under President Bush in 1997, formed the foundations of No Child Left Behind legislation and the Reading First program (Baker et al., 2011).  After the implementation of the Reading First approach, many studies appeared in academic journals with mixed results.  The discrepancy in the data has given way to a new reading approach that has been termed "Balanced Literacy" (Fisher, Frey, & Lapp, 2012).  This approach is in place across many U.S. classrooms today and is founded on the notion that there is no "one-size-fits-all" approach to reading.  One aspect of Balanced Literacy is independent reading.  Independent reading is reemerging as a trend that is used to meet students on their independent and instructional levels and give teachers the foundation from which to tackle the Balanced Literacy approach (Fisher et al., 2012).

Keeping students engaged during the independent reading time can be one of the largest challenges for classroom teachers.  When students are not engaged or excited to read, negative behaviors begin to emerge.  These off-task behaviors include pretend reading, talking, sleeping, daydreaming, and excessive trips to the restroom or drinking fountain.  The physical classroom setting can play an important role in learners' behavior and attitudes toward reading (Vander Schee, 2011).  The problem is that there is a lack of literature studying the effects of flexible seating and the classroom environment on students' academic achievements.

## Purpose Statement

The purpose of this quasi-experimental non-equivalent control group study was to interpret if there was a correlation between the type of seating used during the instruction and independent reading block of time and the child's text reading level scores.  In the research completed by Fernandes, Huang, and Rinaldo (2011) there appears to be a strong relationship between where a student chooses to sit and his/her involvement in the class and interaction with the curriculum.  This research compared first grade students who were allowed to choose the location and type of seating they desired for independent reading and those who were prescribed a specific location (i.e., table or desk) from their teacher. The researcher identified an effect of the student's text reading level (TRL) using the Fountas and Pinnell Benchmarking Kit #1.

## Significance of the Study

This study is statistically significant for determining if the current trend in flexible seating arrangements impacts reading achievement in primary-aged students.  The research conducted adds to the literature on balanced literacy, text reading levels, flexible seating options, and environmental impact on reading.  Many researchers have studied the effects of long periods of sitting on students' health (Brekke-Sisk, 2006; Haghighi & Mohd-Jusan, 2013), but have yet

to determine if giving flexible seating options impacts academic work in a positive way (Wannarka & Ruhl, 2008). This study was conducted by an independent researcher and was not subsidized by Fountas and Pinnell Benchmarking Systems.

The research finding adds to the field of reading education. It provides quantifiable data either in support of or against using flexible seating within the primary- aged classroom during reading instruction, specifically the first grade classroom.

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**Research Question**

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The research question for this study was as follows:

Do first grade students who participated in the use of flexible seating options show significant differences in reading scores when compared to first grade students who did not participate in the use of flexible seating options?

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**Hypotheses**

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The proposed hypotheses were as follows:

**H01:** There will be no statistically significant differences in Fountas & Pinnell Benchmark System 1 text reading level scores for first grade students who had flexible seating options as compared to first grade students who did not have flexible seating options.

**H02**: There will be no statistically significant difference in Fountas & Pinnell Benchmark System 1 fiction book scores for first grade boys who had flexible seating options as compared to those who did not have flexible seating options.

**H03**: There will be no statistically significant difference in Fountas & Pinnell Benchmark System 1 fiction book scores for first grade girls who had flexible seating options as compared those who did not have flexible seating options.

**Definitions**

The following definitions are to be used as needed for clarification and interpretation.

1. *Flexible Seating* - giving students a choice about where they sit while providing them with alternative seating options apart from the traditional chair and desk setup (Wulsin, 2013).

2. *Independent Reading* - reading done alone without the aid of a teacher or other instructor.

3. *Text Reading Level (TRL)* - Alpha score given to a student to determine his or her reading level based on guided reading level and word-knowledge, comprehension, and fluency. The levels range alphabetically from A to Z, with level A representing the lowest level and level Z the highest (Pinnell & Fountas, 2011).

**CHAPTER TWO: LITERATURE REVIEW**

**Introduction**

The quest to create the optimal and most successful learning environments in 21st century classrooms is bringing forces outside of the traditional education curriculum into classroom design and modern American learning objectives. Student effort, motivation, and attitude are often associated with successful educational outcomes. Across the Internet, teachers are blogging and writing about the best ways to implement flexible seating in the elementary classroom setting. A quick scan of the website DonorsChoose.org will reveal a large number of teachers requesting funds to create flexible seating areas within the classroom. Teachers are beginning to create learning environments filled with sofas, standing desks, and wobble seats along with many other creative options.

It is thus important to study how student effort and attitude can be boosted. Researching how the learning environment affects student effort and motivation should help answer questions regarding the best environment in which elementary students learn. For this literature review, a look at student seating options in the classroom will be developed. A discussion addressing the history of classroom settings and reading in general, the location of seats within the classroom, the different types of seating offered, how environment connects to curriculum, and possible impact will be addressed.

The study of educational learning spaces, at this point, is very multidisciplinary in nature. Due to the vast array of information currently available, an overview of many different subject areas and age groups is necessary to understand the nature of the educational environment as it appears today. This review of literature gives an overview of learning theories and pedagogical

approaches that suggest a shift over the past century in the way learning spaces are being designed for today's educational setting, particularly in the elementary school.

**Theoretical Framework**

There are many different literacy practices in the classroom today. Studies have found that reading has had the largest positive effect on comprehension, vocabulary, spelling, writing ability, and overall academics (Hudson & Williams, 2015). There has been a decline in the number of children that are reading for the pure enjoyment of it; across 64 countries participating in the International Reading Assessment conducted by Progress in International Reading Literacy Study (PIRLS) in 2010, 37% of children surveyed do not read for enjoyment at all, and even more consider themselves "poor" readers (Martin, Mullis, & Foy, 2012).

One factor being studied, as it pertains to reading achievement, is student choice. Research pertaining to choice in reading materials has been studied by Skeeters et al. (2016) and Hale and Maola (2011). There is limited research on the study of choice in environment or seat selection, however.

Contrary to behaviorism (Skinner, 1954, 1963), an operant conditioning style of reward and punishment, is the choice theory developed by William Glasser in 1967. Choice theory contends that students are internally motivated and do not require a system of rewards and punishments.

Theoretically, Glasser (1998) contends that all choices are made to meet one of five specific needs. These five needs include (in no specific order): survival, love and/or belonging, power, freedom, and fun. In simplistic form, humans make decisions based upon the desire to meet these needs through the environment and the people around them (Glasser, 1998).

In the case of flexible environment, choice enters the picture by allowing students to choose where they sit while reading. This choice could be a direct reflection of the student's desire to belong, have autonomy and freedom, or simply for fun. Students may possibly choose to sit where their friends sit. This is a common occurrence in many elementary classroom settings. Intrinsically students may fulfill their need for power or freedom by simply having the option of choosing their own seating arrangement. Finally, students may also choose various forms of seating simply for the fun of the item or the fun of reading itself.

<div align="center">**Related Literature**</div>

**History of the Classroom Setup**

The K–12 classroom has evolved significantly from the quaint one-room schoolhouses of yesteryear to the high-tech hot spots we have today. Compulsory education was introduced into the United States between 1852 and 1917 (Nair, 2014). This was parallel to the period of United States history from approximately 1870 to 1914 in which the United States went through a time known as the Second Industrial Revolution (Brite, 2014). Before this change in education, schooling typically took place in the homes and churches of the family. Formal education was set aside and only offered to the very rich (Nair, 2014). During this turn of the century timeframe, new education mandates and laws banning child labor rapidly increased school enrollments, and schools began growing at a very fast pace (Brite, 2014). Teachers and district personnel attempted to create classroom layouts that maximized floor space and accommodated as many students as possible (Baker, 2012). This left little room for instructors and forced them to lecture from the front of the room on raised platforms or at chalkboards as pupils sat at fixed desks many rows deep (Brite, 2014).

Most communities adopted the model of the one-room schoolhouse. The quality of these facilities varied greatly from town to town, depending on the economic conditions of the area (Nair, 2014). Often there was a single teacher responsible for teaching all of the children in attendance, regardless of age (Brite, 2014). Depending on the age and capabilities of the children, many were also assigned jobs to help keep the school house operational. The schedule that evolved during this era consisted of school being open from 9:00 a.m. until 4:00 p.m. with two fifteen-minute recesses and a one-hour lunch break (Nair, 2014).

In 1929, the Great Depression began. Architects began to join education reformers of the 1920s and 1930s to soften the utilitarian approach of learning from the previous decades (Brite, 2014). They attempted to create rooms that offer views outside and began to arrange desks in groups rather than just in rows (Baker, 2012).

The 1930s and 40s also brought America into national crisis like it had never experienced before. With the difficult years of the Great Depression followed directly by World War II, many citizens, including President Franklin D. Roosevelt, were faced with the task of assessing public education and the direction moving forward (Kunzman & Tyack, 2005). Across the country, public forums were created to allow Americans the opportunity to voice their concerns about education and other public policy (Kunzman & Tyack, 2005). Funding was also a major issue based around racial lines. An example of funding in equality took place in Mississippi around this time: "In 1915, Mississippi spent five times more per capita on its white students than it did on its black students. By 1943, the gap had widened, and the state spent eight times as much on white education" (Sanders, 2016, p. 15). This left some schools in low income neighborhoods without the funding needed to improve the curriculum and the structures (Sanders, 2016).

Heading into the 1950s, the postwar population boom spawned new construction of schools, and many districts raced to build quick and affordable schools that could house the large number of baby boomers entering the classrooms. Due to large numbers, many schools reverted back to a rows and column layout in order to fit the number of students that needed an education into the classroom space available (Brite, 2014).

The open-classroom schools, also referred to as schools without walls, originated in the United Kingdom, and this movement filtered into United States education circles towards the end of the 1960s. The open-classroom schools were based on the notion that students would make larger gains if the constraints of the teacher-centered classrooms were removed (Nair, 2014). In the physical space of the school, it called for the removal of walls so teams of teachers could work together in a larger, more open area. Several of these schools existed through the mid-1970s, but the concept died off completely in the public-school setting by the end of the 1970s (Nair, 2014).

As the United States headed into the end of the 1970s and 1980s, the layout and design of classrooms reflected the teaching style and curriculum of the era. These years were a time of decline for spending on schools in America. Districts began to see enrollments go down as the baby boomers began to graduate. Investment in school facilities also began to drop (Baker, 2012). Students typically sat in rows facing the teacher. Learning was specifically teacher to student and the classroom layout reflected this. Teachers expected students to listen and respond only to them. Student-to-student learning was not included; therefore, the standard classroom design for this period of time was adequate. During this time period, school districts began to look more at things such as energy consumption, ventilation and heating needs, lighting, and acoustics (Baker, 2012).

