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The Left- Handed Leader: Educational Experiences and Leadership Practices

Rebecca L. Huffstetler

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The Left-Handed Leader: Educational Experiences and Leadership Practices

By
Rebecca L. Huffstetler

A Dissertation Submitted to the
Gardner-Webb University School of Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

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Approval Page

This dissertation was submitted by Rebecca Huffstetler under the direction of the persons listed below. It was submitted to the Gardner-Webb University School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Gardner-Webb University.

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Thank you to my Creator and Savior for the blessings you have given me. Thank you for making me left-handed. Thank you for allowing me to live a life I count all joy.

Abstract

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The purpose of this study was to examine the experiences of left-handed school leaders during their elementary and secondary school years. Further, this study examined the impact of these experiences on leadership practices exhibited by left-handed school leaders.

The researcher used a mixed methods approach to conduct this study. For the quantitative portion of the study, left-handed and right-handed school leaders completed Kouzes and Posner's Leadership Practice Inventory (LPI) Self, Fourth Edition. To obtain qualitative data, left-handed school leaders also participated in an open-ended question interview where information was collected on their educational experiences in elementary school and secondary school as well as their leadership practices. Left-handed school leaders were also asked to identify any leadership practices they possessed which they attributed to being left-handed.

The three research questions addressed: left-handed school leaders primary and secondary school experiences, the dominant leadership practices of left-handed school leaders, and the relationship between the educational experiences and leadership practices of left-handed school leaders.

Findings suggest that the most dominant leadership practices of left-handed school leaders, based on the self-assessment survey, align with preexisting research on left-handers and left-handed leaders. Additionally, correlations can be made between the educational experiences and current leadership practices of left-handed school leaders.

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Chapter 1: Introduction

Barack Obama, Bill Clinton, George H. W. Bush, Ronald Reagan, Gerald Ford, Harry Truman, Herbert Hoover, Queen Victoria, Winston Churchill, Alexander the Great, Napoleon Bonaparte, Norman Schwarzkopf, Mahatma Gandhi, Benjamin Franklin, Marie Curie, Isaac Newton, Henry Ford, Oprah Winfrey, Bill Gates, Julia Roberts, Sarah Jessica Parker, Carol Burnett, Jerry Seinfeld, Jim Henson, Leonardo Da Vinci, Michelangelo, Raphael, Babe Ruth, LeBron James, Martina Navratilova, John McEnroe, Paul McCartney, Jimi Hendrix, Celine Deon, Lewis Carroll, and Mark Twain are all leaders in their field. They are all left-handed (Roth, 2009; Wright, 2007).

Statement of the Problem

Ten to 15% of the world's population is left-handed (Coren, 1993; Roth, 2009; Wright, 2007). As being left-handed becomes more culturally accepted and parents are less inclined to force their children to switch handedness, the percentage of left-handed citizens continues to increase (Lindsay, 1996; Masud & Ajmal, 2012; Roth, 2009); yet, despite the increase of left-handers in our society, there is little to no concern for the learning needs of left-handed students in our public school classrooms (Coren, 1993; Masud & Ajmal, 2012; Misigo, 2015; Wenzel & Wenzel, 2004).

Etymology of Left-Handed

Spoken before 3000 BC, the proto-European language, from which the ancient languages of Sanskrit, Greek, and Latin as well as other common European dialects are derived, had a term for "right," but one did not exist for "left." This omission is believed to have occurred due to the cultural taboos that were linked to the left side of the body (Wright, 2007).

The etymology of the term left derives from the Friesian word *luf*. *Luf* means

worthless and frail (Wright, 2007). The Old English term is *lyft*, which means broken (Coren, 1993). The Latin term for left is *sinistre*. From this term has evolved the English word for sinister. Likewise, the Greeks used the word *skaios* to not only describe those who were left-handed but also those who were considered to be ill omened or awkward (Wright, 2007).

As language has developed over time, the word left has found its way into international vocabulary, but the disdain for its existence is still present. The English word left derives from the Old English/Anglo-Saxon term *lyft*. The German term for left-handed is *linkish* which means awkward, clumsy, or *maladroit*. In France, the word *gauche* means left. It is defined as crooked, clumsy, or uncouth. The Italians use the word *mancino* for left-handers, and this word means crooked, deceitful, and dishonest (Coren, 1993). The 21st century definition of left-handed is as callous as it was in 3000 BC. The present-day definition of left-handed can mean “clumsy, awkward, insincere, backhanded, dubious” (Merriam-Webster Online, 2016).

Cultural Beliefs of Left-Handedness

Left-handers have a long history of being discriminated against and even persecuted among many cultures in the world (Coren, 1993; Hawkyard, 2014; McManus, 2002; Wolman, 2005; Wright, 2007). Perhaps no greater discrimination of left-handers exists than within the actions and writings of various world religions. Many Judeo-Christians used the Holy Scripture to justify the longstanding belief that God Himself was an advocate for the right-handed and an adversary of the left-handed. Furthermore, they took the plight of the left-handed further, believing that left-handedness indicated an alliance with Satan (Coren, 1993; Roth, 2009; Wolman, 2005). These beliefs came from the literal translations of scripture found in the Old and New Testament; scriptures such

as Isaiah 48:13, when God is speaking to the people of Israel about His omnipotence and omnipresence: “My own hand laid the foundations of the earth, and my right hand spread out the heavens; when I summon them, they all stand up together” (New International Version). In Psalm 16:8, the writer states, “I keep my eyes always on the Lord. With him at my right hand, I will not be shaken.” When discussing with Jonah the severity of sin and wickedness among the people of Nineveh whom he is sending them to save, God describes them in Jonah 4:11 as “a great city in which more than a hundred and twenty thousand people cannot tell their right hand from the left.” Both Gospels of Mark and Luke reference the right-hand side as a place of prominence. Mark 16:19 reads, “After the Lord Jesus had spoken to them, he was taken up into heaven and he sat at the right hand of God.” Likewise, Luke 22:69 states, “But from now on, the Son of Man will be seated at the right hand of the mighty God.” Perhaps the most the most damning scripture used against left-handers is found in Matthew 25: 31-46: It states,

When the Son of Man comes in his glory, and all the angels with him, he will sit on his glorious throne. All the nations will be gathered before him, and he will separate the people one from another as a shepherd separates the sheep from the goats. He will put the sheep on his right and the goats on his left. Then the King will say to those on his right, “Come, you who are blessed by my Father; take your inheritance, the kingdom prepared for you since the creation of the world. For I was hungry and you gave me something to eat, I was thirsty and you gave me something to drink, I was a stranger and you invited me in, I needed clothes and you clothed me, I was sick and you looked after me, I was in prison and you came to visit me.” Then the righteous will answer him, “Lord, when did we see you hungry and feed you, or thirsty and give you something to drink? When did

we see you a stranger and invite you in, or needing clothes and clothe you? When did we see you sick or in prison and go to visit you?" The King will reply, "Truly I tell you, whatever you did for one of the least of these brothers and sisters of mine, you did for me." Then he will say to those on his left, "Depart from me, you who are cursed, into the eternal fire prepared for the devil and his angels. For I was hungry and you gave me nothing to eat, I was thirsty and you gave me nothing to drink, I was a stranger and you did not invite me in, I needed clothes and you did not clothe me, I was sick and in prison and you did not look after me." They also will answer, "Lord, when did we see you hungry or thirsty or a stranger or needing clothes or sick or in prison, and did not help you?" He will reply, "Truly I tell you, whatever you did not do for one of the least of these, you did not do for me." Then they will go away to eternal punishment, but the righteous to eternal life.

Scriptures such as these were assuredly in the back of the minds of the early priests and rabbis who developed religious customs such as using the right hand for offering blessings and benedictions. In the Jewish faith, the blessing of the firstborn son is always done with the father's right hand placed on the head of the child (Coren, 1993). In the Catholic and Episcopalian church when serving Holy Communion, the priest uses his/her right hand to serve both the bread and the cup, while the recipient is also to use his/her right hand to receive and take the elements. The left hand is merely used as a supporting hand (Coren, 1993). For Christians whose denominations mark themselves with the sign of the cross in times of prayer and worship, it is considered blasphemous to make the cross with the left hand, even for the Greek Orthodox who cross themselves in the opposite direction of the traditional crossing ritual (Roth, 2009).

Much like the Jews and Christians, Buddhists and Hindus yield to the symbolism of the right and the left. In Buddhism, there are two paths which can be taken toward Nirvana, the ultimate spiritual destination. Buddhists believe the path to the right is the one to be taken and the path to the left is the one which should be avoided, as only the right-handed path will lead a follower to Nirvana (Coren, 1993; McManus, 2002). In the Hindu tradition when a person or an object is consecrated, people move in circle formation in a clockwise manner from left to right, so their right side faces that which is being consecrated. The reason for using this formation is so only the right side of the body, which is holy and virtuous, can radiate into the holy circle (Roth, 2009).

In addition to bias found in religion, there are also customs and beliefs which work against left-handers. Across time and around the globe, it is customary to shake hands, pledge allegiance, or take an oath, be it in a civil court room or the Presidential Oath of Office, with your right hand; however, there are also deep seeded cultural beliefs throughout the world. Unique to each people group, the overall theme is the same.

As noted by Wenzel and Wenzel (2004), a Japanese man who discovers his wife is left-handed has grounds for divorce. Natives living on the west coast of Africa in the country of Guinea consider their beer poisonous if their beer mug is touched with the left hand. Soldiers guard the holy temples in Greece to make sure anyone who enters the temple does so with their right foot first. They believe anyone who enters with their left foot first will curse the holy temple. Additionally, many inhabitants of the continents of Africa and Asia consider the left hand “unclean” and are prohibited to eat with this hand (Coren, 1993).

Robert Hertz was one of the earliest known researchers of the left-handed world. Released in 1907, in his study among indigenous people of the world, he uncovered

deeply entrenched beliefs about the left-handed (Hertz, 1960). The Maori people of New Zealand have placed severe limitations on left-handers. They believe the right side is the side of life. On the contrary, the left side is the side of death. This belief is so strong that in the Maori women who wove their ceremonial cloths were only allowed to do so with their right hand. To use the left hand for this sacred task was to put oneself at risk for death. Members of the Zulu tribe, found in the southern region of Africa, would place a young child's left hand in a hole in the earth which was filled with boiling water. This was an attempt to scald this hand rendering the left hand unusable. African tribes which lived along the Niger River accused women of using sorcery or attempting to poison tribe members if their left hand was used to prepare food. Hertz (1960) also found in the Dutch East Indies that children were considered to be well raised if their left hand was completely incapable of functioning independently. In order to achieve this desired status for their children, parents would bind the left arm at an early age so it was impossible for a child to use that hand.

As accommodating and accepting as our society has become toward embracing diversity, it would seem to reason that these ancient beliefs have transformed into mere superstitions; however, even in the 21st century, in the country of Taiwan, left-handers were strongly encouraged to switch to writing with their right hand and showing favor toward their right hand in other daily activities (Masud & Ajmal, 2012).

Classroom Challenges for Left-Handed Learners

Classroom teachers are well trained in and encouraging of a wide variety of developmental, academic, social, emotional, and cultural issues; however, it is highly unlikely that left-handedness is one of those issues (Coren, 1993; Fincher, 1977; Kula, 2008; Masud & Ajmal, 2012; Milsom, 2014; Wenzel & Wenzel, 2004).

The most common instructional challenge, and among the most universal basic and necessary life skills a left-handed learner experiences, is that of handwriting (Coren, 1993; Hawkyard, 2014; Milsom, 2014; Misigo, 2015). As readers read and writers write from left to right, the natural tendencies of handwriting yield to the right-handed. Left-handed writers are forced to push their writing utensil across a paper as opposed to pulling it. This practice does not allow for left-handers to have a relaxed and fluid writing style. It is the push and pull concepts which are used in letter and number formations. In order to make their writing neater and more controlled, it is the natural tendency of left-handed writers to use as many fingers as possible to hold their writing utensil. This results in their writing deep, often tearing the paper, and their grip too tight which quickens the fatigue of writers, particularly young, developing writers, and awkward letter formation. Left-handed writers also have a tendency to adopt awkward body positioning in order to position their left hand and their writing materials into a functional manner (Masud & Ajmal, 2012; Milsom, 2014; Wenzel & Wenzel, 2004). As writers progress in their writing and adopt more formal tools for writing (ink pens, markers, paint pens), the writing challenges increase. The common feature of developing left-handed writers is the “hooked position” whereby writers create a hook with their hand so the writing utensil is pulled and not pushed across the paper to mimic that of a right-handed writer (Milsom, 2014). This technique traditionally emerges as left-handed writers try to emulate their right-handed teachers who are teaching them basic writing formation. It also develops as left-handed writers use more formal writing tools which smudge or smear their writing as their hand follows their writing utensil. Formal writing tools, particularly ink pens, are designed to be used in a pulling motion and not a pushing motion, which is the motion used by left-handers, creating additional problems for left-

handed writers (Hawkyard, 2014; Milsom, 2014). Undertrained educators do not understand the complexity of the task of handwriting, thus making this basic educational and life skill extraordinarily difficult for left-handed learners.

The classroom structure is not conducive to the left-handed learner (Bloodworth, 1993; Coren, 1993; Lindsay, 1996; Masud & Ajmal, 2012; Milsom, 2014; Wright, 2007). When considering the list of classroom furniture and materials which cater to the right-handed learner, the list is alarming. Furniture and materials which create obstacles include single unit student desks with support for the right-arm only, spiral bound notebooks, three-ring binders, workbooks, test booklets, ruler, scissors, computer keyboards, the positioning of a computer mouse, pencil sharpeners, and most any instrument/tool used in laboratory courses or vocational/career-technical courses (Coren, 1993; Fincher, 1977; Hawkyard, 2014; Jernigan, 1986; McManus, 2002; Milsom, 2014). As a result, left-handed learners in the classroom not only face instructional challenges but structural challenges as well.

Purpose of the Study

Coren (1993) coined the phrase “the case for feast or famine” to illustrate the plight of the left-handed learner (p. 177). He recognized that left-handers made up a large portion of groups with varying learning disabilities. He was further intrigued by a study completed by Benbow (1986) at the University of Iowa State which looked at the Scholastic Aptitude Test (SAT) scores of the top 10,000 students. Benbow discovered that students scoring at the highest achieving level were two times more likely to be left-handed (Coren, 1993). As a result of these two observations, Coren (1993) came to the conclusion that left-handers operated in extremes; they are either “extremely dull or extremely bright” (p. 177).

F. Lee Bailey was a noted trial lawyer who had great intelligence and success in school. Before finishing his undergraduate degree, he entered Boston University School of Law. He graduated first in his class; however, he had to advocate for himself to achieve this prestigious goal. Bailey was left-handed. After he received a low mark on his first criminal law exam, he sought permission to use a typewriter on all exams. He made the request because as a left-hander, he was not a fast and neat writer and the timed assessment left him unable to write quickly and legibly enough to complete the exam on time (Silverstein & Silverstein, 1977).

Charlie Chaplin was a left-hander who refused to conform to the traditional rules of music. While many left-handers are encouraged not to play stringed instruments due to the disruption and lack of uniformity which occurs with them playing in the opposite direction of the orchestra, Charlie Chaplin was not discouraged. In his film, *Limelight*, Chaplin defied the rules of performance and played his violin left-handed. Many film viewers described this scene of the movie as appearing to be “off,” but none of them could explain why it appeared that way (Silverstein & Silverstein, 1977).

Mirrored writing is writing right to left in a reversed alphabet form. This style of writing is easily legible to a left-hander but not as easy to a right-hander unless the writing is placed in front of a mirror. Leonardo da Vinci and Lewis Carroll used mirrored writing techniques. Leonardo da Vinci recorded his greatest ideas and thoughts in mirrored writing. Lewis Carroll was an enthusiast of mirrored writing. In Carroll’s (1871) novel, *Through the Looking Glass*, he incorporated the use of mirrored writing and the use of mirrored reversals. Prior to World War I, a survey was conducted across the United States regarding the handwriting of school-aged children. One in every 2,500 students wrote in mirrored writing. Every single one of these children were left-handed.

Due to the trends of teaching writing to children in this era, it is believed that all children were taught to write with their right hands only; so when they wrote with their dominant hand, their writing resulted in a mirrored image (McManus, 2002; Silverstein & Silverstein, 1977; Wright, 2007).

Malusi (2014) conducted qualitative research in Kenya examining the left-handed learners in their secondary science classroom settings at their all-female school. Students, their parents, and teachers participated in the study. In this study, the findings were that handwriting posed a visible challenge for three of the five students. Students accommodated to this challenge by accepting that their writing was smudged and messy. Additionally, students also admitted to having their desk partners dictate notes to them to help them keep up with notetaking. All students preferred sitting on the left side of the classroom. Additionally, they preferred to position themselves so they did not knock elbows with their peers as well as sit to make sure they have enough space for their materials. When discussing seating, students said this same frustration carried over in the school cafeteria. All students admitted that participating in labs was frustrating because they were set up for right-handed learners. Students said that it would be easier for them to just work from the opposite side of the lab table whereby all materials would be to their left but that their teachers said it made it too easy for them to cheat if their back was facing the instructor. All students stated they felt pressure and often underperformed in timed assessments because of the design of the various pieces of equipment they were being asked to use in the labs. The teachers who were interviewed said they saw the students struggle but did not see it as their responsibility to make accommodations for them. The researcher concluded her study by recommending the Kenyan government add to their teacher training and in-service activities strategies for assisting left-handed

learners. Likewise, she posed that schools be sensitive to the learning needs of left-handed students and seek to make modifications such as additional time or left-handed materials for their learning.