During the 1990s and the 2000s, up to today, much more research has been done on the effects of environment on learning. Beginning in the 1990s, schools began to focus on building what would come to be known as "green buildings" (Baker, 2012). These building projects focused on the need to conserve energy and use more natural lighting. Leadership in Energy and Environmental Design (LEED) began in 1998 and encouraged the growth of "green" schools. This new environmental movement grew significantly in the early 2000s and today is seen as one of the most significant influences on school design and construction (Taylor, 2008; U.S. Green Building Council, 2007).

Today, technology is playing an increasing role in the redesigning process of schools. The United States spends trillions of dollars yearly on maintaining and building new educational facilities. As technology advances, it will determine the impact it will have on American education (Nair, 2014). Unfortunately, due to lack of educational funding, many districts are still trying to make use of school buildings built during the years when spaces were designed to have students sitting in rows with little movement. Hopefully, building a more reliable body of literature to support current and ongoing research will help aid in future construction and understanding of classroom design and setup.

**Location of Seats in the Classroom**

The physical classroom setting plays an important role in learners' behavior. In research by Haghighi and Mohd-Jusan (2013), it was found that learners' seat location provided various indicators between physical setting and attitude of users. Other studies have indicated that "where students choose to sit may indicate something about their interest in the class or their perception about how to get a better grade irrespective of course content" (Vander Schee, 2011, p. 201). Another study by Burda and Brooks (1996) suggested that students make their seat

selection regarding where to sit in the classroom based to some degree on achievement motivation and a desire to learn. Perkins and Wieman (2005) found that sitting closer to the front resulted in a significantly higher course grade in a random-assignment seat location situation.

However, there is other research that shows little or no correlation to seat selection and student achievement. In fact, conflicting results in seat selection and student performance have been seen throughout the literature. Some studies have determined sitting in the front helps attitude and performance, while others find students who sit at the front of the room do not necessarily outperform those who sit farther back (Vander Schee, 2011).

Another more recent study by Meeks et. al. (2013) found that seat location did not have an impact on student learning. It was also discovered that the instructor felt strongly that students sitting near the front would have better performance, but the data proved otherwise. It was found that in general, seating and location did not influence student performance (Meeks et. al., 2013).

While the location of the seats did not impact student performance, it is important to note that this same study did reveal that the type of seat did have an impact on student performance. "Students who sat in the least comfortable form of room configuration—the flat connected chairs (sometimes called chair desks) outperformed both those who sat in tiered classrooms, as well as those who sat in chairs in non-tiered classrooms" (Meeks et al., 2013, p. 384). As a conclusion of this study, it may suggest that "students who sit in more comfortable seating are more likely to let their minds wander or in some cases, even doze off, while less comfortable seating keeps students more alert and on edge" (Meeks et al., 2013, p. 384).

Besides location, the environment itself contributes to the overall feeling in the classroom. "A pleasant classroom learning environment helps students learn better, and different seating locations provide students with access to learning resources, such as the teacher and clear lines of sight to the board" (Fernandes et al., 2011, p. 66). In the research completed by Fernandes et al. (2011), they found that there appears to be a strong relationship between where a student chooses to sit and his following involvement in the class and interaction with the curriculum.

There are a large variety of seating arrangements including rows and columns, small groups, u-shape, and semi-circles. These four appear to be used most often throughout the world of education. The teacher's pedagogical beliefs tend to influence and dictate the most commonly used seating plan. Lan, Ponitz, Miller, Li, and Cortina (2009) noted that North America is trending towards the promotion of small groups and collaboration within the classroom setting. In Asian countries like China and Korea, the prominent seating arrangement is still representative of rows and columns, with all students facing towards the teacher at the front of the room (Lan et al., 2009).

**Type of Seating**

The type of seating can vary in size and type; however, research has found that seating does affect students' learning conditions, and learning conditions impact their engagement and participation in classroom engagement and activities (Wannarka & Ruhl, 2008).

Flexible seating is giving students a choice about where they sit while providing them with alternative seating options that are not the traditional chair and desk setup. There are a variety of products on the market today that offer teachers and students flexibility in seating choices. Some products can be very expensive, while others can be made from relatively

inexpensive materials. Some of the flexible seating options seen in classrooms today include the following:

- Standard Desk & Chair – This would be the traditional single person desk with storage for school supplies utilized by an assigned student.

- Table & Chair – Tables are often used to encourage group or collaborative work. Typically, two or more students use the same table, and each has his or her own chair.

- Table – Without Chairs – This is seen with the removal of table legs where the table is placed very low to the floor. Students then sit directly on the floor or use floor pillows as a cushion.

- Floor Pillows – Pillows can be used to sit or lie upon around the room. This allows students to focus on reading and writing in a comfortable way. It also allows students more movement without distracting their peers.

- Bath Mats & Carpet Squares – These can be used to help define space and give a soft surface to sit upon. This type of material is easy to move around and takes very little room to store.

- Futons & Couches – One of the more expensive options, futons and couches allow the classroom setting to be more relaxing and inviting. This is usually limited by the amount of space in any given classroom.

- Yoga Balls - There are an increasing number of teachers using exercise balls as seats in classrooms. The Mayo Clinic in Rochester, Minnesota, completed a study finding many benefits of a chair-less classroom (Pytel, 2007, as cited in Kilbourne, n.d.). In the Mayo study, which focused on improving learning and reducing obesity by making children

more active, researchers found that the ability to move around more while sitting made the students more attentive (Pytel, 2007, as cited in Kilbourne, n.d.).

- Wobble or Hokki Stools - These stools have been used by a variety of children in different settings. Although more expensive, they are sturdy, and students can use them to rock and maneuver from side to side. With this seating students are exercising, moving, and paying attention, while also remaining at the table with little impact on their peers. The children with autism and ADHD who have used the Hokki Stool appear to calm and stay focused longer while engaging in tabletop activities (Rowh, 2014).

- Crate Seats/Bucket Seats – These seats are made from milk crates or five gallon buckets by adding a board covered with cushion or fabric over the top. They are easily moved and can be used for added storage.

- Scoops Rockers – This chair rocker sits at floor level. At a minimal cost, this little rocker is an example of a chair for kids to relax in while playing games, reading, or listening to a lesson. Rockers also allow for movement while reading or working on assignments.

- Benches – These can be bought as a bench and easily added to any room. Some teachers turn book shelves sideways to create a bench with storage. They are easy to see over and allow for good sightlines to students.

- Lap Desks & Clip Boards – Both of these options give students the flexibility to move around the room while still having a firm surface to write upon.

- Standing Tables – Tables can be made by adjusting the legs on the tables or desks already in the classroom. Many companies also sell specific styles to accommodate students of varying heights.

- Teacher Stations (not teacher desks and corners) – In the past teacher desks have taken up a large portion of the classroom real estate. The amount of space taken over by teachers in a flexible model is minimal. This gives more space in the classroom for creating student corners and gives educators the ability to move furniture around in a timely fashion.

- Flexible Tables – Companies are now making tables and desks with wheels on them, making it easier to reconfigure the classroom on a whim. Schools are also using round or rectangular tables that encourage collaborative work and team projects. Tables are also being used for more than writing surfaces. Teachers today may flip them on their sides, converting them into whiteboards.

According to Clayton and Forton (2001), "Furniture arrangement should allow children to create the work areas they need, sometimes to work alone and sometimes with a group. Children need comfortable places to rest and read, as well as, furniture and spaces for partner work and peer conferencing" (p. 39).

**Designing and Organizing the Learning Environment**

Having a classroom organized and inviting for literacy learning encourages students to interact with materials in a purposeful way that results in natural and authentic experiences. According to Fountas and Pinnell (1996), having a positive environment is based on the following ideas about literacy:

- All children can learn to read and write.

- Children learn about written language in an environment that is rich in print.

- Learning is a social process in which students need to interact with others.

- Learning is a constructive process done by talking, reading, and writing.

- An organized environment supports learning.

- Powerful lessons and demonstrations are an important part of the learning process.

- Children learn best when they have some ownership for their own learning.

Many classrooms over the past few decades have been composed of the following areas and learning spaces:

- Large Group Area

- Small Group Areas/Workstations

- Independent Work Space

- Guided Reading/Teacher-Student Small Group Instruction Area

- Classroom Library  (Fountas & Pinnell, 1996)

**Large group area.**  Thornburg (2014) refers to this area as the "Campfire."  It implies that this is the home or area where storytelling takes place.  For many cultures, this is the area where people would gather to hear information and stories told by a leader or guide (Thornburg, 2014).  Nair (2014) refers to the changing classroom as "learning studios" and "learning suites." According to Dillon, Gilpin, Juliani, and Klein (2016), learning spaces can be adjusted from previous settings, but "it is important that students are exploring ideas, discovering connections, and debating issues" (p. 4) in places that are welcoming, comfortable and beautiful.

This area also allows for important learning and discussions that lead to deeper thinking. Moses, Ogden, and Kelly (2015) discovered that discussion groups helped to set a purpose for independent reading later in the lesson.  They also found that during discussion groups, "students interacted, questioned the text, had polite disagreements, built on each other's arguments, and used textual evidence to convince their friends" (Moses et al., 2015, p 237).  By thoughtfully

selecting mentor texts, consciously incorporating scaffolded time into the lesson, and giving students the opportunity to talk, "facilitated deep thinking among the first graders as well as meaningful opportunities to introduce strategies" in the classes during the study (Moses et al., 2015, p. 237).

**Small group areas.**  These types of areas can be created any number of ways.  Tables, bookshelves, dividers, and other types of materials can be used to help divide a classroom, creating centers where students can work together in groups (Fountas & Pinnell, 1996).  Fountas and Pinnell (1996) also emphasize the need for there to be enough space, materials, and chairs for every student.  Hare and Dillon (2016) stated that this area should have large surfaces from which students can work or large screens that allow all members to collaborate and work together at the same time.

These types of areas are referred to as "watering holes" by Thornburg (2014).  The term *watering hole* is used to describe an area where small groups gather, and there is social learning amongst peers.  Like lounges, coffee shops, or lunchrooms, this type of social learning has been the dominant way most societies have interacted for centuries (Thornburg, 2014).  Nair (2014) stated that some of these areas can be created by transforming wasted hallway space into small learning community areas.  Hare and Dillon (2016) found that discussing, reflecting, sharing, and listening take place in areas that are low to the ground like carpets and coffee tables or on comfortable furniture such as sofas and chairs.  They concluded that using these items can help put students in a different frame of mind and help support group discussions and activities.

This type of learning appears to be at the forefront of education today.  Utaminingtyas, Herdianti, Fitria, and Prayitno (2017) concluded that based on data analysis obtained in the study of junior high school students, positive student interaction can occur during cooperative learning

when opportunities are given in the classroom setting.  To be a positive experience, students must be required to be active and participating in solving problems and discussing outcomes.  In the same study, data collected led to the conclusion that students had a tendency to more quickly understand the material when friends re-explained and helped with understanding a concept (Utaminingtyas et al., 2017)

**Workstations or centers.**  Primary classrooms often include any number of work-centers or stations.  Fountas and Pinnell (1996) note that there are many different kinds of work centers, some permanent and others temporary.  Centers should be learning oriented with clear expectations and not simply busy work.  Centers work and Reading Workshop are most successful when they become part of the daily routine and practice (Boushey & Moser, 2006).

Literacy experts recommend the following essentials to support classroom management and help bolster effective centers and workstations:

1.  Materials needed for the lesson or activity should be well organized and clearly labeled.

2.  Introduce centers one at a time while fully demonstrating what procedures and activities are expected from students and establish routines for participation.

3.  Have learning targets and essential learning criteria posted nearby where students can review as needed.

4.  Ensure each area has an adequate supply of needed items and raw materials for each student.  (Boushey & Moser, 2006; Diller, 2003; Fountas & Pinnell, 1996)

**Independent workspace.**  From time to time, students need to read, write, and study independently.  Each classroom should have some quiet places where students can work independently without distraction (Fountas & Pinnell, 1996).  Thornburg (2014) labels these spaces as "caves," the home of reflection and personal learning.  During the use of this space,

students need something to reflect and focus on.  Reflective thought on the learning experience is an essential part of the school day and allows students to be successful in the problem-solving process (Thornburg, 2014).

While community supplies are nice for some things, each child needs personal space, such as a basket or tub to keep their personal materials for independent work (Fountas & Pinnell, 1996).  Students can be spread out across the room, but the freedom to work independently in an area suited for them is ideal (Thornburg, 2014).

**Teacher/small group instruction area.**  This area of the room is where differentiated instruction based specifically on the needs of a single child or group of children takes place.  This can take place anywhere that is comfortable for a small group to meet.  Many teachers prefer a kidney-shaped table or other area where they can observe each student working on a specific skill (Fountas & Pinnell, 1996).  The structure is similar to the small group areas or workspaces designed around the specific needs of the students and their comfort level (Hare & Dillon, 2016).  Boushey and Moser (2009) noted that it is important for teachers to have time and space to meet with individuals and small groups without interruption.

**Classroom library.**  In a primary classroom, where reading is the foundation of any curriculum, the classroom library is one of the most important areas of the classroom (Fountas & Pinnell, 1996).  Strachan (2015) discusses how "current policy encourages teachers to expand the range of text types children read and write, even in the primary grades" (p. 303). She also noted that the K–5 Common Core State Standards (CCSS) recommend that all elementary students read an equal balance of high-quality, complex literary and informational texts to be considered proficient readers.  Independent reading is fostered and encouraged by having a large selection of

books from which students may choose. It is also important for these books to rotate in and out to keep the library attractive for young readers (Fountas & Pinnell, 1996).

**Environmental Connection to Effectiveness of Curriculum**

Getting and keeping students engaged is perhaps the most important step in creating a successful learning outcome. Banning and Canard (1986) stated that "among the many methods employed to foster student development, the use of the physical environment is perhaps the least understood and the most neglected" (p. 2). A 2012 study by Barrett, Zhang, Moffat, and Kobbacy (2015) found that classroom design features, such as room orientation and furniture, can enhance or set back a student's academic progress by up to 25% during the course of a year. The same report also found that giving teachers the freedom to easily rearrange furniture for different activities was an important factor in improving student's comprehension of material (Barrett et al., 2015). Richards (2006) also discussed how a student's seating location within the classroom impacted the student's academic performance. This implies that changing to seating arrangements could be a possible strategy to decrease disruptive behavior in the classroom and improve academic performance. The arrangement of a classroom and the layout or furniture used can either foster negative or positive behavior among students (Richards, 2006).

A theme has begun to emerge from the literature. There appears to be shift in educational pedagogy towards learner-centered education and classroom design. This is done in an effort to prepare students to be effective agents of change in a complex and interconnected world (Wulsin, 2013). Parkay and Stanford (2007) stated that an important component of school curriculum is creating curriculum that is student-centered rather than subject-centered:

Subject-centered curriculum emphasizes on the order of the subject students are to study. The teacher becomes a subject matter expert and concerned mainly with students

understanding facts, laws, and principles of the subject taught. This method is more

typical of a high school education. Student-centered curriculum emphasizes greater

concern for students and their needs. Teachers teach the content, but place greater weight

on student growth and development. This approach is more typical in an elementary

school setting. (p. 402)

It is accepted in today's classrooms that it is good practice to encourage active learning.

"The physical classroom too often limits the range of active learning experiences. Space for

group-driven activities, access to multimedia display and creation tools, and flexibility in room

layout are all aspects of a well-designed learner-centered teaching space" (Wulsin, 2013, p. 19).

A mix of shapes, patterns, colors, and hard and soft surfaces infuses the spaces with variety and

surprise and helps to create stimulating learning spaces (Oblinger & Lopez, 2006).

To date, research suggests that student learning and appropriate behavior is better

achieved when students' seating arrangements are set up with individualized learning spaces in

the form of rows (Simmons, Carpenter, Crenshaw, & Hinton, 2015). Rosenfield, Lambert, and

Black (1985) stated that seating arrangements impact student behavior; their study found that

groups of desks helped students socially but hindered their individual work performance.

**Possible Health Considerations**

Sitting at a desk for long periods of time can lead to lower levels of cognitive stimulation

and muscles that become fatigued and tired. Pfeiffer, Henry, Miller, and Witherel (2008)

discussed the need for kinesthetic and proprioceptive body feedback. Proprioceptive stimulus is

connected with the position and movement of the body as it gathers information. They stated

that a motionless body decreases attention which leads to a state of under-arousal (Pfeiffer et al.,

2008).

Providing alternative seating cushions or wiggle chairs uses the principles of engaging the proprioceptive and vestibular systems by providing just enough movement to stimulate those systems, keeping the student alert and focused on the task or lessons (Pfeiffer et al., 2008). The movement provided through alternative seating provides proprioceptive and vestibular input, which helps to increase the arousal states necessary to attend to relevant tasks and learn new curriculum (Pfeiffer et al., 2008).

Wood (1997) asserted that "children's developmental needs should be the foundation for every choice we make in our classrooms and schools; they need to remain at the center of our decisions about school organization, policies, scheduling, and every day practices" (p. 1).

**Impact of Flexible Seating**

There have been very few research studies addressing the efficacy of alternative seating, specifically the impact flexible seating may have on academic achievement in typically developing children and those with special needs (Honaker, 2008). Prior studies have found that students with a diagnosis of ADHD have benefitted by using stability balls and have shown significant improvements in levels of attention (Fedewa & Erwin, 2011). However, the impact on academics needs to be researched further.

Two recent studies examined at the use of yoga balls as chairs and the use of standing desks in the classroom. Fedewa, Davis, and Ahn (2015) completed a study on the use of yoga balls utilized by 67 second graders. Levels of attention and incidences of off-task behavior were compared to students using a regular chair-desk seating arrangement. They concluded that the children sitting in chairs had higher levels of on-task behavior than those sitting on stability balls (Fedewa et al., 2015). However, this same study found that nondisabled, typically developing

students showed positive therapeutic trends but not significant improvements resulting from stability ball use (Fedewa & Erwin, 2011).

In the study of students using standing desks, Hinckson et. al. (2016) found benefits in standing, but recommended that students' learning time should be interrupted with brief bouts of standing, rather than long periods of "static standing." The study also emphasized the need for proper footwear when using standing desks and the possible need for rubber mats and good posture. They also noted, "The impact of standing classroom interventions on academic performance is still unknown" (Hinckson et al., 2016, p. 983).

If researchers and teachers can gain a better understanding of how the brain processes material and how movement and flexibility in seating choices impact attention and effort, it may aid classroom teachers in enhancing their students' learning of academic skills. The impact of flexible seating on academic areas such as reading and writing still needs further study.

**Flexible Seating Expands Throughout Learning Environments**

Times are always changing, and educational practices must continue to evolve. According to Kennedy (2017),

> School facility planners have begun to acknowledge that 21st-century learning requires a departure from the archetypal classroom layout of chairs and desks in rigid rows and columns. To facilitate modern teaching strategies—collaborative learning, problem solving, hands-on instruction, student-centered curriculum, digital engagement—schools need learning environments more attuned to those approaches. (p. 26)

For modern schools this means a shift to providing a variety of spaces and seating that help facilitate learning for all students.

Incorporating simple modifications to the classroom environment is an easy and somewhat minimally intrusive intervention that can be done within the classroom. These simple changes can often result in increased academic engagement and decreased disruptive behavior. Many teachers have the freedom to design their own classrooms spaces (Guardino & Fullerton, 2010). Many administrators allow educators the opportunity to incorporate evidence-based modifications with the hope for a result of a more positive classroom environment for all (Guardino & Fullerton, 2010).

Libraries are also changing to meet the needs of the next generation of learners. Many libraries and incorporating Makerspace areas, flexible seating that can be configured into private study areas or group meeting sections (Anandasivam & Cheong, 2008). Other changes include creating audio-visual viewing facilities, open computer labs for student use, writable glass wall and surfaces, dry erase walls, and LCD panels (Anandasivam & Cheong, 2008).

**History of Reading Programs in the United States**

Beginning in the 1950s, the push for phonics training and teaching began emerging onto the education scene.  During this and the subsequent decade, it was believed that training students to decode words and break apart sounds would help improve fluency and comprehension (Kim, 2008).

Following the phonics push of the 1950s and 1960s, educators become concerned that issues lay in the fact that the English language does not often follow specific phonics rules.  Kim (2008) also noted that the 1970s ushered in the era of whole language reading instruction. Within the structure of the whole language program, teachers began to make long lists of what would become known as sight words.  These lists of words were given to students to simply memorize and recall by sight (Kim, 2008).

In 1997, Congress created the National Reading Panel (NRP) to initiate national, comprehensive, research-based groups whose purpose was to study reading instructional approaches and help improve reading instruction in American schools (Baker et al., 2011). Out of NRP developed the beginnings of No Child Left Behind legislation and the Reading First program (Baker et al., 2011). "Schools began implementation of Reading First during the 2002–2003 school year, and by 2007 the K–3 reading program was implemented in all 50 states, the District of Columbia, American Samoa, the U.S. Virgin Islands, and the Bureau of Indian Education" (Baker et al., 2011, p. 308).

Along with the Reading First push came many studies with mixed results. This has given way to what has been termed a "Balanced Literacy" approach that takes place across many U.S. classrooms today. Independent reading is also reemerging as a trend that is used to meet students on their independent and instructional levels and give teachers the foundation from which to tackle the balanced literacy approach (Fisher et al., 2012). The balanced literacy approach is a method that teaches phonemic awareness to learners and supports them in achieving adequate awareness. It combines whole language approach and phonics to teach skills such as word recognition and identification, fluency, vocabulary, and comprehension, (Donoghue, 2008; Tarat & Sucaromana, 2014). Basically, balanced literacy blends the whole language approach and the phonics pieces together into a well-rounded approach to reading.