Researchers in Tehran, Iran conducted a quantitative study in 2015 which examined the relationship between handedness and coping strategies of high school aged students. Thirty right-handed learners and 30 left-handed learners participated in the study. Fifteen males and 15 females were in each group. The Lazarus and Folkman Coping Strategy Checklist model, which measures coping strategies for particular stressful events, was used for the study. Each participant selected one recent life experience which created stress whereby they could recall the location they were in, their surroundings, and what they perceived their next steps were going to be. The participants then responded to 66 statements on the checklist indicating the extent to which they used each coping strategy on a Likert scale of four choices. The choices and scores ranged from Not Used, 1; Used Somewhat, 2; Used Quite a Bit, 3; and Used a Great Deal, 4. The 66 statements corresponded to one of eight coping strategies which were categorized into two overall coping strategy methods, appraisal-focused and emotion-focused (Malekzadeh, 2015).

Appraisal-focused methods, also referred to as problem-focused, focused on dealing with the source of the stress. Appraisal-focused strategies included the strategies of (active) direct coping strategies: taking steps to eliminate the problem, seeking social support, seeking advice from others about the problem, thinking only of how to address the problem, and waiting on the right time to respond to the problem. Emotion-focused strategies reflected attempts to handle thoughts and feelings according to the source of stress or problem. Emotion-focused strategies included separating self from the problem,

allowing one's self to embrace or to accept the problem, refusing to accept the problem, and reframing the problem in a positive manner (Litman, 2006; Malekzadeh, 2015).

The results of Malekzadeh's (2015) study revealed that left-handers use emotionally-focused coping strategies much less than right-handers. This was statistically significant. Likewise, it was statistically significant that left-handers used the appraisal-focused coping methods at a greater rate than right-handers.

Recommendations and conclusions from the study were that educators develop an understanding that high school students approach stress, classroom related or not, differently depending on handedness. Left-handed students are much more likely to address the problem as it is given to them, and right-handed students are more likely to address the emotions related to the problem. It was also recommended that knowing how students respond to stress could help teachers and counselors guide students in making choices in terms of extracurricular activities, elective class choices, and even majors in college (Malekzadeh, 2015).

The purpose of this study was to examine the experiences of left-handed school leaders during their elementary and secondary school years. Further, this study examined the impact of these experiences on leadership practices exhibited by left-handed school leaders.

Research Questions

1. When self-assessed, which leadership practices are most dominant in left-handed school leaders?
2. How did left-handed school leaders experience being left-handed in school?
3. What is the relationship between primary and secondary school experiences of left-handed school leaders and their leadership practices?

Significance of the Study

Left-handed learners must overcome many obstacles in their K-12 learning experiences (Coren, 1993; Fincher, 1977; Hawkyard, 2014; Jernigan, 1986; Malekzadeh, 2015; Malusi, 2014; McManus, 2002; Milsom, 2014; Silverstein & Silverstein, 1977). Many of the greatest leaders in the field of visual arts, science, sports, politics, performing arts, business, politics, and military leadership are left-handed (Roth, 2009; Silverstein & Silverstein, 1977; Wright, 2007). According to Wright (2007), throughout the course of history, there has been a trend of similar leadership traits observed in great left-handed leaders. This study is significant because it sought to make connections between these three statements. Additionally, it offers insight to the educational experiences of left-handed students who became educational leaders. It also reveals common leadership traits of left-handed school leaders and offers strategies for improving the educational experiences of all left-handed learners as well as utilizing the skill set of left-handed school leaders.

Overview of Methodology

This was a mixed-methods study. It was conducted as phenomenological qualitative study based on interviews with left-handed school leaders. From the interviews, data were collected and filtered through the common experiences shared

during the interviews. The nature of this interview process was to ask participants to recall educational experiences from their years as a learner as well as experiences as a school leader in order to answer the research questions. Additionally, there was a quantitative component based on the self-assessment of left-handed and right-handed school leaders and their leadership practices using the Leadership Practices Inventory–Self Survey created by Kouzes and Posner currently in its fourth edition (LPI).

Context of the Study

This study was conducted using self-identified left-handed school leaders as well as right-handed school leaders in one of the largest school systems in North Carolina. The left-handed and right-handed leaders were current school principals or district-level leaders who were 1 year removed from the principalship.

Definition of Terms

For the purpose of this study, the definitions of terms are identified below.

School leader. A school leader is a person who serves or has served as a licensed school principal within the past school year. This person may be an active principal or a central office leader.

Left-handed learner. A left-handed learner is a traditional school aged student (ages 5-18) who uses his or her left hand for activities which require the use of fine motor and routine practice (writing) or require the coordination of significant muscle groups to execute a task smoothly (throwing or eating; Roth, 2009).

Delimitations of the Study

The left-handed and right-handed school leaders participating in the study were current leaders within the school district in which the researcher worked and has been a lifelong resident. The knowledge and familiarity of the district and the interviewees had

the potential to be a liability. The researcher was a local leader in the field of education. The researcher is left-handed.

Limitations of the Study

School leaders reflected on their experiences in education Grades K-12. In the amount of time between these experiences and present day, perception can change which can skew the findings in the study.

Organization of the Study

Chapter 1 introduces the contrast of experiences faced by left-handed learners in our society and more significantly in our classrooms with the success of left-handed leaders in various fields which have emerged over the course of history. Chapter 2 presents a review of related and relevant literature on experiences of the left-handed in society and in school and their leadership characteristics as well as the five practices of exemplary leadership identified by Kouzes and Posner. The methodology for the research in this study is outlined in Chapter 3. The findings of data from the quantitative and qualitative research used to answer the questions posed in this study are presented in Chapter 4. A thorough summary of the research study, findings, and recommendations for practice and continued research are included in Chapter 5.

Chapter 2: Literature Review

Introduction

The purpose of this study was to examine the experiences of left-handed school leaders during their elementary and secondary school years. Further, this study examined the impact of these experiences on leadership practices exhibited by left-handed school leaders.

The purpose of this chapter is to review the literature of two themes not commonly associated with one another: left-handedness and leadership. This literature review specifically examines left-handers and their adaptation in society and in school as well as their leadership characteristics in addition to the five practices of exemplary leadership identified by Kouzes and Posner (2012): Model the Way, Inspire a Vision, Challenge the Process, Enable Others to Act, and Encourage the Heart.

Left-Handers in Society

Daily, left-handers face challenges based on the design of objects used in everyday life (Fisher, 2006; Milsom, 2014). These objects include vegetable peelers, scissors, bottle caps, musical instruments, magazines, newspapers, books, staircases, guns, fly casting fishing rods, computer keyboards, the computer mouse, serrated knives, pencil sharpeners, typewriters, office furniture, and cameras. Additionally, “How-To” books, written to assist individual in “do-it-yourself” type projects, provide directions and visuals which cater to the right-handed (Coren, 1993; Fisher, 2006; Kelly, 1996; Milsom, 2014; Silverstein & Silverstein, 1977).

The music world is designed for the right-handed. The flute is designed to be held to the right. The trumpet, trombone, tuba, and baritone are configured so the playing is controlled by the right hand. In contrast, the French horn is designed so the keys are

played with the left hand, yet the instruments in the strings family create the greatest difficulty for left-handed musicians (Milsom, 2014; Silverstein & Silverstein, 1977; Thomson, 2006; Villano, 2013).

Villano (2013) stated that only in the last few years has guitar playing become convenient for a left-hander. Prior to the recent accessibility of left-handed guitars, left-handers had to flip a right-hand designed guitar upside down and restring it to make it a left-handed instrument; however, the cost of a left-handed guitar is much greater than a right-handed guitar. In the orchestra world, there is no left-handed violin. The bow of the violin is held in the right hand, and the top violin teachers in the world refuse to instruct left-handed students differently (Milsom, 2014; Thomson, 2006).

There is a great social upheaval which comes with playing against the norm. For a violinist, to hold the bow with the left hand creates a disproportioned look to an orchestra. A left-handed violinist also creates a seating arrangement challenge for the conductor as a right-handed strings player cannot easily sit next to a left-handed violinist. For these reasons, many violinists are of the belief that a left-handed violinist will never be hired over a right-handed violinist even if the musicality and performance of the left-hander is better (Thomson, 2006). A left-handed guitar player faces social challenges as well. One guitar player reported that when in social settings where impromptu musical opportunities occur, he often has to turn down the opportunity to provide the accompaniment because the guitar on hand is designed for a right-hander. Left-handed drummers state they are also unable to participate in impromptu performances as the drum set for a left-hander is set up differently than it is for a right-hander (Milsom, 2014; Villano, 2013).

To do his part to make amends for the left-handed musician, French composer J.

Maurice Ravel composed a piece of music for the piano, *Concerto for the Left Hand*. Despite the efforts of pianists to play the piece using two hands, it indeed sounds best when performed, as composed, with only the left hand (Silverstein & Silverstein, 1977). In 1997, left-handed concert pianist Chris Seed commissioned the first left-handed piano. The entire piano is a mirror image of the standard piano. When he performs on this piano, the piano is open to the left and he is seated facing the left of the stage giving a physical and instinctive advantage in his performance. This concept led to the development of a module for electronic keyboards which can allow them to be converted to a left-handed replica of Seed's piano (Milsom, 2014).

There are many left-handed musicians who play right-handed, but musicians who play left-handed are in a league of their own. Villano (2013) stated, "to be left-handed is one thing; to play left-handed requires a willingness to defy established norms and embrace individuality" (p. 1).

Computer mice, computer keyboards, cameras, and telephones are four technological devices which are designed for right-handers (Coren, 1993; Milsom, 2014; Silverstein & Silverstein, 1977; Wenzel & Wenzel, 2004). The computer mouse is defaulted to the right-hander; however, it can easily be converted to meet the needs of a left-hander. Not only can it be manually placed on either side of the computer, it can also be reconfigured to change the primary and secondary buttons on the computer mouse (Milsom, 2014). While computer accessories are generally left-hander friendly, the same is not true for computer keyboards.

The QWERTY keyboard is found on all computers. Due to the design of this keyboard, 57% of all typing is completed with the left hand, thus making left-handers the most frequent winners of speed typing competitions (Coren, 1993); however, this design

was not intended with the left-hander in mind. It originated with a need to create a space on the typewriter between letters such as I and E which when typed in sequence on a manual typewriter often jammed the metal bars which swung when the keys were pressed (Coren, 1993). Modern desktop keyboards are a challenge for left-handers who are required to use the numerical keypad function located on the right-hand side of the computer keyboard (Milsom, 2014; Wenzel & Wenzel, 2004). Left-handers who need to use the keypad must cross the line of lateralization or temporarily reconfigure their workspace to make use of the keyboarding function (Coren, 1993; Milsom, 2014).

Cameras are not created to be used by left-handers (Coren, 1993; Milsom, 2014; Silverstein & Silverstein, 1977). When film is loaded into a camera, the cover opens to the left creating an open space for a right-hander to securely unload the film and then load and advance the next roll of film (Coren, 1993). Additionally, the buttons and eye piece on the camera are aligned for easy usage of right-handers (Milsom, 2014). This design remains a challenge for left-handed professional photographers who require specialized equipment. Photography has gotten easier for left-handers who are content to use current technology such as a wireless phone to take pictures (Milsom, 2014).

The telephone by design is easy for a left-hander to use. Telephone cords are generally attached to the left side of the phone base making it easy for left-handers to answer the phone, listen with their left ear, and return the phone to the cradle (Coren, 1993). What makes the use of the telephone easy for right-handers is when they are required to dial the phone number, take notes during the conversation, and transfer calls. While the design is easy for left-handers, it is not user-friendly if the phone call requires the left-handed listener to do more than simply listen (Coren, 1993; Silverstein & Silverstein, 1977).

The operation of many items used daily expose the difficulties for left-handers (Coren, 1993; Fisher, 2006; Kelly, 1996; Milsom, 2014; Silverstein & Silverstein, 1977). Kitchen items pose not only a problem but, if misused, a danger (Coren, 1993). The can opener is designed with multiple left-handed challenges. Not only is the can opener designed for the right hand to do the work of navigating the simple machine, but the rotation of the gears is caused by moving the handle away from the body instead of toward the body, which is the more natural direction for a left-hander (Coren, 1993; Milsom, 2014). Potato and vegetable peelers are designed to be used with the right hand pulling the peeler towards the body while the left hand is used to hold the food in place. For a left-hander to use the same peeler, the blade is forced to work against its pattern of design creating both less esthetically pleasing slices as well as an increased risk for injury (Coren, 1993; Milsom, 2014). Measuring cups and cooking ladles are designed to aid right-handers. While the cup or ladle can be held with either hand, the increments of measurement on the measuring cups as well as the spout for pouring from the ladle are placed on the left-hand side making the tasks of measuring and ladling difficult and, if hot liquids are in play, dangerous (Coren, 1993; Silverstein & Silverstein, 1977).

Left-Handers at School

Left-handed students face unique challenges in school. Challenges include handwriting, reading, some of their academic courses, the design of school supplies, and the layout of classrooms and classroom furniture and structures (Coren, 1995; Hawkyard, 2014; McManus, 2002; Milsom, 2014; Misigo, 2015; Silverstein & Silverstein, 1977). In August 2006, a United Kingdom based website, www.lefthandedchildren.org, devoted to supporting the needs of left-handed children, conducted a survey of 1,000 left-handed students under the age of 25 about their experiences in school. The survey revealed that

99% of left-handed students experienced difficulty with handwriting; however, only 10% stated that they were given specific guidance from their teachers regarding handwriting techniques. Responses also indicated that 85% of left-handed writers were never taught how to position their paper, their hand, or their writing utensil. Likewise, over 76% of participants indicated that after writing for a short amount of time, they experienced significant discomfort either in their back due to body positioning or in their left hand due to fatigue as a result of positioning of their hand or writing element. Eighty-eight percent of left-handed writers who participated in the survey indicated that they experienced great frustration due to smudging which occurred when they wrote (Milsom & Milsom, 2006). Students who write with their left hand are not taught to do so, they are allowed to do so (Bloodworth, 1993; Silverstein & Silverstein, 1977).

Left-handed students are individuals who are entitled to the same learning opportunities as their right-handed peers. Writing with the left hand is not the same as writing with the right hand (Bloodworth, 1993). Capital letter formation for left-handed students is not the same as it is for right-handed students. If properly trained in letter formation, no less than eight capital letters are formed differently by left-handed students. These letters are A, F, G, H, I, J, O, and T. These are letters where on the horizontal, left-handers push the pencil back from right to left as opposed to pulling the pencil left to right as right-handers do. The same principle applies to the letter O, whereby it is often written clockwise by left-handed writers (Milsom, 2014). Additionally, due to the formation of the circles in creating the letters, the lower-case letters b, d, p, and q are often written in reversal by beginning left-handed writers. This is also common in left-handers' writing of the numbers 2, 3, 5, 6, 7, and 9 (Fisher, 2006; Hackney, 1997; Milsom, 2014). Teachers need to understand left-handed writing is not just a reversal of

right-handed writing techniques (Bloodworth, 1993).

The physical act of writing is contradictory to the natural instincts of a left-handed person. Left-handed writers are forced to write toward the midline of the body as opposed to away from the midline of the body. This creates awkward positioning for the hand and the body. It also makes left-handed writers both messier writers and generally slower writers than those who are right-handed (Fisher, 2006; Hawkyard, 2014; Kelly, 1996; Milsom, 2014; Misigo, 2015).

Since left-handers are often not taught how to hold a pencil when learning to write, there is a trial and error process which they endure. The first negative experience most left-handed writers have is smudging. Since the left hand follows the writing utensil when writing, any work done with heavy pencil lead, pens, and markers is often smudged. This creates unintended and unintentional messy work for the left-handed writer (Bloodworth, 1993; Fisher, 2006; Hawkyard, 2014; Kelly, 1996; Milsom, 2014; Milsom & Milsom, 2006; Misigo, 2015; Wenzel & Wenzel, 2004). Out of frustration from smearing, most left-handed writers accommodate by hooking their hand. This not only creates significant discomfort, but it also limits their range of motion (Fisher, 2006; Hackney, 1997; Wenzel & Wenzel, 2004). The hook position is assumed to be accurate by emerging left-handed writers because when the writing tool is held in this manner, it mimics the angle in which the writing tool is held by a right-handed writer (Milsom, 2014; Misigo, 2015).

Milsom (2014) claimed there are three strategies which greatly enhance the writing experience and legibility of left-handed writers. The first is for the writing tool to be held in a three-finger grip. In this placement, the writing tool is held with the thumb and forefinger and it rests loosely on the middle finger, which should be bent. The hand

is positioned below the fingers and the forefinger does the work of guiding the writing tool while the other fingers provide support. The arm and hand should be relaxed.

Secondly, the positioning of the body requires the torso and shoulders to be square with the desk. The shoulders should be relaxed. Finally, the writing paper should be angled so the top right corner of the paper is aligned with the writer's sternum. This angle makes it more natural for the left hand to fall below the writing line and makes it less likely for the writer to hook their hand. Although it is not a strategy, Milsom (2014) recommended that the left-handed writer have open space to their left to allow for the recommended positioning of the hand, body, and paper to occur.

Left-handed learners must adapt to the design and materials of many courses throughout their schooling (Bloodworth, 1993; Kelly, 1996; Malusi, 2014; Malusi, Mungai, & Odiemo, 2015; Milsom, 2014). Reading poses initial problems for left-handed learners (Kelly, 1996; Milsom, 2014). Due to the fact that many beginning writers reverse several lowercase letters, this creates difficulty when it comes to learning to read and in reading their own writing (Kelly, 1996; Milsom, 2014). Additionally, reading is dependent on directionality. Like writing, reading moves from the left to the right. This is not the tendency for left-handers who naturally move from the right or mid-section to the left (Bloodworth, 1993; Kelly, 1996). According to Kelly (1996), once left-handed students adjust to the pattern of left-to-right reading, they are able to progress as readers at the same rate as their right-handed peers.

Career technical education courses such as business education, industrial technology, and culinary arts can pose obstacles for left-handed students (Kelly, 1996; Milsom, 2014; Silverstein & Silverstein, 1977). In business education courses, desks and workspaces are set up for all materials used for instruction and assessment to be placed to

the right of the keyboard. For students who prefer their working documents to be on their left, they must either have a crowded and inadequate workspace or they must work to the right, which is against their natural instincts (Kelly, 1996; Milsom, 2014).

Safety is the greatest concern for left-handed students in industrial technology courses (Milsom, 2014). Many industrial classrooms are designed so workspaces with tools are against walls so the center of the room is open for construction and assembly. Oftentimes, these work spaces are designed so the tools are placed in a manner leaving space open to the right for measuring, carving, and cutting. For this environment to be safe for left-handed students, work spaces need to be arranged so left-handed students have open space to their left. Left-handers should have the ability to line up their materials and body position in the same manner right-handed students do. Forcing students to use their weaker hand on tools or their weaker eye to gauge the alignment creates dangerous working conditions (Milsom, 2014). Tools with handles are difficult for left-handers to use as these handles are generally on the right side of the equipment. Likewise, the design of certain materials requires left-handers to conform to the behavior of right-handers. Nails are designed to be screwed into materials in a clockwise motion. This is a natural motion for right-handed individuals but not for left-handed individuals (Milsom, 2014; Silverstein & Silverstein, 1977). It is advised that teachers in industrial technology classrooms model proper use of equipment to students with respect to handedness. They should set up their classroom in a manner where students of both handedness have a safe and adequate working space (Kelly, 1996; Milsom, 2014; Silverstein & Silverstein, 1977).

Culinary arts courses present obstacles for left-handed students. There are several kitchen tools which are difficult for left-handers to use: kitchen scissors, can openers,

vegetable peelers, serrated kitchen knives, corkscrews, angled spatulas, and any measuring container where the increments of measure are on the left side of the handle. While it is not a difficulty, most refrigerators are designed to open with the right hand. (Milsom, 2014; Silverstein & Silverstein, 1997). Furthermore, the standard setup of most kitchen spaces has the tools placed to the right of the preparation area. Likewise, the pots, pans, and kettles have their handles turned to the left on the stove assuming the cook will stir with their right hand (Milsom, 2014).

Laboratory science classrooms create challenges for left-handed students. Two different studies conducted in Kenya focused on left-handed secondary students in laboratory science classes. The first was a mixed-methods study which examined the relationship between left-handed students forced to use right-handed equipment and their attitude toward chemistry. The second study was qualitative and documented the challenges left-handed female students faced in secondary school science laboratories.

In the first study, it was noted that in Kenya, the Ministry of Education sanctions the curriculum, materials, pacing, and assessment format for all courses. In chemistry courses, a portion of the national assessment is timed laboratory performance. All students are assessed in a prearranged work station. This work station is set up according to the national standards, which are designed for right-handers. Left-handed students who must make adjustments to the lab station once assessment time begins or work differently due to the arrangement are not given additional time on their examination (Malusi et al., 2015). Using quantitative data, there was little difference noted in attitudes between right-handed and left-handed students toward the chemistry course; however, qualitative data revealed left-handed students did have frustrations regarding their experiences in chemistry. Frustrations occurred with the apparatuses they were asked to

use, their teachers' lack of understanding about why they experienced difficulty with the various apparatuses, and the lack of regard given to their learning needs when administered high-stakes assessments (Malusi et al., 2015).

In the second study, female students spoke very candidly about their preferences and experiences in science classes. All students preferred to sit on the left side of the classroom as well as on the left side of a work station. They explained this allowed them to not inconvenience other students whom they would often bump into or invade their space of if they were to the right of a right-handed student. Left-handed students who were not allowed to sit in a preferred space had to make uncomfortable accommodations with their body and materials in order to fit in their designated area. Left-handers also stated standardized exams required a specific setup of work stations. Therefore, it was easier and faster for them to work from the back of the station so the setup could stay the same but the materials would be on their left; however, left-handed students said teachers did not like for them to do this because it could encourage cheating. Therefore, left-handed students were forced to either work across the lab station reaching from left to right to get needed materials or waste testing time resetting up the work station. Students were quite vocal about the frustrations experienced from time constraints which penalized them not for their knowledge or skill but because of their handedness (Malusi, 2014).

In addition to academic skills and courses, school tools create difficulty for left-handed students. The school tool which is the most difficult to use is scissors, while the right-armed tablet desk poses the greatest problems for left-handed students (Ghosh, 2016; Holder, 2003; Kelly, 1996; Milsom, 2014).

Left-handed students must adapt to using scissors designed for a right-handed

user. When right-handed scissors are used in the left hand, the blade covers up the cutting line or blocks the view of the cutting path. If a left-hander flips the scissors over in their hands so they can see the cutting line, the blades move away from the paper causing it to bend and tear as opposed to cutting it. To adapt, many left-handers assimilate to the practice of using right-handed scissors. This practice often causes soreness in the joints and thumbs as the design of the scissors is not made for the structure of the left hand (Kelly, 1996; Milsom 2014; Silverstein & Silverstein, 1977). While left-handed scissors do exist, it is rare that they are available in schools and found even more sparsely in upper grades and secondary schools (Milsom, 2014).

Left-handed students face disadvantages when they do not have access to left-handed student desks. They do not receive the same structural support when using right-handed desk furniture that right-handed students receive (Ghosh; 2016; Holder, 2003). The size of the desk table and the way a student holds their writing element are factors which impact the degree to which left-handed students who sit in a right-armed desk are likely to experience back, neck, and shoulder pain (Holder, 2003). In an article which exposed the low number of left-handed desks available at UCLA, Ghosh (2016) reported that left-handed students oftentimes just put their notebooks in their laps to take notes which is both chaotic and uncomfortable. Students admit this is not conducive to their learning. Students at UCLA argued they are at a disadvantage in their learning environments over something that is not within their control. In response to Ghosh's news report, a member of UCLA's facility management explained that they were looking to replace seating options in eight to 10 classrooms annually; however, most left-handed students at the university no longer expect to have student desks available which meet their writing and learning needs (Ghosh, 2016).

Student desks also create issues for students when taking timed assessments (Holder, 2003). The Educational Testing Services (ETS, 2007) directed test administrators to make accommodations for left-handed test takers. If left-handed desks are in the testing room, left-handers are to either sit in one column with one left-hander behind the other or in the last seat of each row of right-handers. ETS also noted that if no left-handed desks are available to test takers and they have to sit in right-armed desks, they are to have an empty desk to their left to place additional materials. The reason for this high-stakes testing accommodation is necessary due to the body positing, the general act of handwriting, and the management of multiple testing items required for testing make left-handed students slower in their work. This puts them at a significant disadvantage in timed assessments (Holder, 2003). It is argued by Holder (2003) that while many school systems and universities claim to have antidiscrimination policies, failure to provide for academic equity for both handed students in terms of student desks is indeed discrimination.

Other school tools which are difficult for left-handed students include the mounted pencil sharpener, three-ring binders and spiral notebooks, workbooks, rulers, testing pencils, and desktop computers (Kelly, 1996; Milsom, 2014; Silverstein & Silverstein, 1977).

Leadership Characteristics of Left-Handers

There is a stereotypical threat that surrounds left-handers. Negative associations and experiences could cause left-handers to become more self-conscious and more anxious (Wright & Hardie, 2015). The challenges and myths which left-handers face diminish the development of a healthy self-esteem (Kelly, 1996). McGuire and McGuire (1980) conducted a study among college students and secondary aged school children to

determine if handedness was more significant in the self-image of left-handers than right-handers. College students taking a particular course were asked to list 25 facts about themselves. Public school students were asked to both describe themselves and describe what they looked like. Students answered these questions in either an oral or written survey depending on their grade level in school. All results were determined by coders who were looking for references to the dependent variable in the study, salience of handedness regarding self-image, or concept. The results yielded that regardless of age, left-handers, in comparison to right-handers, used handedness as a way to identify themselves at a significantly greater proportion. Left-handers associate handedness as part of their self-concept. Masud and Ajmal (2012) conducted a phenomenological study among left-handed adults in Pakistan. Their study revealed that left-handers in the Pakistani culture admittedly face humiliation, sarcasm, and labeling due to being left-handed. They all mentioned they were markedly different from right-handers in terms of both functionality and acceptance. Being left-handed is a distinguishing characteristic; and as noted by Fisher (2006), the more distinctive a characteristic is, the more self-aware an individual becomes about possessing that characteristic.

In an attempt to add to the body of research of left-handers and their intrinsic perceptions and reactions, Wright and Hardie (2015) studied both the reaction times and anxiety levels of left- and right-handers in their completion of the Towers of Hanoi three- and four-disk challenges. There were four challenges based on novelty and complexity. The 203 participants were assigned one of the four challenges to complete. Each challenge required two different tasks to complete. Participants also completed a survey on anxiety based on their state of anxiety at the time of the challenges. The results of the study revealed that regardless of the challenge and whether it was the first or second trial,

left-handers took longer to initiate the first movement of disks than the right-handers. The novelty and complexity of the task was also an indicator of the initiation time by left-handers. Left-handers, while still slower than right-handers to initiate the task, had the fastest initiation time when the task was one of repetition and simplicity. Female left-handers took the longest of all participant groups to initiate the task. There was no significant difference in the actual ability of handedness to execute the task. Left-handers, especially left-handed females, displayed the highest amount of anxiety; however, anxiety was most prevalent when asked to complete the three-disk task. Wright and Hardie concluded that this was based on the fact that the fear of failure in a simple task would trigger a rise in anxiety; however, the fact that the four-disk challenge was supposed to be more difficult lessened the pressure to complete the task efficiently, thus reinforcing the belief of the power of the stereotype surrounding left-handers and their self-image and self-esteem.

Left-handers defy their aforementioned stereotypes when they participate in sports, particularly fencing, boxing, tennis, baseball, and other sports which involve two opponents across from one another (Smits, 2011). Fox News Sports (2013) inadvertently addressed this concept of left-handed athletes when it reported that the number of left-handed quarterbacks in the National Football League (NFL) had decreased drastically over the years. The end of the 20th century featured staunch quarterbacks such as Kenny Stabler, Bobby Douglas, Jim Zorn, Boomer Esiason, Steve Young, and Mark Brunell. The early 21st century brought to the game Cade McNown, Michael Vick, Matt Leinart, and Tim Tebow. As of 2013, there were less than five left-handed quarterbacks on NFL rosters, let alone in starting positions on Super Bowl caliber teams. One theory, posed by a former Super Bowl XXI MVP, Phil Simms, is that left-handed quarterbacks no longer

exist because left-handed pitchers are such a hot commodity in Major League Baseball. Any young left-hander who shows to have a strong arm and accuracy in throwing is quickly routed toward baseball and away from football. Simms stated it is not a conspiracy against left-handers in the NFL but a more lucrative career choice for left-handers to be a pitcher in baseball (Fox News Sports, 2013).

Left-handers bring both psychological and tactical benefits to the competition field due to their ability to strike at unanticipated angles and direction. As a result, right-handers are forced to recalculate their actions and motions, leaving the element of timing to the advantage of the left-hander (Roth, 2009). Furthermore, left-handers bring the element of surprise to the contest (Milsom, 2014; Roth, 2009; Wright, 2007). This element of surprise is afforded to the left-hander based in part on the activities controlled by the right hemisphere of the brain. The right hemisphere dictates motion control, three-dimensional processing and planning, and visual processing. While this can all happen simultaneously for the left-hander, the right-hander must transfer the visual information from the left to the right side of the brain. Despite the fact that it only takes 20-30 milliseconds for this transfer of information to occur and connect with the three-dimensional process and motion control, it is often too long of a time lapse during competition (Milsom, 2014; Roth, 2009). In addition to these advantages, due to having to accommodate daily to a right-handed world, left-handers are more dominant in speed, strength, and overall skill with their right hand than right-handers are with their left hand. Also, the hand-eye coordination of the nondominant hand is faster and more accurate in left-handers than in right-handers (Roth, 2009).

A study by Coren (1995) explored the divergent and convergent thinking levels of males and females in terms of handedness. Two different assessments were given to

gauge divergent thinking levels, which is the ability to solve a problem with many possible solutions. These assessments explain why left-handers are more commonly known to be artists, architects, mathematicians, and chess experts. In the first assessment, nearly 1,000 college-age students were given two unrelated objects and asked to combine them to create a functional object. On the second assessment, participants were given seven common nouns. They were asked to group these words in groups of two or more in as many series as possible. Results revealed that while women had no difference in divergent thinking levels, left-handed males significantly outscored right-handed males. The third assessment measured convergent thinking, which is the ability to solve a problem with one correct answer. Participants, given six nonsense words in a series, had to determine which word did not fit the pattern. Right-handed males and females outscored left-handed participants of both genders in this assessment. Lebowitz (2015) explained that generally, left-handers are more divergent thinkers while right-handers are more convergent thinkers.

Not surprising, two notorious examples of the surprise attack, divergent thinking and multi-step thinking, belong to left-handed leaders. Harry Truman, despite his noted calm and passive demeanor, ordered an atomic bomb be dropped on two cities in Japan bringing an end to World War II. Quite similar in thought but different in execution, left-handed Mahatma Gandhi led the people of India to freedom through the intentional and unwavering act of nonviolence; an act so powerful it was used in two other social change movements both in the United States with Martin Luther King Jr. and in South Africa with Nelson Mandela (Coren 1995; Roth, 2009; Wright 2007).

Left-handers live in a world that is not created for them (Wright, 2007). Roth (2009) made the case that the brain of a left-hander is also aware of these differences and

makes accommodations for it. Citing the work of Geschwind, Roth, (2005) explained that while left-handers may have left-hemispheric dominance, the wiring of their brains is “less strict or confined, and this opens up their cerebral development to a range of outcomes” (p. 92). McManus (2002) contributed that in the left-hander’s brain, submodules can develop in unconventional locations, meaning content or skills belonging to the right hemisphere in the standard brain can either fully exist or coexist in the left-hemisphere of the left-hander’s brain. Wang and Aamodt (2009) added that despite the fact that language skills such as reading, writing, and speaking reside exclusively on the left hemisphere of the brain, one in seven left-handers process language on both sides of their brain. Only one in 20 right-handers do this. This is attributed to the fact that left-handers must do so many things in a right-handed world that they, from an early age, have stimulated the development of the right hemisphere of the brain allowing both portions of the brain to house language skills. While most all right-handers have consistency in their brain in terms of left-hemispheric dominance, left-handers do not replicate this same pattern of consistency with the right hemisphere (McManus, 2002).

President Ronald Reagan is the perfect model to explain how left-handers benefit from linguistic double occupancy of the left and right hemispheres of the brain. As Nunberg (2004) explained, by the time President Reagan was inaugurated in 1981, he had emerged from the 1976 belief that he was a great communicator to being The Great Communicator. He earned this title by speaking to people in a style that balanced the sense of the immediate with casual conversation. Bauder (2008) explained that in presidential debates, he had the ability to turn both the debate and ultimately the elections in his favor with his quick responses. He had a knack for creating a moment in the debate that made him memorable and likable. Reagan defused the attacks on him made

by then-current President Jimmy Carter by simply stating, “There you go again” (Bauder, 2008, para. 1). Four years later, when running against Walter Mondale, the question was posed in a debate to address the public’s concern of the age of incumbent Reagan, who was currently the oldest person to ever serve as president of the United States. Reagan responded by stating he “wouldn’t make an issue of opponent Walter Mondale’s youth and inexperience” (Bauder, 2008, para. 5). From that point on, age was no longer an issue in the election which found Reagan in a second term in office. Nunberg described the difference between FDR’s fireside chats and Reagan’s conversational style as President Reagan possessed “a stylized language that stimulates the intimacy of conversation without actually partaking in it” (para. 4). Wright (2007) attributed Reagan’s rhetorical skills as the primary weapon used in the victory over Communism in Eastern Europe. Wright quoted Margaret Thatcher as saying, Reagan “took words and sent them out to fight for us” (p. 243).

McManus (2002) claimed left-handers have brains with a built-in tendency to be different. This difference is also the reason why left-handers “can be expected to be harbingers of change and disturbers of the status quo” (Wright, 2007, p. 9).