In the *Phonics Page: A Ministry of 40L,* Brown (2016) examined reading instruction across the United States by comparing the variation on using pure sound strategies vs. meaning strategies when teaching students to read. She noted that from as far back as information on the subject can be located, 1650, up until 1783 when the Webster's Speller was introduced, basic syllabary and analytic phonics were used to teach reading. After 1783, the Webster's Speller was

used primarily up until 1826 when several other methods were tried that focused more on word meaning over letter sounds. In the early and mid-1900s, the Dick and Jane series dominated American reading programs. It was not until the late 1900s that a large amount of research was done on reading instruction opening the door for programs still used today such as Whole Language, Reading First, Balanced Literacy, and Reading Plus (Brown, 2016).

**Trend of Balanced Literacy**

Across the United States many districts are leaving behind basal readers, Accelerated Reading (AR) programs, and Guided Reading simply used in isolation for a more proportional program being referred to as balanced literacy. This balanced literacy framework is a shift from how students have been taught English and language arts (ELA) standards in the past few decades.  The balanced literacy framework has several components that take place simultaneously, typically within a workshop model.  The framework focuses on the areas of reading, writing, speaking, listening, and viewing, balanced by pieces containing teacher-led mini-lessons and student-led learning and choice (Ivey, Baumann, & Jarrard, 2000).

The term *balanced literacy* and what it means is still somewhat open to interpretation, but it implies that there is a balance of several pieces and not a one-size-fits-all approach to reading. Shaw and Hurst (2012) stated that "balanced literacy is an approach that provides different levels of teacher support, student control, and an understanding that reading and writing develop naturally" (p. 1) as students progress through a literacy program.  A report by Ivey et al. (2000) recognized that implementation of a balanced model varies from district to district.  They stated that there is neither a right or wrong way to implement balanced literacy, and implementation is often influenced by the classroom management and teacher philosophy on reading education (Ivey et al., 2000).

Many teachers embrace some form of balanced instruction (Pressley, Rankin, & Yokoi, 1996).  Results of a questionnaire, completed by kindergarten through grade 2 teachers identified as exceptional in promoting literacy achievement, revealed "great balance" and a belief that integrating features of whole language along with skills instruction provides for a better literacy program (Ivey et al., 2000).

**Balanced Literacy in the Rapid City Area School District**

According to an article put out by the Rapid City Area School District, the balanced literacy approach currently held by the district is based upon the following theories and theorists: zone of proximal development, zone of actual development, scaffolding, constructivism, bottom up model, top down model, and strengths vs. deficits. Much of the design for reading structure in the district is based on the work of Russian psychologist Lev Vygotsky (Elementary Literacy, n.d.).

The following chart was created and posted on the district's website to support the balanced literacy approach.

**Components of the Reading Workshop**

**Foundation Lesson**
Unit principles
OR
**Minilesson**
Connection, Teach, Active Engagement, Link

**Independent Reading**
Literacy Work Stations
Reading Response
Individual Conferences
Partner Reading

**Guided Reading**
Small, needs-based groups
High Support
Explicit Teaching
Flexible Strategy Groups

**Literature Study**
Student-Led Circles
Book Clubs
Comprehension Focus
Critical Reading Focus

**Share**
Group Share: Process and Content
Reading Response Share
Refocus on Minilesson principle
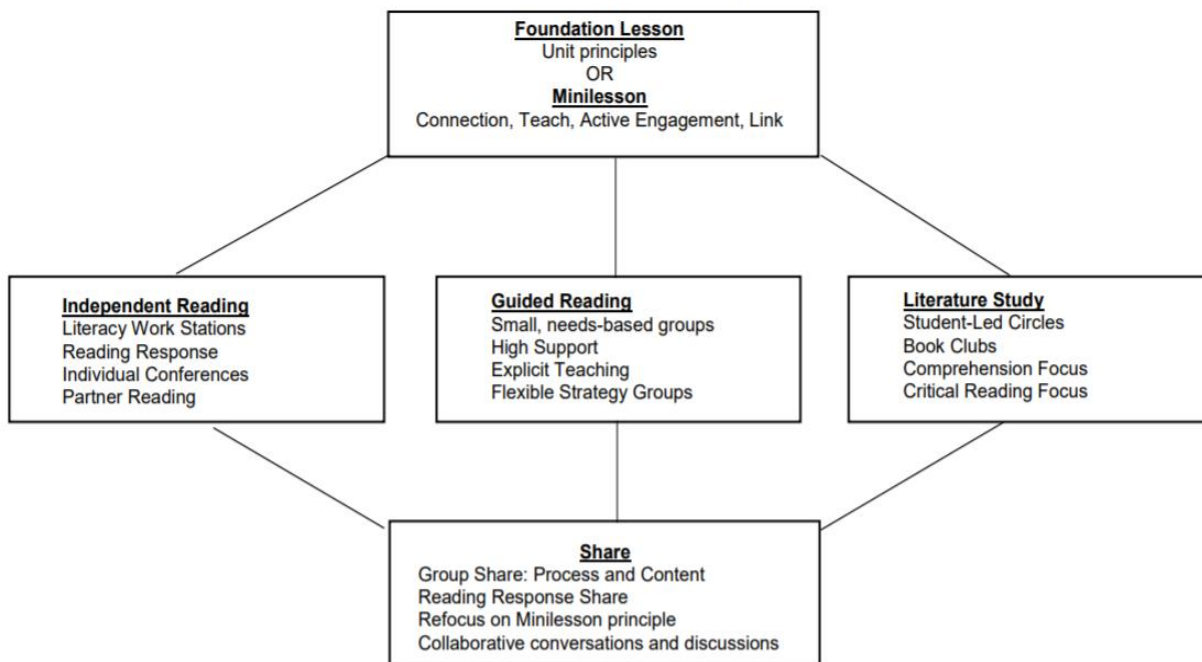Collaborative conversations and discussions

*Figure 1.Components of the reading workshop for the Rapid City Area School District.*

The website also contains a list of some of the key behaviors that readers should

demonstrate at each text level. Teachers are expected to assess students to ensure they exhibit

many of the same behaviors at the various levels with increasing sophistication and

automaticity. Teachers are instructed to check the Fountas and Pinnell Guide in *The*

*Continuum of Literacy Learning* for more detailed and thorough set of details to help teachers

know what to notice and look for in young readers (Elementary Literacy, n.d.).

**Reading for Learning and Pleasure**

Judith Langer (1995) expressed the importance of reading and the benefits it has for

students.  From her perspective, students learn to explore possibilities and consider options for

themselves.  As they explore, they begin to find themselves, imagine the struggles of others,

value differences in people, and search for justice within their own context.  She also adds that

literate students are needed to help shape out world tomorrow (Langer, 1995).  The importance

of this statement implies that the main goal of literacy and literacy instruction should be to keep students reading (Appleman, 2006).

The National Library Trust (UK), defines reading for pleasure as reading we do of our own free will, anticipating the satisfaction we will get from the act of reading. Two related aspects of reading motivation are reading attitude and reading interest. Although these three terms are frequently used interchangeably, each is slightly different in nature (Clark & Rumbold, 2006; Mazzoni, Gambrell, & Korkeamaki, 1999):

- Reading attitudes refer to the feelings and beliefs an individual has with respect to reading.

- Reading interest relates to people's preferences for genres, topics, tasks, or contexts.

- Reading motivation, as outlined above, refers to the internal states that make people read.

The length of time that students spend reading for pleasure, also termed student engagement, has been found to be a strong correlate of reading achievement in a variety of studies (McGeown et. al, 2015). There are several different approaches that can offer literature instruction to students that are highly successful in motivating students and facilitating their interest in reading (Wilhelm, 2006). Wilhelm (2006) went on to state that in order to make reading important and enjoyable, students need to not just study literature but also experience it by interacting with books for enjoyment. He concluded that reading enjoyment "comes with deep experience[;] they must remain readers long after they leave our classrooms" (Wilhelm, 2006, p. 637).

McGeown et. al (2015) concluded that student's attitudes toward reading and reading confidence develop at a very young age. They went on to state that the relationship between

children's reading skills and children's attitudes towards reading have a substantial relationship.

Children with more positive attitudes towards reading have better reading skills and attitudes

could predict reading success down the road (McGeown et. al., 2015). Moses and Kelly (2018)

stated that their findings demonstrated that students developed a positive outlook on reading

through "positive talk about books, establishing favorite authors and genres, resisting the end of

reading time, choosing to read over other activities and making reading a part of their social

interactions" (p. 307).

**Meeting Individual Needs**

Every student needs to have focused reading instruction at his/her level and specific

interests. This specialized instruction is often different based on age, gender, and skill

(McGeown et al., 2015). Reading instruction can be very complex and usually involves many

different skills and abilities to be successful. Over the past two decades, there have been several

reports published that have built a reading research base on effective reading skills (Swanson,

Orosco, & Kudo, 2016). Many recent studies include an in-depth look at oral language

development, phonemic awareness, fluency, text comprehension, word study, vocabulary, and

writing, all of which should be present in comprehensive literacy instruction, increasing the

chances that children will become successful readers (McGeown et al, 2015).

Balanced approaches are not restricted to one way of developing literacy. By giving

options, it can help meet the needs of most children and reach them at the level they need

(Costello, 2012). In a study by Jones, Conradi, and Amendum (2016), giving students

instruction in areas not needed proved to be a waste of time and energy. Jones et al. suggested

that "after determining the fundamental area of need, teaching targeted reading skills in small-

group or individual interventions" (p. 309) is needed to facilitate success. The same study also

suggested that intervention lessons should be brief and systematic targets at individual needs (Jones et al., 2016).

Jones et al. (2016) also found that "to best meet students' needs and capitalize on intervention time, classroom teachers and literacy specialists should develop targeted interventions closely matched to students' reading needs" (p. 314). Jefferson, Grant, and Sander (2017) discovered that the use of "differentiated reading groups in Tier I classrooms focusing on repeated reading (of engaging and leveled text) and comprehension may hold promise to improve reading scores, inform instruction, and provide a useful framework for wider application." In the same study, results indicated improvements in reading fluency scores and found favorable improvement with the use of the intervention groups. Jefferson et al. (2017) also recommended that educators "consider adopting an evidence-based differentiated instructional approach to a balanced reading curriculum to enhance their reading instruction in general education classrooms" for all readers, regardless of grade or gender. Teachers and specialists can use information gathered from differentiation groups to meet students' specific needs. This will lead to faster reading progress and more opportunities for students to "engage successfully with interesting, challenging, and rigorous texts" (Jones et al., 2016, p. 314).