Some, frustrated by the dictates of society, become rebels, while others seek sanctuary by devoting their genius to largely solitary pursuits, where their unique minds are allowed to reign free. Other left-handers, however, adapt to a world where things are often the wrong way around. While this might be an impediment in the operation of can openers, scissors, and circular saws, it means the left-hander’s mind is more fully trained in adaption than the right-handers. We learn through imitating those around us. Most of us learn by imitating right-handers. For a lefty, this learning demands translation or adaption: an extra

cognitive step. Lefties have to concentrate harder to work out what to do.

(Wright, 2007, p. 9)

Those who have continually gone against the status quo of the right-handed world have made consistent and significant contributions in many areas of society. It can be argued that in the modern world, their “unusual and unpredictable predispositions may be more essential than ever” (Roth, 2009, p. 160).

Roth (2009) referenced the work of Harvard neuroscientist, Galaburda, to explain how the brain of a left-hander makes them a strong, strategic, military leader. Military leaders must navigate a great number of people and resources across vast distances. This is a task which requires intuition of navigation, geography, topography, strategic planning, and “a strong grasp of the relationship of objects in different patterns of space” (Roth, 2009, p. 180). Likewise, military leaders must also display the ability to modify their plans and strategies if the need arises for them to do so. Successful military leaders are also able to think many steps ahead of their opponents when devising military strategies (Roth, 2009; Wright, 2007). Roth claimed it is scientifically impossible to say that left-handedness is the sole reason left-handed military leaders are successful; however, there is a strong connection between the skills required of military success and the game of chess. Those who win at chess have the ability to anticipate not only their moves but the moves of their opponents. Coren (1993) stated that strong chess players are able to “visualize geometric patterns and how they would change for each given move” (p. 177). Top chess players are able to look at a chess board and see patterns emerge from either games they have previously played or from games they have studied. Among the top chess players in the world, 19% of them are left-handed. This is almost double the left-handed population of the world (Coren, 1993; Roth, 2009).

The war of claiming territory and the game of chess combines when a person seeks to become the President of the United States. Roth (2009) explained, “today’s national political contenders must envision the wide terrain that is the United States electoral map, with its fifty blue and red states, and conceptualize an optimal geographic strategy for a campaign” (p. 182). The most powerful position in the world is the President of the United States, and five of the last eight have been left-handed (Coren, 1993; Roth, 2009; Wright, 2007).

Another attribute that makes for successful presidents was revealed by Fisher (2006) and Roth (2009) when they cited the work of Trotter (1974) who stated that children who overcome the stereotypes and challenges of being left-handed can display stubbornness or a desire to go against traditional rules and societal norms. Left-handers, despite hearing the objections of others, are often willing and able to go at it alone when they believe a particular course of action is necessary.

Roth (2009) stated that in the modern era, candidates who are able to communicate and connect with people are the ones who emerge victorious. Roth continued to explain that the ability of the left-hander to integrate the left and right hemispheres of the brain to drive their choice of words and their emotional tone makes them appealing to the public. Wright (2007) added that left-handers also have the ability to appear empathetic when it helps them advance their agenda or position. Roth interviewed Coren in 2000; and he revealed that, based on his research, left-handers have a personality which is ideal for a politician. Coren stated in this interview that left-handers “tend to be more dominant rather than nurturing. And they tend to be a bit more pushy and a bit more cold” (Roth, 2009, p. 181).

Leaders must see themselves as different from those they lead. Leaders must

think unconventionally, and leaders must be able to anticipate not only the next action but several action steps ahead (Gardner, 2011). Wright (2007) supported the idea: “From the early savannas to the baseball diamonds, from Renaissance Italy to the Revolutionary War, to the White House,” left-handers have proven themselves to be outstanding political and military leaders (Roth, 2009, p. 161).

Work of Kouzes and Posner

Kouzes and Posner (2012) identified the five attributes leaders display at the pinnacle moments of their leadership. They referred these attributes as the five practices of exemplary leadership (Dixon, 2014; Kouzes & Posner, 2012; Tipton, 2007). These five practices are Model the Way, Inspire a Shared Vision, Challenge the Process, Enable Others to Act, and Encourage the Heart (Kouzes & Posner, 2012). Each of the five practices have two embedded behaviors serving as the core principles for learning to lead. Kouzes and Posner (2003a) identified these as the “10 commitments” of leadership (Tipton, 2007). The five practices and 10 commitments of leadership are shown in Table 1.

Table 1

The Five Practices and 10 Commitments of Leadership

Practice	Commitments
Model the Way	1. Find your voice by clarifying your personal values. 2. Set the example by aligning actions with shared values.
Inspire a Shared Vision	3. Envision the future by imaging exciting and ennobling possibilities. 4. Enlist others in a common vision by appealing to shared aspirations.
Challenge the Process	5. Search for opportunities by seeking innovative ways to change, grow, and improve. 6. Experiment and take risks by constantly generating small wins and learning from mistakes.
Enable Others to Act	7. Foster collaboration by promoting cooperative goals and building trust. 8. Strengthen others by sharing power and discretion.
Encourage the Heart	9. Recognize contributions by showing appreciation for individual excellence. 10. Celebrate the values and victories by creating a spirit of community.

Source: Kouzes and Posner (2003a, p. 12).

The LPI, which measures the five practices of exemplary leadership, was designed in 1983 by Kouzes and Posner. It has been named “the most reliable leadership development instrument available today” (Kouzes & Posner, 2003a, p. 9). The internal reliability for the LPI is strong. All five leadership practices have statistically measured, internal reliability scores above .75 for the self-assessment form (Kouzes & Posner, 2003a).

On the 30-question LPI, each of the five practices are represented by six

questions. Participants rate themselves on each statement on a 10-point Likert scale. The more frequently a behavior is used, the higher the participant rates himself/herself.

Lesser use of behaviors by the participant results in ratings with lower numbers. The specific response scale to identify each of the 30 behaviors is as follows: 1 – Almost Never; 2 – Rarely; 3 – Seldom; 4 – Once in a While; 5 – Occasionally; 6 – Sometimes; 7 – Fairly Often; 8 – Usually; 9 – Very Frequently; 10 – Almost Always (Dixon, 2014; Kouzes & Posner, 2012). Since its creation, over two million people worldwide have responded to the LPI. Recognizing that all effective leaders possess these five practices, this inventory looks to show leaders where they are performing strong and areas where they can continue to grow in the five practices of leadership (Kouzes & Posner, 2012).

Model the Way

Effective leaders model the way by developing and understanding their own voice. They know and consistently reflect in their words and actions their personal morals, ethics, beliefs, values, and expectations (Kouzes & Posner, 2003a). These leaders know the vision for their organization and use their voice to share it. Leaders who model the way set the example for everyone in their organization. They foster an organizational culture of loyalty to one another and to the organization (Kouzes & Posner, 2012).

Finding the answer to the question “Who are you?” is the first step on a leader’s journey (Kouzes & Posner, 2012). As cited in Patterson and Kelleher (2005), Larry Lezotte encouraged newly appointed leaders to “go off to your version of Walden Pond and decide on which hills you are going to die. That becomes your center” (p. 58). Lezotte continued to advise that leaders who are centered on their core values convey these in word and action to those around them. As a result, these personal values grow

and become the values of their followers (Patterson & Kelleher, 2005).

Collins (2001) offered that an organization that moves from good to great operates on what he refers to as the Hedgehog Concept. This concept requires clear understanding and action around three interconnected circles. Each circle asks one of the following questions: “What are you deeply passionate about? What can you be the best in the world at? What drives your (economic) engine?” (Collins, 2001, p. 96). Core values are what leaders are deeply passionate about. Core values cannot be manufactured. Core values cannot be motivated into others. Core values can only be discovered. When leaders consistently exemplify their core values, they inspire others to find these values within themselves (Collins, 2001).

The practice of modeling the way is so critical that it serves as the foundation of Covey, Merrill, and Merrill’s (1994) book, *First Things First*. Covey et al. offered that until leaders know what the first things are in their lives and until leaders give those first things the time they need and the attention they deserve and act on those things, they will never meet the demands of leadership. As stated by Patterson and Kelleher (2005), the strength of a leader’s beliefs determines the strength of their commitments. Furthermore, their beliefs determine how they respond in times of adversity and the length of perseverance despite the obstacles faced.

Modeling the way is about gaining the right and the respect to lead others. As legendary basketball coach Pat Summitt (2014) claimed, “Leadership is really a form of temporary authority that others grant you, and they only follow you if they find you consistently credible” (p. 240). According to Kouzes and Posner (2003b), “Exemplary leaders go first. They go first by setting the example through daily actions that demonstrate they are deeply committed to their beliefs” (p. 14). Kouzes and Posner

(2012) added, “Leadership is about relationships, about credibility, and about what you do” (p. 329). Leaders must model the way for those in their circle of influence, because “people first follow the person, then follow the plan” (Kouzes & Posner, 2003b, p. 15).

Inspire a Shared Vision

The writer of Proverbs 29:18 contributes, “Without a vision, the people perish” (King James Version). In contrast to this offering of wisdom, Kouzes and Posner (2012) admitted that of their five practices of exemplary leadership, inspiring a shared vision is the least used practice of those who take the LPI. It is also the practice that leaders admit to be the most challenging for them to execute.

McEwan (2003) referred to leaders who inspire a shared vision as Envisioners. Envisioners are leaders who have a vision not just for the immediate but for the next 5-10 years. The mark of an Envisioner is one who “has a vocabulary that can communicate that vision in meaningful ways to those who cannot see the invisible” (McEwan, 2003, p. 49).

De Pree (2004) claimed the only leader one should follow is one who has a vision. Maxwell (2002) contributed that

Vision is everything for a leader. It is utterly indispensable. Why? Because vision leads the leader. It paints a target. It sparks and fuels the fire within, and draws him forward. It is also the fire lighter for others who follow that leader. Show me a leader without vision and I’ll show you someone who isn’t going anywhere. At best, he is traveling in circles. (p. 53)

Addressing school leaders, Schlechty (2005) stated that more important than having a vision, setting goals, or reminding employees of goals is having goal clarity. There are four questions that school leaders must clearly be able to answer:

(a) Who are we; (b) What accomplishments will make us most proud; (c) What do we want to be like 5 years from now; and (d) If we present ourselves as who we say we are and accomplish what we propose to accomplish, is there reason to believe that those whose support we need will value our accomplishments as much as we do? (Schlechty, 2005, p. 152)

Without leaders who ask such questions, goal setting is nothing more than a crapshoot in an environment where various factions have an interest in loading the dice” (Helms, 2012; Schlechty, 2005, p. 152).

Leaders who inspire a shared vision are continually looking for the future. They understand what can happen for their organization if everyone is working together toward a unified goal. These leaders have the ability to communicate their vision in a way that creates excitement and buy-in from others. Leaders who inspire a shared vision “are expressive, and they attract followers through their energy, optimism and hope. With strong appeals and quiet persuasion, they develop enthusiastic supporters” (Kouzes & Posner, 2012, p. 100).

Challenge the Process

Friedman (2007) stated that companies who are surviving and growing in today’s society are those who are most prepared to change. Friedman explained that these companies understand “whatever can be done will be done. The only question is will it be done by you or to you” (p. 442). Leaders who seek opportunities to grow, change, and improve as well as experiment and takes risks while embracing the small victories and the lessons learned from mistakes are those who challenge the process (Kouzes & Posner, 2003a).

Leaders who seek to challenge the process must be resilient (Kouzes & Posner,

2012). Patterson, Goens, and Reed (2009) stated that resilient leaders do four things:

1. Show perseverance by staying true to the course of action, refusing to let adversity prevail.
2. Demonstrate adaptability by refusing to return to the old way of doing things when things do not go according to plan. They seek to create approaches to get through difficult times.
3. Display courage under fire when taking action based on principle, particularly when the course of action seems unclear or unnecessary to others.
4. Take personal responsibility for mistakes made and participates in corrective action measures as needed (p. 11).

Kouzes and Posner (2012) advised that when leaders are asked to recall their best moments in leadership, they always recall a time when they faced a challenge. The reason for this response is that difficulties force individuals to take a strong look at who they are and who they have the potential to become. Challenges bring out the best in people.

To further support this belief, Friedman (2007) offered an example of this practice on a global level. In conversation with the CEO of a global informational technology company, Friedman was startled by his comment in reference to India and other countries being able to compete for global knowledge work: “the playing field is being leveled” (p. 7). This CEO continued by advising the United States needed to prepare itself for this competition. Friedman acknowledged the pivotal statement the CEO made next. The challenge, he stated, will be good for America because America is always at its best when America is being challenged. Kouzes and Posner (2012) contributed to the idea that challenges require change and change requires leadership.

Change has the potential to create stress for individuals and an organization. Leaders who are seeking to challenge the process must create an environment where employees are “psychology hardy” (Kouzes & Posner, 2003a, p. 5). Leaders create these employees and this environment by being mindful of the size of the change and the pace at which the change occurs. In the midst of the change, leaders are aware of the need to celebrate the small victories in order to build the confidence of their team. They build confidence through acknowledging the minor achievements and creating a safe place where all are encouraged and willing to learn through trial and error as well as successes and accomplishments (Dixon, 2014; Kouzes & Posner, 2003b). “Extraordinary things don’t get done in huge leaps forward. They get done one step at a time” (Kouzes & Posner, 2003a, p. 5).

Enable Others to Act

Friedman (2007) explained part of the role of leadership is not that leaders be experts in everything but that leaders have a basic understanding of the forces which drive the world they lead. Likewise, before being elected President of the United States, then Governor of California Ronald Reagan remarked, “The greatest leader is not necessarily the one who does the greatest things. He is the one that gets the people to do the greatest things” (Wallace, 1975, para. 13).

Leaders enable others to act by fostering collaboration and strengthening others. Collaboration is built on cooperation and trust. Strengthening others is developing their competence and self-confidence (Kouzes & Posner, 2012).

Collins (2001) supported the rationale for enabling others to act by explaining a business model against which he advocates. The model is referred to as a “genius with a thousand helpers” (Collins 2001, p. 45). In this model, the business is built around the

strengths and talents of one individual. The leader has no need for a management team because they do not need any other ideas. The ones the leader has have proven to be effective. Everyone in the company works to carry out the ideas of this intelligent and dynamic leader thus creating great success for the company. This model works well until the leader moves on. At that point, the business is left in the hands of thousands of helpers who have cooperated, not with one another, but with the requests of a leader. Additionally, these helpers placed their trust not in one another but in the one genius leader who has moved on. Kouzes and Posner (2012) claimed that exemplary leaders know they cannot do it alone. They are dependent on all members of the organization to make great things happen.

Trust is the “central issue in human relationships. Without trust you cannot lead. Without trust, you cannot get people to believe in you or in each other. Without trust you cannot accomplish extraordinary things” (Kouzes & Posner, 2012, p. 219). Gimbel (2003) researched the idea of trust through the lens of school administrators and teachers. Working under the premise that trust is foundational for collaboration, she discovered that trust was defined very differently among school leaders. One principal defined trust as accessibility, another as walking the talk, and a third aligned the idea of trust with consistency and reliability. She came to the conclusion that “the substance of interpersonal trust in schools is rooted in the behavior of principals” (Gimbel, 2003, p. 8; Helms, 2012).

Kouzes and Posner (2012) proposed that leaders who desire high levels of performance, which are a byproduct of trust and collaboration, must be willing to trust their team before they expect their team to trust them. Leaders should recognize that “trust comes first and following comes second” (Kouzes & Posner, 2012, p. 222).

Creating self-confidence and competence in employees gives them power. In turn, these empowered employees will overperform. Leaders who give power away understand this makes them more powerful (Kouzes & Posner, 2012). McEwan (2003) explained this concept, which she referred to as the Elijah Effect, using a story from the Old Testament, 1 Kings 17: 8-15. In the story, the prophet Elijah had been wandering in the desert for many days. Rather famished, he encountered a widow who is using the last of her oil and flour to prepare dinner. He asks her to please share her meal with him. Convinced she is going to die of starvation, as she is using the last of what she has, she declines his request. Elijah pleads again asking that she only give him a small portion of what she makes for herself and her son. He promises that that if she shares her last portions of food with him, God will provide for her in abundance. She does, and God does. McEwan explained that when leaders share their power, the impact is far greater than they could imagine; however, when they share “power, responsibility and accountability, your return will exceed 100 percent and continue for as long as you keep sharing” (p. 64).

Patterson and Kelleher (2005) explained the key to building competence in the workplace is mentoring. Leaders should not only stay connected to their mentors but they should provide mentors for their employees. Mentors can fulfill many roles: provide advice and opportunities, offer emotional and practical support, teach and model how to think and behave, and influence self-efficacy. A strong mentorship disarms the “competency trap” (Patterson & Kelleher, 2005, p. 94) which is the belief that the longer you have been in a job or the more experience you have in your role, the less you need to seek the advice of others. Competent leaders encourage competency in their employees by modeling the idea of asking for help as an indicator of strength and self-confidence.

The idea of strengthening others is what creates managers out of entry-level employees and company leaders out of managers. It is what enables others to act (Kouzes & Posner, 2012).

Encourage the Heart

“Leadership is a potent combination of strategy and character. But if you must be without one, be without the strategy,” was a mantra of United States Army General Norman Schwarzkopf (Charlton, 2002, p. 83). Leaders who encourage the heart know the importance of strong character. Leaders motivate others with hope and courage. They highlight the individual contributions of their employees. They celebrate the accomplishments of their team and publicize their successes. These leaders recognize that while work is hard, it can also be fun. Mostly, leaders who encourage the heart “are in love- in love with people who do the work, with what their organizations produce and with their customers” (Kouzes & Posner, 2012, p. 272).

Whitaker (2003) revealed that when looking to create strong schools, it is critical to remember it is all about the people. Programs, he claimed, are never the problem and they are never the solution. He encouraged leaders that the most important work they have is to improve and promote the people in schools. Gostick and Elton (2012) added high-functioning teams celebrate all forward steps in the process of change. Members and leaders of these teams put forth great efforts to retrain the human brain to look for the positive instead of the negative. Leaders who continually seek to create a culture of encouragement and support of their employees understand they are investing in the future of their employees. A culture of goodwill yields innovation, commitment, and loyalty. They offer these four strategies for celebrating the accomplishments of employees: do it now; do it often; be specific; be sincere. Whitaker added if leaders do not take care of

their star employees, they will be the first to leave; for the best employees can survive anywhere.

Affirmation is the “extent to which the leader recognizes and celebrates school accomplishments and acknowledges failure” (Marzano, Waters, & McNulty, 2005, p. 41). When the best employees in any organization are acknowledged in a positive manner, they double their efforts and their loyalty. These employees feel a connection to their leader and to the organization (Whitaker, 2003). When affirming employees in the face of failure, it is critical for leaders to understand all employees need accountability and the best employees crave it. Healthy accountability builds understanding in the organization and well as within each individual. It helps each employee understand how to grow and improve. Healthy accountability allows for failures to be addressed with no surprises but with honesty and further plans to improve. It also allows for successes to be documented and genuinely celebrated (Gostick & Elton, 2012).

Pellicer (2003) contributed the belief that successful leaders possess the key virtues of love, friendship, devotion, responsibility, commitment, honor, and integrity above any monetary or personal profit. The very best leaders, Pellicer explained, “not only cared, they expressed their caring freely and openly on a daily basis, in ways large and small” (p. 33). They understand “leadership is personal” (Renfro, 2004, p. 7). Kouzes and Posner (2012) presented the belief that leaders who encourage the heart understand “leadership is not an affair of the head. Leadership is an affair of the heart” (p. 345).

Summary

Research indicates that left-handed individuals face many obstacles in our society. It also reveals that left-handed learners encounter numerous challenges in school both

through instructional expectations and through instructional and structural design. Left-handers have demonstrated over time their unique approach to strategic planning and short-term and long-term problem solving.

Research also validates the five practices of exemplary leadership by Kouzes and Posner (2012): model the way, inspire the vision, challenge the process, enable others to act, and encourage the heart. Each of these practices are a part of leadership and through their validated LPI, leaders are able to understand which of these principles are areas of strength and which are areas in which they need to grow.

Research does not tell whether left-handed learners who become school leaders have similar elementary and secondary school experiences. Furthermore, research does not reveal if there is a dominant practice reflected among left-handed school leaders when rating themselves on Kouzes and Posner's five practices of exemplary leadership. Finally, research does not reveal whether there is a relationship between elementary and secondary school experiences of left-handed leaders and their leadership practices.

Chapter 3: Methodology

Introduction

The purpose of this study was to examine the experiences of left-handed school leaders during their elementary and secondary school years. Further, this study examined the impact of these experiences on leadership practices exhibited by left-handed school leaders.

This study was a mixed-methods study, containing both quantitative and qualitative data collection. The absence of current research connecting the primary and secondary educational experiences of practicing left-handed school principals to their most dominant leadership practices led the researcher to use a mixed-methods approach. Using both qualitative and quantitative measures in tandem provided strength to the study that could not be achieved by using either measure independently (Creswell, 2009).

This chapter provides a description of the process the researcher used for this study. The description includes specifics regarding the research questions, the participants, data collection procedures, and details for how the data were analyzed.

The study sought to answer the following research questions.

1. When self-assessed, which leadership practices are most dominant in left-handed school leaders?
2. How did left-handed school leaders experience being left-handed in school?
3. What is the relationship between primary and secondary school experiences of left-handed school leaders and their leadership practices?

Participants

With approval from the superintendent (Appendix A), the research was conducted

among participants in a school district located in the Piedmont region of North Carolina. Participants were school leaders, current principals of the 54 schools in the school district, and central office leaders who were 1 year removed from the principalship.

Based on an email sent to 54 principals in the district and five central office leaders 1 year removed from the principalship inquiring about their handedness, 11 members of the 59-person pool responded stating they were left-handed. These candidates for participation represented 18.6% of the principals and those 1 year removed from the principalship in the district. The percentage of these left-handed principals in the district almost double the percentage of identified left-handers in the world. Ten left-handed school leaders and 10 right-handed school leaders agreed to participate in this study.

The Role of the Researcher

The researcher is a principal in the school district where the research was conducted. The researcher has been as a student, teacher, and assistant principal in the district as well. The researcher is a professional colleague of all eligible participants. All participants were volunteers.

Instruments

In this study, the researcher used one open-ended questionnaire and one rating instrument. The individual responses of each left-handed leader participant from an open-ended questionnaire (Appendix B) constructed the qualitative portion of the study. Kouzes and Posner's LPI (Appendix C) was the rating instrument used by left-handed and right-handed school leaders to collect data for the quantitative portion of the study. Permission was granted by Wiley & Sons, Inc. to use the LPI survey for this study (Appendix D).

In 1982, Kouzes and Posner began their study of exemplary leadership by asking the question, “What did you do when you were at your personal best as a leader?” (Kouzes & Posner, 2012, p. 2). The answers to this question resulted in their development of The Five Practices of Exemplary Leadership: Model the Way, Inspire a Shared Vision, Challenge the Process, Enable Others to Act, and Encourage the Heart (Kouzes & Posner, 2012).

Posner (2016) explained the LPI was designed to measure 30 statements which reflect the actions and behaviors of the five leadership practices. Each leadership practice has six correlating statements (Appendix E). Survey participants rate themselves on a 10-point Likert scale. The frequency of the rate in which each principle is used is measured by the numeric value assigned to each statement. The higher the numeric value is, the higher the frequency is. The potential range of each of the five leadership practices is from 6-60.

Kouzes and Posner (2012) claimed the LPI provides between 500,000 and 750,000 responses annually. Between 2007 and 2015, over 2.8 million responses have been collected (Posner, 2016). These responses become part of the body of the empirical data used to analyze survey results (Posner, 2002).

Posner (2016) explained the internal reliability of the LPI measured by Cronbach alpha coefficients are strong. Instrument reliabilities .60 and above are considered to be good. Instrument reliabilities .80 and above are considered to be very strong. On the LPI, the internal reliability of each practice is as follows: Model the Way – 0.810; Inspire a Shared Vision – 0.901; Challenge the Process – 0.843; Enable Others to Act – 0.825; Encourage the Heart – 0.898 (Posner, 2016).

Data Collection Process

All eligible school leaders were sent an email providing a brief description of the proposed study and an invitation to participate in the research. Ten left-handed school leaders agreed to participate. Nineteen right-handed school leaders agreed to participate. In order to select the 10 right-handed participants, a random selection was conducted. All eligible participants were asked to give their consent (Appendix F) to take part in the study. These 20 participants were invited to an online meeting forum to discuss the purpose of the research and to explain the quantitative and qualitative data collection process. The data collection process was as follows.

1. Following the online meeting, all participants were given a paper copy of the LPI. Participants were asked to complete and return the survey to the researcher within 1 week. An electronic reminder was sent to all participants who had not returned the survey when there were 3 days left in the desired completion window.
2. LPI survey data were to be entered by the researcher using LPI scoring software. From the scoring software, customized reports were generated for each individual participant as well as for the group as a whole.
3. Following the collection of the LPI survey from all participants, the researcher conducted individual interviews with all left-handed school leader participants and asked each of them the following questions.
 - a. Describe your elementary school experiences as a left-handed person.
 - b. Describe your secondary school experiences as a left-handed person.
 - c. Describe how your left-handedness contributes to the leadership practices you currently have.

- d. Describe how any experiences you have had as a left-hander could have influenced your responses to the LPI.
4. Interview data were transcribed for analysis.
5. The qualitative data were analyzed for common themes or experiences. Common themes were color-coded and frequencies were hand counted. Themes or experiences which were mentioned one to two times were considered to have a low frequency. Themes or experiences which were mentioned between three and five times were considered to have a moderate frequency. Themes or experiences which were mentioned six or more times were considered to have a high frequency.
6. The quantitative data were provided by using the mean and standard deviation of the collective left-handed and right-handed responses among school leaders to conduct a summary sample t test. Individual responses to the 30 statements on the LPI using the Likert scale were grouped by right-handed and left-handed responses and used to create a crosstabulation to provide a more detailed analysis of the responses.
7. The analyzed qualitative and quantitative data were used to answer the three research questions. The qualitative data were used to report themes of the educational experiences of left-handed leaders. Quantitative data were used to explain any patterns which emerge among the leadership practices of left-handed leaders. All collected data were used to determine if there was a relationship between identified educational experiences of left-handed school leaders and their pattern of leadership practices.

Summary

This chapter outlined the methodology that was used in this study. A mixed-methods approach was used to gain insight into the elementary and secondary school experiences of left-handed school leaders as well as their current leadership practices revealed through their self-assessment derived from Kouzes and Posner's LPI. This chapter described the instruments which were used in the qualitative and quantitative portions of the study and the data analysis used for each.

Chapter 4: Results

Introduction

The purpose of this study was to examine the experiences of left-handed school leaders during their elementary and secondary school years. Further, this study examined the impact of these experiences on leadership practices exhibited by left-handed school leaders.

The study's population consisted of 18 principals and two central office leaders 1 year removed from the principalship, all of whom work in a school system in the Piedmont region of North Carolina. Of these 20 school leaders, 10 identified themselves as left-handed and 10 self-identified as right-handed.

The research method for this study was a mixed-method design, allowing for an analysis of both quantitative and qualitative data. Each left-handed leader provided responses to an open-ended questionnaire which constructed the qualitative portion of the study. In the qualitative portion of the data analysis, individuals are identified as LH1, LH2, LH3, LH4, LH5, LH6, LH7, LH8, LH9, and LH10. Both left-handed and right-handed school leaders completed the Kouzes and Posner's LPI which was the rating instrument used to collect data for the quantitative portion of the study.

The study was guided by the following research questions.

1. When self-assessed, which leadership practices are most dominant in left-handed school leaders?
2. How did left-handed school leaders experience being left-handed in school?
3. What is the relationship between primary and secondary school experiences of left-handed school leaders and their leadership practices?

Research Question 1

When self-assessed, which leadership practices are most dominant in left-handed school leaders? This research question was answered using the responses of the left-handed and right-handed school leaders on the LPI. The results of the summary t test were based on the mean responses of the 10 left-handed school leaders. Additionally, the crosstabulation of responses by both sets of school leaders to the 30 statements aligned to the five practices measured by the LPI was used as well.

Model the Way. A summary t test was conducted to compare the left-handed school leaders mean for this LPI practice to the mean for right-handed school leaders. The summary t test was not significant, $t(18) = 2.020, p = .059$. The mean for left-handed school leaders ($M = 46.400, SD = 4.400$) was lower than the mean for right-handed school leaders ($M = 51.000, SD = 5.700$). The mean difference between left-handed school leaders and right-handed school leaders was 4.600. Left-handed school leaders rated themselves as lower than right-handed school leaders for the practice Model the Way. When using the crosstabulation, the combined number of affirmative statements (responses corresponding to the top three rankings on the Likert scale [usually, very frequently, and almost always]) from each of the six statements which related to this practice was 37 of a possible 60.

Inspire a Shared Vision. A summary t test was conducted to compare the left-handed school leaders mean for this LPI practice to the mean for right-handed school leaders. The summary t test was not significant, $t(18) = 1.922, p = .071$. The mean for left-handed school leaders ($M = 39.300, SD = 5.200$) was lower than the mean for right-handed school leaders ($M = 45.100, SD = 8.000$). The mean difference between left-handed school leaders and right-handed school leaders was 5.800. Left-handed school

leaders rated themselves as lower than right-handed school leaders for the practice Inspire a Shared Vision. When using the crosstabulation, the combined number of affirmative statements (responses corresponding to the top three rankings on the Likert scale, 'Usually, Very Frequently, and Almost Always) from each of the six statements which related to this practice was 22 out of a possible 60.

Challenge the Process. A summary t test was conducted to compare the left-handed school leaders mean for this LPI practice to the mean for right-handed school leaders. The summary t test was not significant, $t(18) = 1.479, p = .156$. The mean for left-handed school leaders ($M = 41.700, SD = 5.900$) was lower than the mean for right-handed school leaders ($M = 46.200, SD = 7.600$). The mean difference between left-handed school leaders and right-handed school leaders was 4.500. Left-handed school leaders rated themselves as lower than right-handed school leaders for the practice, Challenge the Process. When using the crosstabulation, the combined number of affirmative statements (responses corresponding to the top three rankings on the Likert Scale, 'Usually, Very Frequently, and Almost Always) from each of the six statements which related to this practice was 23 out of a possible 60.

Enable Others to Act. A summary t test was conducted to compare the left-handed school leaders mean for this LPI practice to the mean for right-handed school leaders. The summary t test was not significant, $t(18) = .504, p = .621$. The mean for left-handed school leaders ($M = 48.900, SD = 3.200$) was lower than the mean for right-handed school leaders ($M = 49.900, SD = 5.400$). The mean difference between left-handed school leaders and right-handed school leaders was 1.0. Though the closest mean difference of the five practices, left-handed school leaders rated themselves as lower than right-handed school leaders for the practice, Enable Others to Act. When using the

crosstabulation, the combined number of affirmative statements (responses corresponding to the top three rankings on the Likert Scale, ‘Usually, Very Frequently, and Almost Always) from each of the six statements which related to this practice was 44 of a possible 60.

Encourage the Heart. A summary *t* test was conducted to compare the left-handed school leaders mean for this LPI practice to the mean for right-handed school leaders. The summary *t* test was not significant, $t(18) = 1.846, p = .081$. The mean for left-handed school leaders ($M = 44.000, SD = 7.100$) was lower than the mean for right-handed school leaders ($M = 50.200, SD = 7.900$). The mean difference between left-handed school leaders and right-handed school leaders was 6.200. This was the greatest mean difference among the five practices between left-handed and right-handed school leaders. Left-handed school leaders rated themselves as lower than right-handed school leaders for the practice, Encourage the Heart. When using the crosstabulation, the combined number of affirmative statements (responses corresponding to the top three rankings on the Likert Scale, ‘Usually, Very Frequently, and Almost Always) from each of the six statements which related to this practice was 29 out of a possible 60.

Comparisons of the mean of responses to the Kouzes and Posner LPI by left-handed and right-handed school leaders are shown in Table 2.

Table 2

Summary t-Test Mean Comparisons of Left-Handed and Right-Handed School Leaders on the Kouzes and Posner LPI _

Leadership Practice		<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Model the Way	Left-Handed	10	46.40	4.40	2.02	18.00	.059
	Right-Handed	10	51.00	5.70			
Inspire A Shared Vision	Left-Handed	10	39.30	5.20	1.92	18.00	.071
	Right-Handed	10	45.10	8.00			
Challenge The Process	Left-Handed	10	41.70	5.90	1.47	18.00	.156
	Right-Handed	10	46.20	7.60			
Enable Others To Act	Left-Handed	10	48.90	3.20	.50	18.00	.621
	Right-Handed	10	49.90	5.40			
Encourage The Heart	Left-Handed	10	44.00	7.10	1.84	18.00	.081
	Right-Handed	10	50.20	7.90			

A crosstabulation of the individual responses of left-handed and right-handed school leaders for each of the thirty statements on the LPI are represented in Table 3 Table 4, Table 5, Table 6 and Table 7. There are five practices and six statements are linked to each practice. Individuals ranked themselves on a Likert Scale of 1-10. Each table below represents one of the five practices of leadership identified by the LPI.