**Fountas and Pinnell Benchmark System**

By 2006, Guided Reading, developed by Fountas and Pinnell, had taken the place of most basal reading programs popular in most American elementary schools. It was developed to help meet the needs of learners in small groups (Ford & Opitz, 2008). Shortly after the implementation of Guided Reading programs, Fountas and Pinnell developed the Leveled Literacy Intervention System (LLI) as an intense literacy intervention for struggling readers in grades K–2 (Glasswell & Ford, 2010). The LLI program is still used widely today as a resource

in response to high-stakes testing across the United States (Howard, 2009). In an effort to monitor student gains and give support to struggling students, many schools have implemented a process termed Response to Intervention, otherwise known as RTI (Howard, 2009). The LLI and Benchmark kits are used to help identify struggling readers.

The Fountas and Pinnell Benchmark Kits were developed by authors and researchers Irene C. Fountas, professor at Lesley University in Cambridge, Massachusetts, and Gay Su Pinnell, Professor Emeritus in the School of Teaching and Learning at Ohio State University. The publications of Benchmark Assessment Systems 1 and 2 are the result of twenty plus years of research and direct work with teachers in the classroom setting (Pinnell & Fountas, 2010).

The *Fountas and Pinnell Benchmark Assessment System* is a formative assessment system that is comprised of 58 original mini-books covering both fiction and nonfiction assessment areas. The kits are designed for use in kindergarten through eighth grade and give immediate feedback on students' reading level, allowing educators to make immediate and quick adjustments for students as lessons and instruction take place (Pinnell & Fountas, 2009).

Other resources developed by Fountas and Pinnell have been researched extensively by leaders in the Department of Education in Washington, DC:

> To facilitate the use of Fountas and Pinnell, the Department of Education organized numerous professional development sessions to explain the program, rationalize its selection, provide examples of what the program would resemble in a typical classroom, and provide additional resources for accompaniment. These resources, also developed by Fountas and Pinnell, were multiple and ranged from a comprehensive listing catalogue of leveled children's literature to a detailed description of the skills that must be displayed by students at each reading level. (Costello, 2012, p. 71)

**Importance of Reading Comprehension and an Active Literacy Classroom**

For beginning readers there are several goals and skills that foster a solid foundation in reading, and more specifically reading comprehension. Some of these goals include developing an awareness of their own metacognition and tuning in to what they are thinking as they read (Harvey & Goudvis, 2008). It is also important for young readers to complete a record of their thinking through the use of drawings and written responses, as well as sharing their thinking with others (Harvey & Goudvis, 2008).

Primary aged students are very creative and already possess the ability to have inner conversations about what they hear, see, and read while wondering, noticing, and making connections to the texts they read each day (Harvey & Goudvis, 2008). According to the Primary Comprehension Tool Kit created by Harvey and Goudvis (2008), reading comprehension is defined as "the evolution of thought that occurs as we read" (p. 12).

For over 20 years Newmann (2001) studied authentic instruction in a highly engaging and interactive classroom setting where the education connected to students in their most comfortable setting. This study has direct implications on the classroom. According to the current reading concepts practiced in classrooms today, reading is a complex, active process of constructing meaning. The act of constructing meaning is an interactive experience that involves not just the reader but also the text and the context in which reading takes place (Heilman, Blair, & Rupley, 1998). Newmann's study concluded that engaged students learn more and at a faster pace than students who are not engaged (Newman, 2001). In order for active and meaningful learning to take place, students must take an active role in their own learning while being given choices and opportunities to advance at a rate that is comfortable for them (Harvey & Goudvis, 2008).

**Skills for Life Beyond the Classroom**

The design of flexible classrooms takes the research and intentionally builds an atmosphere of teamwork (Oblinger & Lopez, 2006). Flexible classrooms encourage problem solving and relationship management to occur on an everyday basis (Oblinger & Lopez, 2006). Tables, futons, and wiggly chairs, instead of individual desks, allow for a more organic spatial arrangement. Flexible classrooms support discussion-based versus lecture-based teaching methods which promote communications skills, teamwork, and relationship management among all students (Oblinger & Lopez, 2006).

Every student can take on a leadership role in a class that supports small-group work, collaboration, and experimentation. The instructor is not the only leader (Oblinger & Lopez, 2006). These lessons help develop skills that students can use throughout their entire life.

<div align="center">**Summary**</div>

Student effort is an important factor in achieving successful educational outcomes in the classroom. More knowledge about the determinants and the factors that improve overall learning is of interest for teachers as well as school leaders. Studying how the learning environment affects student effort and motivation can only improve the knowledge base from which educators work every day in classrooms. This review of literature indicates that flexibility and satisfaction with the learning environment are indeed closely related to student effort and overall comprehension of material presented in class. Educators need to focus less on presentations and more on student learning. Flexible learning or active learning environments may soon replace the podium and rows of chairs lined up in front of the teacher with spaces that are much more conducive to teaching and learning techniques that have students working in groups, solving problems, and applying concepts that require deeper engagement and solid learning.

**CHAPTER 3: METHODOLOGY**

**Introduction**

This research study was based on a quasi-experimental, non-equivalent control group design and was created to evaluate the impact of flexible seating options on first grade students' text reading level (TRL) when measured by the Fountas & Pinnell Benchmark System 1 for both fiction and non-fiction texts. Flexible seating is defined as giving students a choice about where they sit while providing them with alternative seating options that are not the traditional chair and desk setup.

This chapter is designed to explain the methods used for this study. In addition, it will provide a description of the following subsections: design, research questions, participants, setting, instrumentation, procedures, and data analysis.

**Research Design**

This study used a quantitative quasi-experimental design to investigate differences in scores for the groups after exposure to flexible seating options (treatment). This design was selected because students' class placement is predetermined. Research followed the non-equivalent group design and did not include a no-treatment control group.

The term quasi-experimental was derived from Campbell and Stanley (1963) who referred to these studies as experiments that lack random assignment. According to Gall, Gall, and Borg (2007) this type of study can yield very useful knowledge, but researchers need to account for specific problems that may arise if individuals are not randomly assigned to groups, or in this case, classrooms.

The most common quasi-experimental design utilizes the non-equivalent control group design (Gall et al., 2007). While students will be placed in classrooms ahead of time, both

groups took a pretest and a posttest.  Except for the factor of random classroom assignment, the steps followed the same process as if a control-group design were being used.

The largest threat posed to the validity in the quasi-experimental design, using pre-test scores, is the possibility that difference in groups existed prior to treatment and is not due to the treatment itself (Gall et al., 2007).  A one-way analysis of variance (ANOVA) was used to address any issues that could have possibly arisen from these differences.  This statistically reduced the effects of initial group differences by adjusting the post-test means of the two groups (Gall et al., 2007).

## Research Question and Hypotheses

The research question for this study was as follows:

Do first grade students who participated in the use of flexible seating options show significant difference in reading scores, when compared to first grade students who did not participate in the use of flexible seating options?

The proposed hypotheses were as follows:

**H01:** There will be no statistically significant difference in Fountas & Pinnell Benchmark System 1 text reading level scores for fiction text for first grade students who had flexible seating options as compared to first grade students who did not have flexible seating options.

**H02**: There will be no statistically significant difference in Fountas & Pinnell Benchmark System 1 fiction book scores for first grade boys who had flexible seating options as compared to those who did not have flexible seating options.

**H03**: There will be no statistically significant difference in Fountas & Pinnell Benchmark System 1 fiction book scores for first grade girls who had flexible seating options as compared those who did not have flexible seating options.

**Participants**

The participants for this study were taken from a large school district in western South Dakota.  There are currently 15 elementary schools in the district and approximately 45 first grade classes.  Three classes were chosen for the treatment group, and three classes were chosen for the control group for approximately 50 students in each group and a total of approximately 100 participants.

This study was conducted on a sample of 103 participants, using convenience sampling. The treatment group had access to flexible seating options during the daily reading block of 90 minutes for independent silent reading, buddy reading, and listening to reading.  The control group used traditional, non-flexible seating options (desk or table and chair) during the daily reading block of 90 minutes for independent silent reading, buddy reading, and listening to reading.

The sample included approximately 50% males and 50% females.  The ethnic make-up of the participants should have been consistent with the district make-up of 3% Asian students, 16% African American students, 40% Native American students, and 41% Caucasian students.  As first grade students, all participants were between six and eight years old at the beginning of the study.  The average age of the participants was about seven years.  Each classroom was placed into the control or treatment group based on the completion of the teacher survey.  The reason for 100+ participants was so that the power of this study remained at 0.80 or above.

The teachers involved were all certified teachers in the state of South Dakota and held at least a bachelor's degree in elementary education for grades K–5.  All had a minimum of two years of teaching experience.  The teachers in this study followed the school districts' curriculum map, and all taught the same reading skills from Unit 4 for the third trimester selected during the

20172018 school year. Teachers were offered a $100 gift card for their extra work and participation in the study.

Each participant involved in the study was sent a letter describing the design and importance of the study and asked for consent to participant by sending back a signed informed consent form (see Appendix F). The data were collected during the third trimester of 2017–2018 school year over a period of 10 weeks.

Table 1

*Teacher Participant Data*

| Classification | Number of Students | Number of Male Students | Number of Female Students | Years of Teaching Experience | Level of Teacher Education | Degree Type |
|---|---|---|---|---|---|---|
| Flexible 1 | 18 | 8 | 8 | 7 | Master's | Education w/Reading Specialist |
| Flexible 2 | 23 | 11 | 12 | 36 | Master's | Elementary Education w/ Early Childhood |
| Flexible 3 | 15 | 8 | 7 | 5.5 | Bachelor's | Elementary Education |
| Traditional 1 | 20 | 12 | 8 | 2 | Bachelor's | Early Childhood Education/ Birth-8 |
| Traditional 2 | 14 | 6 | 8 | 6 | Master's | Human Services Elementary Education |
| Traditional 3 | 18 | 8 | 10 | 6 | Some Graduate School | Elementary Education |

**Setting**

This study was conducted in the second largest school district in the state of South Dakota. The district serves approximately 14,000 students during the average school year and has an operating budget of $175.6 million. As of July 1, 2015, the population estimate for the city was 73,569 according to the United States Government Census Bureau site. Within the city, the child population where the schools are located is 23.9% (17,583) and is derived from the number of persons under 18 years as of the April 2010 Census. The median household income (in 2014 dollars), between the years of 2010-2014 was $46,392.

According to the district's web site, the school district employed over 1800 people during the 2017–2018 school year. Nearly half of the Rapid City Area Schools' (RCAS) teachers had advanced degrees and the average teacher in the RCAS had 14+ years of experience (South Dakota Department of Education, 2017).