Table 3

Crosstabulation of Individual Responses to the six Model the Way Statements on the LPI by Right-Handed and Left-Handed School Leaders

Criteria		Right-Handed		Left-Handed		Total	
		N	%	N	%	N	%
Sets a personal example of what he/she expects of others	Fairly Often	1	5.00%	2	10.00%	3	15.00%
	Usually	1	5.00%	3	15.00%	4	20.00%
	Very Frequently	5	25.00%	5	25.00%	10	50.00%
	Almost Always	3	15.00%			3	15.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Spends time and energy making certain that the people he/she works with adhere to the principles and standards that we have agreed on	Once in a While			1	5.00%	1	5.00%
	Occasionally	1	5.00%	1	5.00%	2	10.00%
	Fairly Often	2	10.00%	4	20.00%	6	30.00%
	Usually			2	10.00%	2	10.00%
	Very Frequently	4	20.00%	2	10.00%	6	30.00%
	Almost Always	3	15.00%				
	Total	10	50.00%	10	50.00%	20	100.00%
Follows through on promises and commitments he/she Makes	Sometimes			2	10.00%	2	10.00%
	Usually	1	5.00%	1	5.00%	2	10.00%
	Very Frequently	5	25.00%	6	30.00%	11	55.00%
	Almost Always	4	20.00%	1	5.00%	5	25.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Asks for feedback on how his/her actions affect other people's performance	Seldom	1	5.00%			1	5.00%
	Once in a While			1	5.00%	1	5.00%
	Occasionally	1	5.00%			1	5.00%
	Sometimes			4	20.00%	4	20.00%
	Fairly Often	2	10.00%	3	15.00%	5	25.00%
	Usually	3	15.00%	2	10.00%	5	25.00%
	Very Frequently	3	15.00%			3	15.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Builds consensus around a common set of values for running our organization	Sometimes	1	5.00%			1	5.00%
	Fairly Often	1	5.00%	3	15.00%	4	20.00%
	Usually	1	5.00%	5	25.00%	6	30.00%
	Very Frequently	5	25.00%	2	10.00%	7	35.00%
	Almost Always	2	10.00%			2	10.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Is clear about his/her philosophy of leadership	Fairly Often	4	20.00%	2	10.00%	6	30.00%
	Usually	1	5.00%	4	20.00%	5	25.00%
	Very Frequently	3	15.00%	4	20.00%	7	35.00%
	Almost Always	2	10.00%			2	10.00%
	Total	10	50.00%	10	50.00%	20	100.00%

Table 4

Crosstabulation of Individual Responses to the Six Inspire a Shared Vision Statements on the LPI by Right-Handed and Left-Handed School Leaders

Criteria		Right-Handed		Left-Handed		Total	
		N	%	N	%	N	%
Talks about future trends that will influence how our work gets done	Rarely			1	5.00%	1	5.00%
	Seldom	1	5.00%			1	5.00%
	Occasionally	1	5.00%	1	5.00%	2	10.00%
	Sometimes	2	10.00%	2	10.00%	4	20.00%
	Fairly Often	2	10.00%	2	10.00%	4	20.00%
	Usually	2	10.00%	1	5.00%	3	15.00%
	Very Frequently	1	5.00%	1	5.00%	2	10.00%
	Almost Always	1	5.00%			1	5.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Describes a compelling image of what our future could be like	Seldom	1	5.00%			1	5.00%
	Once in a While			5	25.00%	5	25.00%
	Occasionally			1	5.00%	1	5.00%
	Sometimes	2	10.00%			2	10.00%
	Fairly Often	3	15.00%	2	10.00%	5	25.00%
	Usually	2	10.00%	2	10.00%	4	20.00%
	Very Frequently	2	10.00%			2	10.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Appeals to others to share an exciting dream of the future	Rarely	1	5.00%	1	5.00%	2	10.00%
	Once in a While			1	5.00%	1	5.00%
	Occasionally	3	15.00%	1	5.00%	4	20.00%
	Sometimes	2	10.00%	2	10.00%	4	20.00%
	Fairly Often	2	10.00%	4	20.00%	6	30.00%
	Usually			1	5.00%	1	5.00%
	Almost Always	2	10.00%			2	10.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Shows others how their long-term interests can be realized by enlisting in a common vision	Seldom			1	5.00%	1	5.00%
	Once in a While			1	5.00%	1	5.00%
	Occasionally			2	10.00%	2	10.00%
	Sometimes	1	5.00%	4	20.00%	5	25.00%
	Fairly Often	3	15.00%	2	10.00%	5	25.00%
	Usually	3	15.00%			3	15.00%
	Very Frequently	2	10.00%			2	10.00%
	Almost Always	1	5.00%			1	5.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Paints the “big picture” of what we aspire to accomplish	Sometimes	1	5.00%			1	5.00%
	Fairly Often	2	10.00%	2	10.00%	4	20.00%
	Usually	3	15.00%	6	30.00%	9	45.00%
	Very Frequently	2	10.00%	2	10.00%	4	20.00%
	Almost Always	2	10.00%			2	10.00%
	Total	10	50.00%	10	50.00%	20	100.00%

(continued)

Criteria		Right-Handed		Left-Handed		Total	
		N	%	N	%	N	%
Speaks with genuine conviction about the higher meaning and purpose of our work	Sometimes	1	5.00%			1	5.00%
	Fairly Often	1	5.00%	1	5.00%	2	10.00%
	Usually	1	5.00%	4	20.00%	5	25.00%
	Very Frequently	3	15.00%	3	15.00%	6	30.00%
	Almost Always	4	20.00%	2	10.00%	6	30.00%
	Total	10	50.00%	10	50.00%	20	100.00%

Table 5

Crosstabulation of Individual Responses to the Six Challenge the Process Statements on the LPI by Right-Handed and Left-Handed School Leaders

Criteria		Right-Handed		Left-Handed		Total	
		N	%	N	%	N	%
Seeks out challenging opportunities that test his/her own skills and Abilities	Occasionally	1	5.00%			1	5.00%
	Sometimes	2	10.00%	6	30.00%	8	40.00%
	Fairly Often	3	15.00%	1	5.00%	4	20.00%
	Usually	3	15.00%	1	5.00%	4	20.00%
	Very Frequently			2	10.00%	2	10.00%
	Almost Always	1	5.00%			1	5.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Challenges people to try out new and innovative ways to do their work	Once in a While			1	5.00%	1	5.00%
	Sometimes			4	20.00%	4	20.00%
	Fairly Often	4	20.00%	3	15.00%	7	35.00%
	Usually	2	10.00%	2	10.00%	4	20.00%
	Very Frequently	2	10.00%			2	10.00%
	Almost Always	2	10.00%			2	10.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Searches outside the formal boundaries of his/her organization for innovative ways to improve what we do	Once in a While	1	5.00%	2	10.00%	3	15.00%
	Occasionally	1	5.00%	2	10.00%	3	15.00%
	Sometimes	3	15.00%	2	10.00%	5	25.00%
	Fairly Often	2	10.00%	2	10.00%	4	20.00%
	Usually	1	5.00%	1	5.00%	2	10.00%
	Very Frequently	1	5.00%	1	5.00%	2	10.00%
	Almost Always	1	5.00%			1	5.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Asks "What can we learn?" when things don't go as expected	Seldom			1	5.00%	1	5.00%
	Sometimes	1	5.00%	2	10.00%	3	15.00%
	Fairly Often	5	25.00%	3	15.00%	8	40.00%
	Usually	1	5.00%	3	15.00%	4	20.00%
	Very Frequently	2	10.00%	1	5.00%	3	15.00%
	Almost Always	1	5.00%			1	5.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Makes certain that we set achievable goals, make concrete plans and establish measurable milestones for the projects and programs we work on	Occasionally			1	5.00%	1	5.00%
	Fairly Often	1	5.00%	2	10.00%	3	15.00%
	Usually	2	10.00%	4	20.00%	6	30.00%
	Very Frequently	4	20.00%	1	5.00%	5	25.00%
	Almost Always	3	15.00%	2	10.00%	5	25.00%
	Total	10	50.00%	10	50.00%	20	100.00%

(continued)

Criteria		Right-Handed		Left-Handed		Total	
		N	%	N	%	N	%
Experiments and takes risks, even when there is a chance of failure	Seldom	1	5.00%			1	5.00%
	Occasionally			1	5.00%	1	5.00%
	Sometimes	2	10.00%	3	15.00%	5	25.00%
	Fairly Often	2	10.00%	1	5.00%	3	15.00%
	Usually	2	10.00%	2	10.00%	4	20.00%
	Very Frequently	1	5.00%	3	15.00%	4	20.00%
	Almost Always	2	10.00%			2	10.00%
	Total	10	50.00%	10	50.00%	20	100.00%

Table 6

Crosstabulation of Individual Responses to the Six Enable Others to Act Statements on the LPI by Right-Handed and Left-Handed School Leaders

Criteria		Right-Handed		Left-Handed		Total	
		N	%	N	%	N	%
Develops cooperative relationships among the people he/she works with	Usually	3	15.00%	3	15.00%	6	30.00%
	Very Frequently	3	15.00%	4	20.00%	7	35.00%
	Almost Always	4	20.00%	3	15.00%	7	35.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Actively listens to diverse points of view	Sometimes	2	10.00%	1	5.00%	3	15.00%
	Fairly Often	2	10.00%	2	10.00%	4	20.00%
	Usually	3	15.00%	4	20.00%	7	35.00%
	Very Frequently	1	5.00%	2	10.00%	3	15.00%
	Almost Always	2	10.00%	1	5.00%	3	15.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Treats others with dignity and respect	Usually	1	5.00%	2	10.00%	3	15.00%
	Very Frequently	2	10.00%	2	10.00%	4	20.00%
	Almost Always	7	35.00%	6	30.00%	13	65.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Supports the decisions that people make on their own	Occasionally	1	5.00%			1	5.00%
	Sometimes	3	15.00%			3	15.00%
	Fairly Often	1	5.00%	4	20.00%	5	25.00%
	Usually	3	15.00%	6	30.00%	9	45.00%
	Very Frequently	1	5.00%			1	5.00%
	Almost Always	1	5.00%			1	5.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Gives people a great deal of freedom and choice in deciding how to do their work	Seldom	1	5.00%	1	5.00%	2	10.00%
	Sometimes	1	5.00%	1	5.00%	2	10.00%
	Fairly Often	1	5.00%	3	15.00%	4	20.00%
	Usually	4	20.00%	4	20.00%	8	40.00%
	Very Frequently	2	10.00%	1	5.00%	3	15.00%
	Almost Always	1	5.00%			1	5.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Ensures that people grow in their jobs by learning new skills and developing themselves	Sometimes			1	5.00%	1	5.00%
	Fairly Often	4	20.00%	3	15.00%	7	35.00%
	Usually			5	25.00%	5	25.00%
	Very Frequently	4	20.00%	1	5.00%	5	25.00%
	Almost Always	2	10.00%			2	10.00%
	Total	10	50.00%	10	50.00%	20	100.00%

Table 7

Crosstabulation of Individual Responses to the Six Encourage the Heart Statements on the LPI by Right-Handed and Left-Handed School Leaders

Criteria		Right-Handed		Left-Handed		Total	
		N	%	N	%	N	%
Praises people for a job well done	Occasionally			1	5.00%	1	5.00%
	Sometimes			2	10.00%	2	10.00%
	Fairly Often	2	10.00%			2	10.00%
	Usually	1	5.00%	2	10.00%	3	15.00%
	Very Frequently	2	10.00%	3	15.00%	5	25.00%
	Almost Always	5	25.00%	2	10.00%	7	35.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Makes it a point to let people know about his/her confidence in their abilities	Once in a While			2	10.00%	2	10.00%
	Occasionally	1	5.00%	2	10.00%	3	15.00%
	Sometimes	3	15.00%			3	15.00%
	Fairly Often	2	10.00%	2	10.00%	4	20.00%
	Usually			3	15.00%	3	15.00%
	Very Frequently	3	15.00%	1	5.00%	4	20.00%
	Almost Always	1	5.00%			1	5.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Makes sure people are creatively rewarded for their contributions to the success of projects	Once in a While			2	10.00%	2	10.00%
	Occasionally	1	5.00%	2	10.00%	3	15.00%
	Sometimes	3	15.00%			3	15.00%
	Fairly Often	2	10.00%	2	10.00%	4	20.00%
	Usually			3	15.00%	3	15.00%
	Very Frequently	3	15.00%	1	5.00%	4	20.00%
	Almost Always	1	5.00%			1	5.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Publically recognizes people who exemplify commitment to shared values	Once in a While			1	5.00%	1	5.00%
	Occasionally			1	5.00%	1	5.00%
	Sometimes	2	10.00%			2	10.00%
	Fairly Often	1	5.00%	3	15.00%	4	20.00%
	Usually	2	10.00%	3	15.00%	5	25.00%
	Very Frequently	1	5.00%	2	10.00%	3	15.00%
	Almost Always	4	20.00%			4	20.00%
	Total	10	50.00%	10	50.00%	20	100.00%
Finds ways to celebrate accomplishments	Once in a While			1	5.00%	1	5.00%
	Occasionally			1	5.00%	1	5.00%
	Sometimes			1	5.00%	1	5.00%
	Fairly Often	4	20.00%	4	20.00%	8	40.00%
	Usually	1	5.00%			1	5.00%
	Very Frequently	1	5.00%	3	15.00%	4	20.00%
	Almost Always	4	20.00%			4	20.00%
	Total	10	50.00%	10	50.00%	20	100.00%

(continued)

Criteria		Right-Handed		Left-Handed		Total	
		N	%	N	%	N	%
Gives the members of the team lots of appreciation and support for their contributions	Occasionally			1	5.00%	1	5.00%
	Fairly Often	3	15.00%	3	15.00%	6	30.00%
	Usually			4	20.00%	4	20.00%
	Very Frequently	2	10.00%	2	10.00%	4	20.00%
	Almost Always	5	25.00%			5	25.00%
	Total	10	50.00%	10	50.00%	20	100.00%

The three dominant practices for left-handed leaders, based on the mean score of their individual responses to the LPI, listed highest to lowest are Enable Others to Act, Model the Way and Encourage the Heart. The practices demonstrated least, using the same reporting data, are Challenge the Process and Inspire a Shared Vision.

Likewise, when using the crosstabulation, the three most dominant leadership practices using the combined number of affirmative statements (responses corresponding to the top three rankings on the Likert scale [usually, very frequently, and almost always]) from each of the six statements which related to each individual practice were Enable Others to Act, Model the Way, and Encourage the Heart. They were followed by Challenge the Process and Inspire a Shared Vision which had the same total affirmative responses.

The three statements on the LPI which left-handed leaders rated themselves the highest (meaning their ratings on the highest two levels of the Likert scale were 70% or higher) were develops cooperative relationships among the people he/she works with, treats others with dignity and respect, and follows through on promises and commitments he/she makes.

Research Question 2

How did left-handed school leaders experience being left-handed in school?

This research question was answered using the responses to the open-ended questions

asked of the 10 left-handed school leaders. When analyzing data from the interviews, several themes emerged which included adapting to classroom furniture, encounters with school tools, varying experiences relating to handwriting, paper positioning and body positioning. Frequencies of responses were categorized as low, medium, and high. Themes mentioned one to two times were considered to have a low frequency. Themes mentioned three to five times were considered to have a moderate frequency. Themes mentioned six or more times were considered to have a high frequency. Table 8 illustrates both themes which emerged from the participants regarding their elementary and secondary experiences as a left-handed learner and the frequency in which the themes emerged.

Table 8

Left-Handed Learner Educational Experiences Themes and Frequency of Responses

Participants	LH1	LH2	LH3	LH4	LH5	LH6	LH7	LH8	LH9	LH10
Themes										
Handwriting			X	X		X	X		X	X
Scissors	X		X	X		X	X		X	X
Student Desks	X	X	X	X	X		X	X	X	X
Body Positioning	X	X		X	X				X	
Paper Positioning	X	X		X					X	
Forced Adaptation		X	X	X		X	X		X	

High frequency themes included adapting to classroom furniture, forced adaptation, using left-handed scissors, and issues with handwriting. Moderate frequency themes included body positioning (in student desks) and paper positioning (for handwriting). Further analysis on each of the high and moderate frequency themes follows, incorporating quotes and summarizations from individual interviews.

Classroom Furniture

The most common theme emerging from left-handed leaders as memories from their educational experiences was their frustration with classroom furniture, specifically

right-handed desks. LH4 commented,

My elementary school experiences as a left-hander was a hard one. I was the only person in my classroom left-handed and all of the desks were right armed desks.

In junior high and high school it was the same thing, but by then, I had just figured out how to make it work for me.

LH8 was the only leader interviewed who attended private school, and he admitted he had a relatively smooth primary and secondary school career. The only experience this leader recalled was “being frustrated in high school because some of the classrooms did not have left-handed desks.” LH7’s first response to recalling elementary experience was “right-handed desks.” Of all the experiences this learner had, classroom furniture was the first recollected memory. LH2 stated that in elementary school, lots of learning time was spent in a right-armed desk. Eventually, this learner was given a plain flat desk; however, in middle school, this leader reflected, “there were no regular desks provided for me. It seemed as if none existed in the school so I was back to using the right armed desks again.” LH1 remarked “I always felt separate and apart from my peers. I had to use desks which were not designed for me to use easily. I even looked funny sitting in them.” LH5 remembered never having a left-handed desk. “We only had right-handed desks in the whole school. I remember when I was in the fourth grade, I finally got a left-handed desk.” This leader continued to remember he was so happy the left-handed desk had arrived even though the desk space was way too big. This leader then commented, “I felt like I had been given a gift, but then I felt odd. It was like the desk had become a hassle and I did not want to be a hassle. It was a good thing, but only to me.” LH9 contributed, “In elementary school, it amazed me how I never had a correct desk. I still had to do what I was expected to do but I remember I did not have a desk like everyone

else did to make those things happen.” This leader added, in junior high and high school the only experience that stood out was “I sat in a right-handed desk as a left-handed learner learning in a right-handed world.” Ninety-percent of left-handed school leaders admitted that classroom desks offered to them posed challenges for them as learners.

Forced Adaptation

Sixty percent of left-handed leaders interviewed reported in various terms that they were forced to assimilate into a right-handed classroom environment. LH9 commented that as a learner, it was just expected that he “do what was expected” and “to learn to adjust.” LH3 offered that as a young elementary student, she was forced to adjust to the norm. She reflected, “Without realizing it, I think that was the beginning of learning to be flexible.” LH7 contributed that by the time she got to junior high, she no longer struggled because “she had learned to adapt.” LH6 said as an elementary student, she learned life was much easier when she learned “to adapt and to do what she was told.” For her, this included being forced by her first-grade teacher to transition from a perfectly capable left-handed writer to a right-handed writer. Despite the fact that she transitioned as a writer, there were numerous things she still did left-handed; however, by the time she arrived in junior high, she came to the understanding that “everything is made for right-handers.” LH4 concluded that by the time she arrived in junior high and high school, her experiences “were not as difficult because I had already learned how to live in a right-handed world.”

Scissors

Seventy percent of left-handed school leaders mentioned the use of right-handed scissors or the absence/unavailability of left-handed scissors as a memory from their elementary experiences. LH4 admitted, “All of the scissors were right-handed scissors. I

eventually just learned to use my right hand to cut.” LH9 referred to the absence of left-handed scissors as a “disadvantage,” whereas LH10 stated that learning to cut with right-handed scissors, as they were the only ones available, was “a most difficult task.” LH7 said, “My teacher never understood why I could not cut. I eventually did learn how to use right-handed scissors.”

LH3 said she never wanted to be singled out as different, so she had her mom find her left-handed scissors and just brought those to school to use. LH6’s first-grade teacher made her learn to cut with her right hand. “She repeatedly took the scissors out of my left hand and put them in my right hand. She would say to me, ‘this is the way you have to do it.’ Eventually, I just did.”

LH1 shared that the scissors issue was the greatest issue she faced. She offered, My teacher bought me left-handed scissors. The problem was by this time in my life I had learned how to use my right hand to cut so this created another problem. I appeared to be ungrateful because she had spent her own money for these scissors and I could not, or in her eyes, would not use them.

LH10 further added, “It got to the point where my parents even had to have a parent conference over scissors.”

Handwriting

The physical act of handwriting and the challenges it posed or did not pose varied for each leader. Of the four leaders who had no difficulties, one never mentioned it all during the interview; and one described, as mentioned earlier, how she was forced by her teacher to convert to being a right-hander though she had already learned the skill by the time she was in this teacher’s class. The remaining two were both the youngest of several children in their families and knew how to write their letters and numbers by the

time they arrived in kindergarten. For the remaining left-handed leaders, writing was quite difficult.

LH2 admitted, “learning to write was a challenge. It was the hardest part for me. I had right-handed teachers.” She went on to explain, “For a long time, I wrote only in all capital letters. I also wrote my name backwards, as in last letter to first letter. My letters were also reversed as well.” Although LH1 knew how to write when she arrived in elementary school, for her, “my issue was learning to hold the pencil so I could get my letters down.” LH4 stated that when she was in school, her teachers were avid users of overhead projectors and as students they would use them as well. “I would notoriously come home from school every day with red, blue or green ink on the side of my hand and arm.” She explained this was due to the fact that as a left-handed writer, her hand and arm followed her writing as opposed to right-handers whose arm and hand proceeded the fingers holding the writing utensil. LH4 also mentioned that as a student, she had been unsuccessfully convinced by her first-grade teacher to convert to writing with her right hand. She said her teacher promised her it would “make things so much easier.” LH9 admitted that to this day, “my writing is not neat.” During the interview, he continually referenced being conscious about his handwriting. He said that in elementary school, despite the fact that he and his mom practiced writing at home, it was not uncommon for him to have strong and high marks on his report card until it came to handwriting. Then it would say “handwriting needs more work.”

Two school leaders addressed cursive handwriting as a specific challenge. LH7 confessed,

I could never slant my letters and I could never get them the way the teacher wanted them to be. My papers would be returned with red marks all over them.

My letters were either standing up straight or slanting the opposite way. They were never right.

LH10 expressed, “I feel like one of the reasons I struggled with cursive handwriting was because my teacher had little experience working with left-handed children.”

Furthermore, she added, “Everyone in my class learned how to write cursive before I did. I felt like there was something wrong with me because I had to learn to write cursive a different way.” She concluded by saying, “My second grade teacher really wanted me to be a right-handed student. She continually was putting the pencil in my right hand as we were learning to write in cursive.”

Body Positioning

When it came to sitting in desks designed for right-handers, nine of the 10 school leaders interviewed admitted to having difficulty. Of those nine, five spoke of how they had to reposition their body to make sitting in a right-handed desk work for them. LH10 stated, “In order to take notes efficiently in class, I had to place my textbooks and other materials in my lap in order to have more room on the desk.” Both LH4 and LH1 described how they would sit in the right-armed desk to make it work for them. They would place their right leg in the opening of the desk underneath the right arm rest and leave their left leg under the table of the desk. They would then face the right armrest on the desk and support their left arm and notebooks on the desk. LH2 stated she would turn her torso “in order to make room for my arm, my hand and my materials for class.” LH5 and LH9 both said they just moved their bodies into uncomfortable positions to make it work.

Paper Positioning

Several leaders also mentioned the specific task of awkwardly turning their papers

in order to have legible handwriting. LH4 stated she could not leave her paper in her binders to take notes in junior high and high school because the way she held the paper made it impossible to write as the rings of the binder would get in her way. LH9 said, “I noticed my paper did not sit on my desk like everyone else in class. Mine was always tuned to the side instead of being straight up and down.” LH1 commented that making the letters was not difficult for her to learn, “but my issue was how to hold the paper so I could get my letters down.” LH2 claimed, “to this day I turn my paper to the right whenever I write anything.”

Unique Experiences

Several leaders shared unique experiences which they encountered in school which, while poignant in their educational career, were not directly linked to one of the most common themes.

LH2 stated that as an elementary student, she found herself being strategic in her approach to her spelling homework. She vividly remembered the assignment was to write each spelling word three times and to write a sentence using each spelling word. Therefore, she would write a sentence and underline the spelling word in it. Underneath that sentence she would write the spelling word two more times. She explained her reasoning by saying,

We were never told we had to have the spelling word written four different times.

We just had to have it written three times and have a sentence. I thought it was a great idea, especially when I convinced my teacher of my logic.

LH1, LH2, LH5, and LH6 all mentioned athletics in their interviews. LH1 revealed she was heavily recruited to play basketball and softball because she could dribble with her left hand and hit left-handed; however, by her own admission, it was

much more of a dream of the coaches to have her as a player than she had to participate in sports, so she never participated. LH2 stated she learned to play softball right-handed simply because “they did not know how to teach me any other way.” LH5 said he was the youngest child and finances and a lack of resources made him a well-balanced athlete. He stated that for several years, he had to play baseball with a right-hander’s glove because his older brother was right-handed and he had to use his old glove. He said when playing baseball, “I had to take the glove off my left hand after I caught the ball so I could then throw it with my left hand.” He also said, “when I was growing up, no one was making left-hander gloves.” He also stated he felt like he was a strong swimmer and liked that sport because it did not make him feel different from his peers.

LH6 admitted she was an athlete who found success and frustration as a left-hander. She drove her basketball coach crazy because she could “shoot left-handed and right-handed.” She added, “There was no rhyme or reason to it, somedays I would shoot free throws right-handed and other days I would shoot them left-handed.” Her coach made her pick one. She chose to shoot with her right hand; however, she stated, “my coach knew she could put me in anywhere on the court and I could play because I could shoot and dribble with both hands.” LH6’s father was also left-handed, so when he worked with her on the fundamentals of softball, she learned the game from a left-handed perspective. “I was a left-handed batter but I would throw with my right hand.” She, like LH5, learned to throw right-handed because left-hander gloves were scare and highly expensive. She also stated that she was not able to play golf in school because she was a left-handed golfer and no one had left-handed clubs.

LH3 explained when she was in kindergarten, she was one of two students in the class who could read; however, when her class was required to take a specific

assessment, she had to use a large crayon to complete the activity as well as sit in a confined location to take the test. Both of these were limiting to her as a left-handed student and, as a result, she performed poorly. In fact, she stated, “I was one of the two kids in the class who could read but because of this assessment score I was placed in remediation.” She continued,

By the time I was in fifth grade, I had learned how to adapt to school as a left-hander. I was tested for the academically-intellectually gifted (AIG) program and was only one of five fifth graders who qualified for AIG. I remember I was the only girl in the class but of the five of us three of us were left-handed.

Despite these unique encounters shared by left-handed leaders which occurred during their elementary and secondary experiences, there were some significant experiences which emerged as common themes shared among these leaders as well.

Research Question 3

What is the relationship between primary and secondary school experiences of left-handed school leaders and their leadership practices? This research question was answered using the responses to the open-ended questions asked of the 10 left-handed school leaders. When analyzing interviews, several themes emerged which included problem solving, creativity, risk-taking, seeing the big picture, empathy towards students with specific learning needs, and attention to detail. Frequencies of responses were categorized as low, medium, and high. Themes mentioned one to two times were considered to have a low frequency. Themes mentioned three to five times were considered to have a moderate frequency. Themes mentioned six or more times were considered to have a high frequency. Table 9 illustrates themes which emerged from the participants regarding their leadership practices which they attribute to being left-handed

and the frequency in which the themes emerged in their interviews.

Table 9

Left-Handed Leadership Practices Themes and Frequency of Responses

Themes	Participants	LH1	LH2	LH3	LH4	LH5	LH6	LH7	LH8	LH9	LH10
Problem Solving		X	X	X	X	X	X	X	X	X	X
Creativity		X				X				X	X
Risk-Taking		X	X	X	X	X	X				
Seeing the Big Picture		X	X					X			
Empathy to Students with Learning Needs				X	X	X		X		X	X
Importance of Details					X		X	X			

High frequency themes included the ability to problem solve, a specific stance on risk-taking, and empathy to students with specific learning needs. Moderate frequency themes included being a creative leader, the ability to see the big picture, and importance of details. Further analysis on each of the high and moderate frequency themes follows, incorporating quotes and summarizations from individual interviews.

Problem Solving

One hundred percent of the left-handed school leaders identified themselves as problem solvers and believe that it is leadership practice which can be attributed to their being left-handed. While their experiences and examples varied from the general to the specific, it was the one leadership practice that each school leader identified themselves as having.

LH10 stated that she often “looked outside of the box” to find solutions to individual student concerns as well as in addressing whole school needs. LH3

commented that being left-handed helped her to realize

there is no “one size fits all” approach to leadership. There are identified best practices to guide us, but as a leader the solution to the problem is sometimes found elsewhere which can only be identified after listening to others, being open to change and thinking of all possible solutions.

LH9 explained that when sitting in a room with other leaders who saw issues as black and white, he was always able to see the “grey area.” He continued by saying, “I am always willing to explore more options. I am always looking for a different way to do things. There is never just one way to do things.” By contrast, LH8 explained a different approach he had to problem solving. He admitted that he was a problem solver who “looked at everything as systems.” He stated, “Often, problems can be addressed by addressing the system.”

LH7 disclosed that when making decisions, “I am able to see all of the different scenarios that could play out as well as see the impact that each decision would have on the various groups of people involved.” LH4 stated that she too had the ability to “see things from many different perspectives” and was very intentional about analyzing situations from all people groups before making a final decision.

In terms of school budgets, LH2 stated this was an area where she used her problem-solving skills. She said she had the ability “to always find a solution.” She explained when other colleagues would say they did not have the money to make purchases, she was always able to find a way. She said, “I can look at the budget sheet and see how to pull money, legally, from all the various pots of money I have to meet the needs I have in my school.”

LH6 very quickly offered,

I like to problem solve. I like to look at problems from all angles, understand each angle and be able to explain the ‘why’ behind my decisions. Of course, the downside is I like and almost need to understand how others come to the decisions they make as well and that oftentimes does not happen.

She discussed this leadership practice in detail and how she used it in her current position. She described a parent meeting which was set to take place between her, a student, his parents, and his teachers. She said that due to previous experiences with the student and the parents, the teachers were very apprehensive about the meeting. She stated that prior to the meeting, she was able to accurately visualize the meeting from the perspective of every person at the table. LH6 said she knew the student was intelligent but manipulative. She knew the teachers had a tendency to talk as a united team, each speaking on behalf of the other, instead of as individuals. She knew the parents preferred succinct information and were not always receptive to the reality about their son. Therefore, prior to the meeting, she coached her teachers on how to approach this parent meeting by presenting the facts as they applied to the student in their classroom. She told them, “just talk about your class. Do not speak for one another. We need to allow the parents to hear from each individual teacher and allow them to discover the pattern of behavior at hand as the meeting unfolds.” She concluded by saying,

as a result, the parents saw the situation exactly how I believed they would since we presented the information in a manner that aligned with their needs. Because I saw this meeting as a problem to be solved, I was able to determine a workable solution for all involved.

LH5 stated that he used his problem-solving skills when he became principal of the school where he currently serves. He explained that when he arrived, “there was very

little structure.” Before the school year began, he called the teachers together and talked to them about the locations in the school that posed the greatest student behavior concerns. He worked with the teachers to determine the procedures for students to follow in these areas. He disclosed that the problem-solving skills he possessed allowed him to take this plan a step further. He asked the teachers, “What behaviors are you going to change about yourselves to help with the implementation of these new procedures and expectations?” LH5 stated he knew that while it was common for teachers to expect students to change their behavior because new procedures were in place, if real change was to occur, the teachers and adults in the building had to change their behavior. He explained, “What I was able to do differently than others before me was to see long term about the need for adult consistency to make daily consistency happen for our students.”

When opening a new school, LH2 went head to head with central office leaders when it came to determining the flow of morning and afternoon traffic. LH2 stated,

They (central office leaders) wanted me to run traffic differently than the plan I had devised. They only looked at the plan from the perspective of having five less cars on the road. I was able to devise a plan that encompassed the flow of traffic, the shape of our parking lot and most of all student safety.

She continued by saying, “I knew there was no need to run two lines of traffic and run a risk of compromising safety, when I knew my plan would work.” She stated, “I see myself as a problem solver.” She asked for 2 weeks to train parents, students, and teachers on her traffic plan. She and the Central Office team came to an agreement that she had 2 weeks to get the traffic line cleared in 25 minutes. She was pleased to report, “We are still doing the traffic plan my way and most days the traffic line is cleared in 20-22 minutes.” She concluded by saying, “I knew it would work, I just needed a chance to

prove it.”

LH1, LH2, and LH4 all reported they enjoyed scheduling. LH4 stated that when she works with scheduling, she can effortlessly make two or three spreadsheets which show all of the possible scheduling scenarios. From there, she studies the schedules through the lens of all impacted and makes her decision. She used this problem-solving skill to her advantage when making all the schedules required for testing when she was a high school assistant principal. LH2 stated that making schedules is something she can easily do. She admitted that oftentimes it stresses her teachers out when a flex schedule is required for a school day and she does not give it to them early. “I forget,” she said, “that while schedule modification is nothing to me, it is a big deal and requires significant planning for others.” She reported that it is not uncommon for teachers to come to her when they have scheduling issues. “I can just see how to maneuver things and make the schedule work for everyone.” LH1 disclosed,

Early on in my career as a high school assistant principal, the principal realized I had a knack for scheduling. So, for the next five years, I was responsible for creating the master schedule for over 70 teachers and 1200 students.

She went on to reveal, “I was able to see how to make singleton courses fit around the popular elective courses so that the maximum number of students could have a positive academic and social experience in high school.”

Problem solving was articulated differently by each left-handed school leader, but the ability to see problems from multiple perspectives and make decisions as a result is a leadership practice present in each one.

Risk-Taking

Sixty percent of left-handed school leaders made references to being a risk-taker;

however, not all of them admitted to being a risk-taker. Some were very clear about the fact that they were not, and some were very clear that risk-taking was an attribute that described them as a leader.

LH3 confessed she was not a risk-taker. She identified risk-taking as having attention brought on her, and she has a tendency to deflect any type of attention. She knows that risk-taking is an area of effective leadership but admits it is an area in which she struggles. Similarly, LH4 said she works very hard not to make mistakes. When she devises a plan of action, she works to make sure the plans are “accurate and flawless.” She reported she is “careful and follows the plan.” Since she is a self-admitted people pleaser, she does not like to make any errors in her actions or decisions. She is a “calculated risk-taker.”

LH1 referenced her years of making the master schedule for a high school when she discussed risk-taking. She knew that when she made the schedule the first time, she was taking a risk by “breaking the mold as to how things had always been done.” She believed that creating an optimal schedule was worth the risk of upsetting teachers who were accustomed to having a certain planning time.

LH2, LH5, and LH6 are all self-admitted risk-takers. Each is fine to stand alone and make decisions which do not always align with the thoughts and opinions of others; however, each one of them also admitted they are not impulsive risk-takers. LH2 explained,

I am willing to take a risk and go out and try new things. The older I get and the longer I am in this role, the quicker I am to take a risk. However, before I take the risk, I make sure that there is a safety net or the decision is safe for everyone impacted by my decision.

LH6 remarked,

I am willing to stand alone but only because I know I have thought through my decision. Sometimes I am slow to make a decision because I want to make sure I know all the information and have examined every angle before I make a decision.

LH5 reported, “I am never scared to ask the questions others are afraid to ask nor do I shy from taking risks.” Similar to LH6, LH5 confessed, “I am slow to start when taking risks, because I need to play the entire scenario out before I take the first step.”