**Instrumentation**

The Fountas & Pinnell Benchmark System 1 for fiction and nonfiction books (Book Levels A–N) was used to assess the students' text reading level (TRL) for each student individually as both the pre- and post-test for fiction texts. The data collection began with the pretest given at the beginning of Unit 4 in the beginning of March 2018 and concluded with the post-test given after completion of Unit 4, following approximately 8–10 weeks of treatment, sometime around the end of April or the beginning of May.

The instrument chosen for the assessment in this study was used as students' pretest and post-test. However, students did use different books for the assessments based upon the child's presumed reading level to guarantee testing effect. The assessment piece took approximately ten

minutes to administer and was based on the child's fluency, decoding, vocabulary, and comprehension at the given level being tested.

To measure the test-retest reliability of Fountas & Pinnell Benchmark Assessment System, the students' reading scores on the fiction series were correlated with their scores on the nonfiction series. In general, test-retest results should exhibit a reliability coefficient of at least .85 for an assessment's information to be considered stable, consistent, and dependable. The test-retest reliability between fiction and nonfiction books resulted in a coefficient of .93 (Fountas & Pinnell, 2001).

Validity was completed by comparing the texts from Fountas and Pinnell Benchmark System 1 to the Reading Recovery program leveled texts. According to the full field study put out through Heinemann Publishing, there was a strong association between the System 1 fiction texts and Reading Recovery Text Level Assessments. The fiction texts had a correlation of .94 and nonfiction texts had a correlation of .93 (*Fountas & Pinnell Benchmark Assessment System*, 2012).

The Fountas and Pinnell Benchmark Assessment System assesses decoding, fluency, vocabulary, and comprehension to give the child an overall score for the tested text reading level. The focus of this assessment will be the score in decoding and fluency. To be considered proficient, the student must score a 97% or higher on the assessment.

The data that the Fountas & Pinnell Benchmark Assessment System provided was available for analysis instantly after the participants completed the assessment (Fountas & Pinnell, 2001). The assessment provided an objective measurement of the growth in decoding, fluency, vocabulary, and comprehension over a given time period.

**Procedures**

This research was conducted by following specific step-by-step procedures outlined in the dissertation handbook and described in the following paragraphs.  After applying and gaining approval from Liberty University and the participating school district's internal review board (IRB), the research was executed from March – May of 2018.  The participating teachers were notified that permission to collect participant data was granted from Liberty University's IRB and the school district's IRB. Each participating teacher was asked to complete a survey describing the types of flexible seating offered and the amount of time students were allowed to use each type of seating during reading instruction time. If results were unclear, a visit to the classroom was arranged to better understand the flexible seat options within the specific classroom itself. Based on the survey results and classroom visits, participants were placed into either group one, tradition desk or table seating, or into group two, those offering flexible seating choice during the reading instruction block. Pretests were administered, using the Fountas and Pinnell Benchmarking Kits, to all participants by either the classroom teacher, trained instructional staff, or the researcher during the prescribed testing window.

After the study was approved by the IRB, a random sampling of teachers was selected from the school district.  One month before the study, the selected participants were sent a packet explaining the significance of the study along with any limiting factors and asked to return a pre-addressed letter with a signed informed consent to participate.  Participants were also asked to complete a short survey at that time to help ensure they were placed in the correct group during the study (see Appendix A for sample questionnaire).

One week before the study window opened, a reminder letter for participating teachers reviewing the procedures was sent via email and postal service to the address indicated on the

consent form.  On the first day of the testing window, an email was sent out with a link re-explaining the procedures.

This study used a quasi-experimental design to investigate differences in scores for the groups after exposure to flexible seating options (treatment). This design was selected because students' class placement is predetermined.  Research followed the non-equivalent group design and had a no-treatment control group.

The window to complete the questionnaire was open for 12 weeks from March to May. After the first seven days, a reminder was sent to anyone who had not yet entered the pre-testing results.  All pretest results were collected by the researcher no later than 14 days from the start of the study.  This process was repeated for the post-test results during weeks 8–10.

To determine the number of participants needed for this study, a statistical calculator was used.  First, the power was set to 0.80, the $p$ value to 0.05, and the effect size to 0.4.  These numbers were chosen based on correlations for a strong study (Urdan, 2010).  According to the statistical calculator, in order to have a power of 0.80, $p$ value of 0.05, and effect size of 0.4, the sample size should be at least 66 participants (Gall et al., 2007).  Having 103 participants guaranteed a robust result.

### Data Analysis

All test scores were double-checked for accuracy.  The statistical procedure, one-way ANOVA, was used to determine if students' text reading level differed based upon the incorporation of flexible seating used during the reading instruction block.  A statistical ANOVA was used to determine if significant differences between two groups on the dependent variable existed while controlling for other variables (Urdan, 2010).  Data from test results were inputted

into SPSS by the researcher in order to conduct and run ANOVA tests for each of the two sub-groups.

The two data sets and the means were compared by looking at the percentile rates and the overall TRL score. From these comparisons, the average score for the groups and the gender subgroups with regards to TRL were exposed. The results were given in a final score that resulted in an alphabet letter. Each letter was then assigned a corresponding numerical value in order to give the score a numerical value. For example, if a student's pre-test score was an E, this would be assigned a value of 5. If then, their post test score indicated a level G then this was assigned a value of 7. The scores of the groups were then calculated and compared by using a one-way ANOVA of the data collected.

In order to analyze the data using a one-way ANOVA, specific steps were taken to make sure that the data could be analyzed in this way. It was determined appropriate to use a one-way ANOVA because the data met the six assumptions that are required for a one-way ANOVA to yield a valid result (Laerd Statistics, n.d.). The following assumptions were reviewed and checked upon completion of all ANOVAs run throughout the study.

### Assumptions for One-Way ANOVA

The following six assumptions for one-way ANOVA are required for analysis:

• The dependent variable should be measured at the interval or ratio level (i.e., they are continuous).

• The independent variable should consist of two or more categorical, independent groups.

• There should be an independence of observations, which means that there is no relationship between the observations in each group or between the groups themselves.

Each group must have different participants, with no participant being in more than one group.

• There should be no significant outliers.

• The dependent variable should be normally distributed for each category of the independent variable.

• There needs to be homogeneity of variances. (Laerd Statistics, n.d.)

## CHAPTER 4: FINDINGS

### Overview

The purpose of this study was to compare the academic performance, using the Fountas and Pinnell Assessment System in reading, between two groups of first grade students, based on type of seating: either traditional or flexible. Differences in performance were also assessed by gender, along with the mean for each gender (i.e., boys in both settings and separately girls in both settings).

In order to test if any differences between the groups were statistically significant, an ANOVA was utilized which is the appropriate test to address the research questions. For the question of significant differences between seating arrangements, the one independent variable (IV) was seating arrangement. The one dependent (DV) was scores on the Fountas and Pinnell Assessment System in reading. All of the students were in first grade. There were 52 female students (50.5%) and 51 male students (49.5%). The significance was set at 0.05 for all statistical analyses.

### Research Question

**RQ:** Do first grade students who participated in the use of flexible seating options show significant differences in reading scores, when compared to first grade students who did not participate in the use of flexible seating options?

### Null Hypotheses

**H01:** There is no statistically significant differences in Fountas & Pinnell Benchmark System 1 text reading level scores for first grade students who had flexible seating options as compared to first grade students who did not have flexible seating options.

**H02**: There is no statistically significant difference in Fountas & Pinnell Benchmark System 1 fiction book scores for first grade boys who had flexible seating options as compared to those who did not have flexible seating options.

**H03**: There is no statistically significant difference in Fountas & Pinnell Benchmark System 1 fiction book scores for first grade girls who had flexible seating options as compared those who did not have flexible seating options.

### Demographic Details

Participants in this study were first grade students enrolled full-time in a RCAS elementary classroom. Participating in this study were 103 total first grade students from six different classrooms. Participating students consisted of 52 (50.5%) female students and 51 (49.5%) male students. Participants included 52 (50.5%) students with traditional seating options and 51 (49.5%) students with flexible seating options.

After completion of the Classroom Literacy Survey by participating teachers (see Appendix A) it was determined that all students had access to a standard classroom table or desk and chair along with the majority (five out of six classrooms) having access to clipboards or lap desks. Outside of these common materials, classrooms that had two or more other available seating options were placed into the flexible seating group while all others remained in the traditional seating group. An individual breakdown of each participant was analyzed to determine assignment in traditional or flexible seating category. The average number of flexible seating options within the Flexible Seating Group was seven. These seven flexible seating options were given to students in addition to the standard classroom table or desk and chair and access to clipboards or lap desks.

**Findings**

As an initial step in the data analysis process, the data were screened for valid and missing cases and to ensure that the assumptions of the chosen statistic tests were met. The one-way ANOVA was utilized for each of the three research questions. This was the appropriate statistic because the one-way ANOVA is used to determine if statistically significant differences exist between the means of two or more independent groups and this fit the research scenario (Laerd Statistics, n.d.). In addition, each of the following test assumptions was met. The IV was categorical and used to compare (at least) two groups. The DV was numeric and continuous, and appropriate for calculating mean differences. There was an independence of observations such that no child was in both a traditional and flexible group, and there were no significant outliers. Although the distribution of the DV was slightly skewed to the left, the data passed the Kolmogorov-Smirnov test for normality ($p=0.2$). Assumptions for homogeneity of variance were also passed for each condition per Levene's test: total group ($p=.107$), girls ($p=.174$), and boys ($p=.522$). Therefore, the results as found may be considered valid.
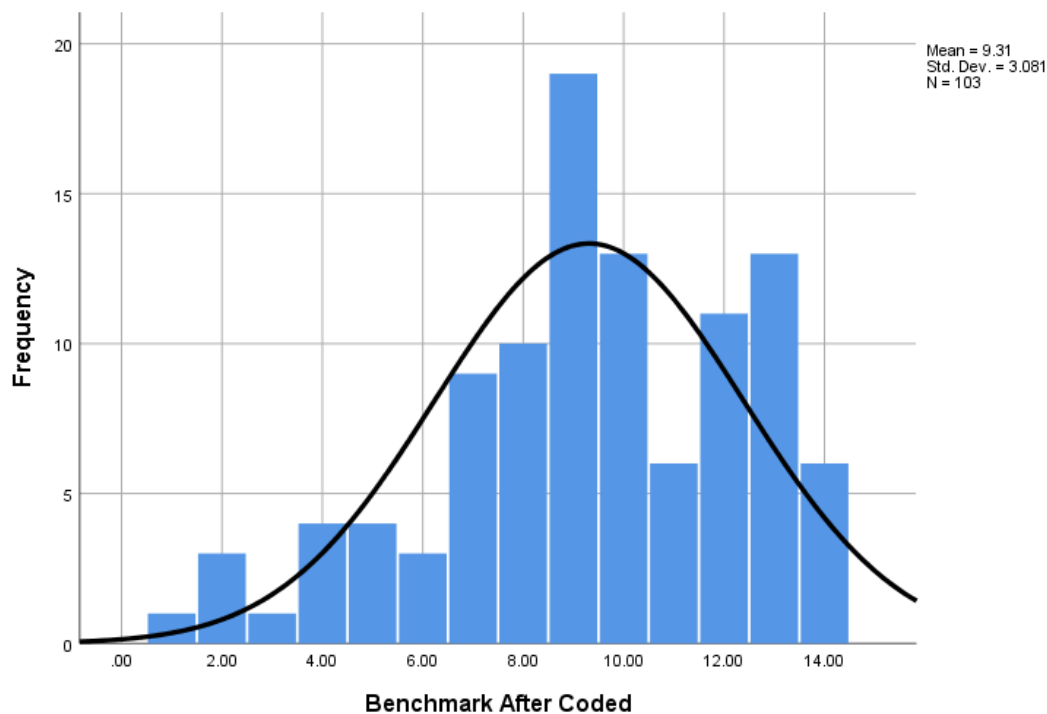
*Figure 2.* Complete distribution of scores.

The results indicate that there is no statistically significant difference in scores between all groups and subgroups.

**Hypothesis #1 - Differences in Reading Scores**

The one-way ANOVA was utilized to determine whether a significant difference in reading scores existed between first graders within the flexible and traditional seating groups (hypothesis 1). The IVs were either tradition or flexible seating along with Unit 4 reading instruction. The DV was the student's score after completion of Unit 4 instruction.

There is insufficient evidence at the .05 level of significance to conclude that first grade students (both genders) with flexible seating had higher scores (M=9.01) than did those with traditional seating (M=9.58), $F(1,101) = .783$, $p = .378$.

Table 2

*ANOVA Results for All Participants*

| Source | df | SS | MS | F | p |
|---|---|---|---|---|---|
| Between Groups | 1 | 7.44 | 7.44 | 7.83 | 0.378 |
| Within Groups | 101 | 960.61 | 9.51 | | |
| Total | 102 | 968.05 | | | |

Table 2 displays the differences in reading scores (based on the Fountas & Pinnell Benchmark system) among first grade students given traditional or flexible seating options. There was no significant difference in scores among the two groups; therefore, the null hypothesis was accepted. There is not sufficient evidence at the .05 level of significance to conclude that students with flexible seating had higher benchmark scores than did those with traditional seating.

**Hypothesis #2 - Differences in Reading Scores for Boys**

The one-way ANOVA was utilized to determine whether a significant difference in reading scores existed between boys within the flexible and traditional seating groups (hypothesis 2). The IVs were either tradition or flexible seating along with Unit 4 reading instruction. The DV was the student's score after completion of Unit 4 instruction.

There is insufficient evidence at the .05 level of significance to conclude that first grade boys with flexible seating had higher scores (M=9.16) than did those with traditional seating (M=9.04), $F(1,49) = .017$, p = .896.

Table 3

*ANOVA Results for Male Participants*

| Source | df | SS | MS | F | p |
|---|---|---|---|---|---|
| Between Groups | 1 | .188 | .188 | 0.017 | 0.896 |
| Within Groups | 49 | 532.322 | 10.864 | | |
| Total | 50 | 532.510 | | | |

Table 3 displays the differences in reading scores (based on the Fountas & Pinnell Benchmark system) among first grade boys given traditional or flexible seating options. There was no significant difference in scores between the two groups; therefore, the null hypothesis was accepted. There is not sufficient evidence at the .05 level of significance to conclude that boys with flexible seating had higher benchmark scores than did those with traditional seating.

**Hypothesis #3 - Differences in Reading Scores for Girls**

The one-way ANOVA was again utilized to determine whether a significant difference in reading scores existed between girls within the flexible and traditional seating groups (hypothesis 3). The IVs were either tradition or flexible seating along with Unit 4 reading instruction. The DV was the student's score after completion of Unit 4 instruction.

There is insufficient evidence at the .05 level of significance to conclude that first grade girls with flexible seating had higher scores (M=8.92) than did those with traditional seating (M=10.12), $F(1,50) = 2.240$, p = .141.

Table 4

*ANOVA Results for Female Participants*

| Source | df | SS | MS | F | p |
|--------|-----|---------|--------|-------|-------|
| Between Groups | 1 | 18.481 | 18.481 | 2.240 | 0.141 |
| Within Groups | 50 | 412.500 | 8.250 | | |
| Total | 51 | 430.981 | | | |

Table 4 displays the differences in reading scores (based on the Fountas & Pinnell Benchmark system) among first grade girls given traditional or flexible seating options. Similarly, there was no significant difference in scores between the two groups; therefore, the researcher failed to reject the null hypothesis. There is not sufficient evidence at the .05 level of significance to conclude that girls with flexible seating had higher benchmark scores than did those with traditional seating.

## Summary

The findings presented in Chapter 4 of the quantitative study collected from the Rapid City Area School District from March through May 2018, show no significant differences in reading scores among the groups studied. The purpose of the study was to investigate the academic reading scores of first grade students when given the option of flexible seating during independent reading. The one-way ANOVA test was used to determine the significance of the three research questions. All areas indicated no statistical differences in scores between students given flexible seating options and those in traditional seating.

## CHAPTER 5: CONCLUSIONS

### Overview

A summary of this study, including discussion of the results, implications, and its impact on elementary literacy, is presented here in Chapter 5. Limitations of the study and recommendations for further research are also given based on analysis and results as determined by the data collected.

### Discussion

The purpose of this study was to research whether first grade students who had the option of flexible seating during reading would show significant differences in reading scores when compared to first grade students who did not have the similar flexible seating options and were given a more traditional seating arrangement, consisting primarily of a desk or table and chair. This study also looked at the breakdown of gender to determine if flexible and traditional seating had the same impact specifically on first grade boys or girls.

The study was guided by the following research question: Do first grade students who participated in the use of flexible seating options show significant difference in reading gains scores when compared to first grade students who did not participate in the use of flexible seating options?

The review of literature presented a history of classroom setup and design from the beginning of the 20th century up to present day. The literature indicates that there has been a constant struggle throughout the decades to determine the most cost-effective way to educate students while eliciting desirable test scores and student engagement results. At the beginning of the 20th century, there was a movement to create an appealing environment, but by mid-century the comforts were set aside for a more cost-effective approach to educating the large number of

baby boomers making their way into American classrooms. Today's teachers continue to experiment with various classroom arrangements in an attempt to maintain high levels of student engagement and authentic learning experiences (Brekke-Sisk, 2006).

The literature also reviews choice theory and the balanced literacy approach used in many of today's classrooms. Making many different flexible seating options available to students during this study fit well with Glasser's choice theory by allowing students to fill their need for power, freedom, and at times fun (Glasser, 1998). Glasser also theorized that students are internally motivated to meet these basic needs, thus implying that allowing students to feel in control and have seating choices is reward enough to allow for better student concentration and longer attention spans. From the results of this study, it appears that students who are given the choice to sit, or lie, in a way chosen by the student, had little impact on their scores and reading levels. It would possibly be beneficial to see if this same type of flexible seating or traditional seating impacts other areas of education including student engagement, comfort, attention span, as well as other academic areas such as writing or mathematics.

In comparison to the Meeks et. al. (2013) study, the results of this study seem to confirm the notion that seat location does not impact student learning to a large degree. Although the same study also found that students who use traditional types of seating, such as desks and tables, seemed to perform better, this study could not support that finding.

Hinckson et al. (2016) also found that staying in the same position for long period of time was not beneficial to learning, along with the idea that the impact on academic progress still needs to be studied with greater depth and detail. While it is difficult to make a connection to the movement piece, it does seem that the impact of various seating types does need to be studied at a much greater depth than the research that is currently available.

There has been limited research done on the topic of flexible seating within the classroom setting. After an extensive search through various educational databases, much of the literature on flexible seating is based on opinions and articles, with very little information found in peer reviewed journals. For example, a Madison, WI, newspaper article (Walker, 2017) noted an emphasis on personalized learning supported by a belief that when students choose the type of seat that fits them best, it will result in increased academic performance. The article cited other teachers across the country asking community and parent groups to help them generate some of these outcomes for their students, highlighting a special education teacher at Madison Sandburg Elementary School who claimed flexible seating helps students decide how and where they learn best, which can benefit them as adults (Walker, 2017). The limited scholarly articles on the academic impact of flexible seating make it difficult to compare the results of the current study to previous studies. This also reveals a large gap in the research, making this study and any other follow-up studies very applicable to educational research today.

The overall results of this study indicate that the reading scores of students in the three different classrooms with flexible seating options and those students in the three classes with traditional seating options resulted in very similar scores. The findings of this study suggest that having flexible seating in an elementary classroom does not indicate a large difference in scores or any advantage to providing students more opportunities to move and make seating choices in the classroom. Further research is necessary to determine any long-term benefits or the cost-effectiveness of flexible seating. The two subgroups, boys in each type of seating and girls in each type of seating, also indicate no significant score differences amongst each other.

**Implications**

Traditional and flexible seating arrangements within the classroom are two very different approaches to creating the environment of a primary classroom. At this point, research is limited, and the little research that has been done indicates that more study needs to be completed to determine if either of these approaches benefits our young learners. Other outside factors such as socioeconomic status, culture, and age may also play a role in determining the best seating options for students.

More research is also necessary to determine the academic effects of flexible or traditional seating on reading achievement gains over a longer period of time. This study simply looked at the variation of scores among both groups. It was difficult to see clear differences in the 8–10 weeks allotted for this research. If repeated, it would be interesting to see if each setting had the same impact over the entire first grade year. More study and research to discover if students with traditional or flexible seating can make gains more quickly or to a greater degree than their counterparts could also help shed clearer light on this study.

Flexible seating within the classroom requires a certain degree of self-regulation. Many teachers with whom I have spoken who have implemented this type of seating in the elementary classroom struggle to find a classroom management system that works well with flexible seating. Many often wonder whether this type of seating leads to interpersonal conflicts, classroom management issues, and social competitiveness as children struggle to decide who will sit where each day.

There are also many other factors to take into consideration before jumping into the deep end of flexible seating in the classroom (Parnell, 2013). Questions teachers need to ask themselves may include:

- How much furniture do you really need in your classroom?

- Does every child need a desk?

- Does the teacher need a desk or is there an alternative?

- Does everyone need a chair? What will they use if they aren't using a chair?

- Will everyone be sitting at the same time?

- How will you handle whole group teaching situations?

- Where will children store their things? (Parnell, 2013)

The results from this study will help educators reflect on the current classroom setup and practices in place, especially at the primary level. Flexible seating in any classroom can come with a large price tag; before taking steps to change the educational learning environment, teachers and administrators often want evidence that the impact of such changes on students will be a step in a positive direction. Any changes, whether to the classroom environment or to curriculum, that indicate a positive growth in students learning should be studied further and revisited.

**Limitations**

As with any type of study, there are certain limitations and factors that cannot be completely eliminated. In this particular study, there are several factors that were addressed on the questionnaire that could be studied at a deeper level or with a larger number of participants.

The first factor is education level of the teacher participants. Within the flexible seating group two of the three teachers had completed a graduate level program, where only one teacher from the traditional group held a graduate degree. The impact of teacher education and specific training in the area of reading could have direct impact on student scores over and beyond that of the seating.

A second item that could be examined further is the number of years in the teaching profession. While five of the six participants had between two and nine years of experience, the sixth had 36 years of experience. The impact of experience could account for some students making larger gains or having differing scores from the rest of the groups.

Sample size is a third limitation to the study. While having over 100 participants does give solid results, these results cannot be generalized over the large population of first graders across the United States.

Another limitation of this study is the fact that no two classrooms with or without flexible seating are completely the same. A wide variety of factors such as the availability and type of alternative seating options, furniture arrangements, classroom square footage, and the teacher approach to implementation will inevitably contributed to teachers having different levels of success with flexible seating.

The time of year also presents a certain degree of limitation. The study was done during the last two months of the school year. The months of April and May are typically a busy time of the year. Often there are disruptions to the daily schedule and routines during the end of any school year. This could have affected the scores of either group.

Finally, class size is another factor that could have an impact on the use of flexible seating and its availability to students. Both sub-groups had very similar class sizes, but some schools have a higher level of student retention and less transient populations. Within each group some classes had as many as eight more students in the class.

**Recommendations for Future Research**

The following recommendations are suggested to enhance the findings of this study and further increase the knowledge and research on reading and flexible seating.

1. A longitudinal study using the same student population could be conducted to determine what effects, if any, the continued use of flexible seating has on students' long-term reading scores.

2. A study could be conducted to determine the effects, if any, for office referrals for students during the literacy block when given the choice of flexible seating options.

3. A study could be conducted to determine the effects, if any, for the social and emotional impact of student choice on learning and reading scores.

4. A similar study could be conducted in various school districts taking into consideration some of the factors listed within the limitations of this study to include class size, teacher education and training, and years of teaching experience.

The early years of reading instruction and learning can have long-term effects on a child's self-confidence and achievement. Researchers and educators should take all factors into account when considering the advantages and disadvantages of any program.

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**APPENDIX A**

**Classification Questionnaire**

1. Name?

   [                                    ]

2. Name of school you teach 1st grade at?

   [                                    ]

3. Total number of students in your class?

   [                                    ]

4. Number of male students in your class?

   [                                    ]

5. Number of female students in your class?

   [                                    ]

6. Years of teaching experience?

   [                                    ]

7. What is the highest level of education you have completed?

   [                            ▲▼]

8. What was your degree major?

   [                                    ]

9. During a typical day of reading in your classroom do students: (check all that apply)

   o   Spend time reading at a table or desk

   o   Spend time reading on a sofa

   o   Spend time reading at the teacher's table

   o   Spend time reading wherever they choose

10. Select the types of seating you offer students in your classroom? (check all that apply)

- o   Standard Desk & Chair

- o   Table & Chair

- o   Stools

- o   Table – Without Chairs

- o   Floor Pillows

- o   Bath Mats & Carpet Squares

- o   Futons & Couches

- o   Yoga Balls

- o   Wobble or Hokki Stools

- o   Crate Seats/Bucket Seats

- o   Scoops Rockers

- o   Benches

- o   Lap Desks & Clip Boards

- o   Standing Tables

- o   Teacher stations

- o   Other (please specify)


11.    With these seating choices in mind, what options are available to students during reading workshop? (See Question 10 for available options)

12.    With these same seating choices in mind, what options are available to students during reading workshop "Writing Time"? (See Question 10 for available options)

13.     With these same seating choices in mind, what options are available to students during reading workshop "Read to Someone" or "Buddy Reading" time? (See Question 10 for available options)

14.     With these same seating choices in mind, what options are available to students during reading workshop "Listen to Reading" or time when students use CD, cassette, or online program to listen to books read aloud? (See Question 10 for available options)

15.     With these same seating choices in mind, what options are available to students during reading workshop "Word Work" or "Spelling Work" time? (See Question 10 for available options)

## APPENDIX B

## Data Collection Directions

Teachers,

Thank you for being willing to participate in this study. Prior to beginning the fourth Reading Unit in March, please give each student the ***fiction*** assessment portion of the Fountas and Pinnell Kit for the reading level they are currently proficient at. (Remember a student must have a score of 97% to be passing.) If they fall lower than 97 % please test at the next level below. If they reach 100% please give them the next level above to ensure proper placement in done. Upon completion, please fill in the data on the following pages and submit it to ███████████████.

Hard copies of the assessments should be completed using the same student initials recorded on this form. It is not necessary to include the student's full name. Place all materials in the large manila envelopes provided and send through the school mail system to Stephana Logue at Corral Drive Elementary. Please send these hard copies both after the pre-assessment in March and again after the post-assessment the end of May.

Please submit this document twice, once after pre-assessments is complete and again after post-assessment is completed the end of May.

Please let me know if you have any further questions.
Stephana Logue

| Student ID Tag (To be assigned by Researcher) | Student Initials (If two students have the same initials please include a middle initial) | Student Gender (M/F) | Student Benchmark Level Prior to Teaching 4th Unit | Student Benchmark Level After Teaching 4th Unit |
|---|---|---|---|---|
| | | | | |
| | | | | |

## APPENDIX C

## Recruitment Letter



Greetings.

My name is Stephana Logue and I am a 1st grade teacher and doctoral student in the School of Education at Liberty University. I am conducting research to better understand Flexible Seating and the impact on 1st grade reading scores. I am writing to invite you to participate in my study.

You were selected as a possible participant because you are a 1st grade reading teacher with at least 2 years of teaching experience.

If you are willing to participate, you will be asked to submit the classification questionnaire and provide the archival information about the student scores. It should take approximately 20 minutes for you to complete the procedures listed. Your name and other identifying information will be requested as part of your participation, but the information will remain confidential.

If you are interested in participating, please complete and return the attached consent document to the researcher.

A consent document is included with this letter. The consent document contains additional information about my research. Please sign the consent document and return it before participating in the study. After receipt of the consent document, you will be sent a link to the classification questionnaire. Upon successful completion of all data collection, you will receive a $100 gift card for your efforts. If you have any questions, please do not hesitate to contact me.

Thank you for your time.

Stephana Logue
Graduate Student
Liberty University

**APPENDIX D**

**Letter of Support**
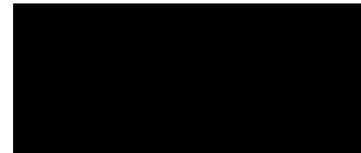
January 31, 2018

To Whom It May Concern:

Rapid City Area Schools agrees to provide assistance to Stephana Logue, a RCAS staff member, for the completion of a research study on "The Impact of Flexible Seating on First Grade Reading Scores".

Specifically, Rapid City Area Schools agrees to allow the following research to take place:

- Research involving 1st (first) grade students and teachers. There will be no other testing materials apart from the Fountas and Pinnel kits currently being used to assess 1st grade students. Ms. Logue is wishing to see if those in classrooms with flexible seating make gains more quickly than those in traditional seating environments.

Please feel free to contact me if you have further questions regarding Ms. Logue's dissertation topic for her IRB portion of the application.

Thank you.

Sincerely,

Dr. Lori J. Simon
Superintendent

**APPENDIX E**

**IRB Letter**

# LIBERTY UNIVERSITY.
## INSTITUTIONAL REVIEW BOARD

March 18, 2018

Stephana M. Logue
IRB Approval 3214.031818: Impact of Flexible Seating on First Grade Reading Progression

Dear Stephana M. Logue,

We are pleased to inform you that your study has been approved by the Liberty University IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

**G. Michele Baker, MA, CIP**
*Administrative Chair of Institutional Research*
**The Graduate School**

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**APPENDIX F**

**CONSENT FORM**

IMPACT OF FLEXIBLE SEATING ON FIRST GRADE READING PROGRESSION
Stephana Logue
Liberty University
School of Education

You are invited to be in a research to determine if students given the option of flexible seating during the reading block make larger gains than their peers using a tradition desk-chair or table-chair seating arrangement. You were selected as a possible participant because you are a 1$^{st}$ grade reading teacher with at least 2 years of teaching experience. Please read this form and ask any questions you may have before agreeing to be in the study.

Stephana Logue, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

**Background Information:** The purpose of this study is to determine if first-grade students who participate in the use of flexible seating options show significant difference in reading gains scores, when compared to first-grade students who did not participate in the use of flexible seating options?

**Procedures:** If you agree to be in this study, I would ask you to do the following things:
1. Prior to beginning the fourth Reading Unit in Mid-March the teachers to submit the classification questionnaire for researcher classification purposes only.
2. Teachers to provide the archival information about the student scores for both pre-assessment data and post-assessment data on the provided spreadsheet and submit both the spreadsheet and the assessment pages to ███████████████████ or through school mail to ███████████████████.

Groups will be assigned based upon your answers given in the questionnaire and/or follow up questions as need by the researcher for clarification.

**Risks:** The risks involved in this study in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

**Benefits:** There are no direct benefits to participants in this study. As a benefit to society, teachers will be given the opportunity to observe student reading behaviors one-on-one, engage in comprehension conversations that go beyond retelling, and make informed decisions that connect assessment to instruction.

**Compensation:** Participants will be compensated for participating in this study. Participants should expect to receive the gift of a $100 gift card, within one month, upon successful completion of all study related requirements. Benefits will *not* be pro-rated if a subject does not complete all parts of the study.

**Confidentiality:** The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records. I may share the data I collect from you for use in future research studies or with other researchers; if I share the data that I collect about you, I will remove any information that could identify you, if applicable, before I share the data.

- Participants will be assigned a pseudonym on all collected data.

- Data will be stored on a password locked computer and may be used in future presentations. After three years, all electronic records will be deleted

**Voluntary Nature of the Study:** Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or your school. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

**How to Withdraw from the Study:** If you choose to withdraw from the study, please contact the researcher at the email address included in the next paragraph. Should you choose to withdraw, data collected from you, will be destroyed immediately and will not be included in this study.

**Contacts and Questions:** The researcher conducting this study is Stephana Logue. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at Stephana.Logue@k12.sd.us or ███████████████. You may also contact the researcher's faculty chair, Michelle Goodwin at ███████████████.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 1887, Lynchburg, VA 24515 or email at irb@liberty.edu.

***Please notify the researcher if you would like a copy of this information for your records.***

**Statement of Consent:** I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

_____

Signature of Participant                                                                                   Date

_____

Signature of Investigator                                                                                   Date