Empathy to Students with Specific Learning Needs

Sixty percent of left-handed leaders stated that their empathy and actions toward students with specific learning needs are a result of their experiences as left-handed learners. LH5 and LH7 mentioned in their interviews that they spent their teaching career as special education teachers. Their current positions also have them in roles directly serving students who have diverse learning needs.

LH5 stated,

As an administrator, I see students who have specific needs and I want to make sure they have what they need to be successful. I do not want to make an issue about getting them what they need. I just want to get them what they need and move on.

He also said it is important that he “works with others in his school to create spaces where all students feel as if they belong. All students need to be treated with dignity and respect.” LH7 commented, “it is important to me that all students have relationships with someone who can advocate on their behalf. I found I was that person for my EC students.”

LH3 was clear that because of her experiences as a learner, she knows she is “an empathetic leader and someone who tries to be a compassionate leader.” She is also one who “seeks to help those who need help as well as someone who seeks to help others be who they need to be for our students.” LH9 was adamant, “I do not hold differences against folks.” He also contributed, “I seek out struggling students and make an effort to encourage them. It is so much better to encourage and help those who are struggling versus being demeaning.”

LH4 and LH10 were more specific when describing their efforts and empathy toward students with specific learning needs. LH4 explained,

I pay very close attention to how classrooms are set up and how movement would occur for all students. I also find myself more attuned to students with special needs. I want to make sure they are able to have a school experience as close to their non-disabled peers as possible.

LH10 stated, “I use my leadership role to assist teachers in finding methods to help students be successful regardless of their limitations.” She provided the example of working with a first-year teacher in her school. LH10 stated, “This teacher was struggling with a few students who were unable to sit still and focus. I researched alternative ways to assist these students and help them be successful.” This leader made the decision to invest in “fidgeting devices and stability balls to help these students who struggled with ADHD.” She concluded, “I feel that because of my experiences as a student who needed additional methods to be successful, I am determined to provide the same for my students.”

Creativity

Four leaders used the word “creative” to describe their leadership style. LH1,

LH5, LH9, and LH10 are creative leaders who believe their creativity is linked to being left-handed. Two of these leaders said that “research” also confirmed their belief about left-handedness and creativity.

LH10 admitted that being creative served her well in her position as an elementary principal. She said she used her imagination to help classroom teachers create learning environments which made students feel welcome and comfortable as learners. LH9 stated that in his position, he had to be creative to get the job done. His position requires him to think creatively in terms of building relationships, marketing programs, training parents, and making connections with families.

LH1 and LH5 admitted they knew left-handers were creative. They also knew that this was true for them as individuals. LH5 was clear when he said, “I am a creative leader. I have a good imagination and good ideas. I also have the ability to create learning environments where kids and adults want to be.” LH1, who revealed she was a former art teacher, stated,

I 100 percent believe that left-handers are more creative than right-handers. I am able to see different perspectives that some people never see. I know part of my success comes from the fact that I am creative in my leadership.

Seeing the Big Picture

LH1, LH2, and LH7 described themselves as “big picture” leaders. LH1 explained she was always able to “see the big picture and had a global perspective.” She likes information presented to her with the “outcome clearly defined.” She admits she often asks questions when presented with information about a project or a plan that does not have a “big picture approach or lacks thinking through.” LH2 said, “I oftentimes find myself explaining the big picture to others.” She provided one example of how at a

principals meeting she had to explain a process to her colleagues because they could not see how all the presented parts fit together into a bigger picture. “To me, she stated, it was obvious. To them, it was a struggle.” She aligned this same principle to being able to understand data. “I look at it and I get it. I have to remind myself that others need help in connecting the dots.” LH7 said,

I am not sure how I arrived at it, but I have always been able to see the big picture. It is the only way I know how to look at things. I see the details but I also understand how they connect together when others are not able to do so.

Importance of Details

Three leaders referenced the importance of details. These leaders are ones who did not mention it in direct reference to making the connection to a big picture.

LH7 mentioned that she did pay attention to details when she was making decisions. In her position, she often has to defend decisions she makes; and she stated, “paying attention to the small details that go in to making my decisions make it easy for me to articulate clearly the reasons I make the decisions I make.” LH6 referred to herself as “a details and facts person.” She stated that her leadership is not driven by emotions. “I can use facts over emotions. The facts are the small details which are critical for me to know when I make decisions.” She continued by saying that when she is asked to carry out a district initiative, she likes to hear all the details that went in to making the decision. She wants to know what was considered and what was ruled out. She stated, “those details have nothing to do with me seeing the big picture, that is easy. I just want to make sure the details have been thought out.” LH4 believed “being a left-hander has affected me the most by my attention to detail.” She stated she is very organized; she is a list maker and her desk is always orderly. She has color-coded notebooks and files. She

admits, “My Google Drive is even color coded.”

Relationships between Educational Experiences and Leadership Practices

Ninety percent of left-handed school leaders reported that during their time as elementary students, they were assigned to sit and work at a student desk not designed for them. Whether they threaded their legs through the opening on the right-hand side, placed their materials for class on their laps, twisted their bodies to make it manageable, or turned their paper so they could utilize the desk, each of them found their own ways to make it work. Seventy percent of these school leaders were provided school scissors which were not designed for them to use. While most conformed to being right-handed cutters, they were still forced to do a skill in an unnatural manner. Sixty percent of left-handed school leaders admitted that the physical act of handwriting was a struggle. Despite the efforts of teachers to convert several of these leaders, with teachers being successful on converting, all of these left-handed leaders figured out how to write in print and cursive.

One hundred percent of these same leaders stated that the ability to problem solve was one of their leadership practices. By their own admission, all of these school leaders were required at a young age to solve their own problems as an emergent learner.

Without being prompted, LH3 admitted freely that she was not a risk-taker. LH3 is also the leader who most clearly described a punitive, and in her eyes unnecessary, consequence as a kindergartener because she was left-handed. While she could not commit that this perceived relationship was a direct example of cause and effect, she did not discredit the connection between the experience and the absence of this practice.

Of the four leaders who called themselves creative, three of those leaders did not identify themselves as individuals who felt forced to assimilate to a right-handed world.

Four of the six leaders who felt they were forced to adapt to a right-handed world conveyed that one of their leadership practices was empathy for students with specific learning needs. In their discussion of school experiences, all school leaders who had this practice reflected on times they were made to feel bad or different because they were left-handed; the fact they were never provided with a desk which allowed them to have an equal classroom experience; receiving papers marked in red because their slanting was backward or report cards with comments that said their writing needed improving; and the need for additional time to learn cursive and the feeling of inadequacy that accompanied their learning struggle.

While no participant stated, “I definitely lead this way or have this leadership practice because of this specific experience,” there are significant correlations which emerge between educational experiences and leadership practices of left-handed leaders.

Chapter 5: Conclusion

Introduction

The purpose of this study was to examine the experiences of left-handed school leaders during their elementary and secondary school years. Further, this study examined the impact of these experiences on leadership practices exhibited by left-handed school leaders. This study was guided by the following research questions.

1. When self-assessed, which leadership practices are most dominant in left-handed school leaders?
2. How did left-handed school leaders experience being left-handed in school?
3. What is the relationship between primary and secondary school experiences of left-handed school leaders and their leadership practices?

In this mixed-methods study, 10 left-handed and 10 right-handed school leaders completed Kouzes and Posner's LPI. The LPI was an assessment where participants rated themselves using a 10-point Likert scale on 30 statements aligned in groups of six to five leadership practices. The five leadership practices were Model the Way, Inspire a Shared Vision, Challenge the Process, Enable Others to Act, and Encourage the Heart. The quantitative data from this survey allowed the researcher to explore the dominant leadership practices and characteristics of left-handed school leaders. It also allowed for the comparison of self-assessed leadership practices between left-handed school leaders and right-handed school leaders. To collect data for the qualitative portion of the study, the left-handed school leaders participated in an open-ended interview where participants were asked a predetermined set of questions relating to their primary and secondary school experiences and their current leadership practices.

This chapter provides answers to each research question. Additional information

is shared based on data discovered when seeking to answer the research questions. Also included are recommendations for school districts as well as hiring managers and evaluators. The chapter closes with limitations of the study, suggestions for further research, and a summary and conclusion.

Research Question 1

Research Question 1 was, “When self-assessed, which leadership practices are most dominant in left-handed school leaders?” Quantitative research was conducted to answer Research Question 1. Data were collected based on the self-assessed responses to Kouzes and Posner’s LPI by 10 left-handed school leaders and 10 right-handed school leaders. A summary *t* test was conducted to be able to compare the mean of the self-assessed responses for each of the five leadership practices between left-handed and right-handed school leaders. In addition, a crosstabulation of all left-handed and right-handed school leader responses was completed to compare the individual ratings on the Likert scale for all 30 statements on the LPI.

One measure to evaluate the dominance of leadership practices displayed by left-handed school leaders was based on the mean of their individual responses to the LPI survey. The leadership practices of left-handed school leaders, reported from most dominant to least dominant, are as follows: Enable Others to Act, Model the Way, Encourage the Heart, Challenge the Process, and Inspire a Shared Vision. The mean for Enable Others to Act was 48.90. The mean for Model the Way was 46.40. The mean for Encourage the Heart was 44.00. The mean for Challenge the Process was 41.70. The mean for Inspire a Shared Vision was 39.30.

The mean difference between the most dominant practice of Enable Others to Act and least dominant practice of Inspire a Shared Vision was 9.60. The mean difference

between the first and third most dominant practices, which were Enable Others to Act and Encourage the Heart, was 4.50. The mean difference between Challenge the Process and Inspire a Shared Vision, the least two dominant practices, was 2.40. Additionally, the summary *t* test revealed there was no significant difference between the mean of left-handed school leaders and right-handed school leaders on any of the five leadership practices.

When using the crosstabulation, the combined number of affirmative statements from each of the six statements related to the five practices were used to determine the dominance of the five leadership practices. Affirmative responses were considered to be all responses corresponding with the top three rankings on the Likert scale. Those three rankings were usually, very frequently and almost always. The highest possible number of affirmative responses per leadership practice was 60. The dominance of leadership practices, as determined by the self-ratings of left-handed school leaders, in order of highest to lowest dominance are Enable Others to Act, Model the Way, Encourage the Heart, Challenge the Process, and Inspire a Shared Vision. The number of affirmative responses each practice received based on the results of the left-handed school leaders are Enable Others to Act, 44; Model the Way, 37; Encourage the Heart, 29; Challenge the Process, 23; and Inspire a Shared Vision, 22.

The three dominant left-handed school leader leadership practices, based on both the summary *t* test and the number of affirmative responses determined by the crosstabulation, are Enable Others to Act, Model the Way, and Encourage the Heart. Each of these practices aligns with research-based characteristics attributed to left-handed leaders.

According to Kouzes and Posner (2012), leaders who Enable Others to Act make

others feel like owners (of a company or a school) and not like hired help. Friedman (2007) stated that effective leaders have a basic understanding of the forces that drive the world they lead. Left-handed school leaders understand that in order to enable those they lead to act, they must know their team members. They must know how to speak to them in a manner that provides motivation, loyalty, and action. Most importantly, left-handed school leaders recognize and demonstrate the importance of how to respectfully treat those who look to them as a leader.

President Ronald Reagan was left-handed. Through his speaking, he was able to create an intimacy with the American people and yet remain distant from them as their leader. By the power of his words, he was able to rally the American people and at times the citizens of the world, thus enabling them to act (Nunberg, 2004; Wright 2007). One left-handed school leader discussed the times she has been intentional about how she communicated a specific message to her teachers. She knew the “power of her words” and the “tone of her voice” was critical to getting the results she needed from her teachers. The words and tone used in her message were the launch of enabling her staff to act.

Enabling Others to Act is the process military leaders use to experience success and presidential candidates invoke to win elections. Leaders who display this practice know they cannot do it alone. They are dependent on all members of their organization, or eligible voters, to make great things happen. Enabling others to act is what puts the feet to a military leader’s thinking and gets presidential candidates the needed votes to win the Electoral College (Roth, 2009).

When analyzing the results of the crosstabulation, two of the three statements where 70% or more of left-handed school leaders rated themselves on the LPI at the

highest two rankings were aligned to the leadership practice Enable Others to Act. The first of the two statements was, “I develop cooperative relationships among the people I work with.” The second statement was, “I treat others with dignity and respect.” Several left-handed school leaders spoke of how they treated individuals in their schools. One commented he sought to find ways to encourage those who needed it. Another school leader stated that he created an environment that fostered dignity and respect. Another school leader added that she found relationship building to be one of the most important things she did with her staff. Whitaker (2003) explained, you take a risk that no one feels special if all employees are treated with respect and dignity. “However, if everyone in the school is not treated with respect and dignity, you will never have anything special” (Whitaker, 2003, p. 26).

Model the Way was identified by left-handed school leaders as their second most dominant leadership practice. Patterson and Kelleher (2005) explained the strength of a leader’s belief determines the strength of their commitments. Furthermore, their beliefs determine how they respond in times of adversity and the length of perseverance despite the obstacles faced.

The third and final statement on the LPI that 70% of left-handed school leaders ranked themselves on the highest two levels of the Likert scale was aligned to this leadership practice of Model the Way. The statement receiving this high ranking was, “I follow through on the promises and commitments I make.”

The study conducted by Malekzadeh (2015) supported this self-rating by left-handed school leaders. This study explored left-handers and right-handers and their approach to coping with stress. The two approaches studied by gender and by handedness were emotion-focused and appraisal/problem-focused. The results of the

study revealed it was statistically significant that left-handers used the problem-focused method when addressing stress at a much higher rate than right-handers. Also, right-handers used emotion-focused methods to approach stressful situations at a rate higher than left-handers which was also statistically significant. Left-handers chose to address the problem head on and see the problem through. In contrast, right-handers addressed the feelings about the problem instead of the problem itself. This implies that even in stressful situations, left-handers are more likely to work through stress and difficulties to follow through on promises and commitments made. This study reflected the actions of one left-handed school leader who spoke of her reaction to her school being deemed low performing based on a measurement system determined by the state legislature. She admitted she had two choices of how to address this as a school leader. She said she could cry about it and complain that the measurement system was not fair or she could face the problem head on and use what she knew about the measurement system and make it work for her school. She continued by saying, “I was committed to my school being a great place of learning for students and teachers. I was not going to let a legislative labeling system change that fact.”

Leadership is when others give you temporary authority. They only follow you if you are constantly credible (Summitt, 2014). Left-handed school leaders understand what Kouzes and Posner (2012) meant when they said Modeling the Way is “about relationships, about credibility, and about what you do” (p. 329). Kouzes and Posner (2003b) prescribed that leaders who Model the Way “go first by setting the example through daily actions that demonstrate they are deeply committed to their beliefs” (p. 14).

Coren (1995), Roth (2009), and Wright (2007) explained that two of the world’s greatest social change movements, the Civil Rights Movement led by Martin Luther King

Jr. and the quest to end Apartheid in South Africa by Nelson Mandela, replicated the act of civil disobedience carried out by left-handed Mahatma Gandhi. Gandhi demonstrated civil disobedience when he led the people of India to freedom through the unwavering and intentional act of nonviolence. Gandhi modeled the way for his people and for social change leaders of the future.

Encourage the Heart was the third most dominant leadership trait attributed to left-handed school leaders based on both the mean and the number of affirmative responses on the LPI. The mean for Encourage the Heart was 44.0. The difference from the mean of Enable Others to Act, the most dominant leadership practice of left-handed school leaders, was 4.9. The difference from the mean of the least dominant left-handed school leader leadership practice, Inspire a Shared Vision, was 4.7. However, for this leadership practice, the data which align more closely to the preexisting research and the information provided by left-handed school leaders are the results from the crosstabulation examining affirmative responses. The number of affirmative responses for Encourage the Heart was 29. This number is much more closely aligned to the lowest ranked leadership practice, Inspire a Shared Vision, which had 22 affirmative responses. In contrast, the most dominant leadership practice, Enable Others to Act, received 44 affirmative responses.

Kouzes and Posner (2012) found that leaders who encourage the heart “are in love – in love with people who do the work, with what their organizations produce, and with their customers” (p. 272). They also advocated these leaders understand that “Leadership is not an affair of the head. Leadership is an affair of the heart” (Kouzes & Posner, 2012, p. 345).

On the LPI survey, there was only one statement aligned to Encourage the Heart

that any left-handed school leader rated themselves in the highest ranking on the Likert scale. Two school leaders gave themselves the highest rating, and three school leaders rated themselves on the next-to-highest rating in the statement, “Praises people for a job well done.” On no other statement aligning to this leadership practice did any left-handed school leader rank themselves at the highest level on the Likert scale.

The research regarding left-handed leaders is concerning as it addresses the heart of individuals. Wright (2007) admitted left-handed leaders can appear to be empathetic to others if it helps them move forward on their position or with their agenda. Likewise, Roth (2009) reported of an interview held in 2000 with Coren who stated left-handers can be pushy and cold as well as more dominant than nurturing. To add to this research, interviews with left-handed school leaders revealed that none of them claimed to have a leadership practice which was described as warm or nurturing.

Fisher (2006) and Roth (2009) both cited the work of Trotter (1974) which explained left-handers, despite the objections they receive from others be it tangible or intangible, are often willing to go at it alone when they sense a particular course of action is necessary. In looking to understand this research, several topics of discussion with left-handed school leaders became clearer. When looking at the early educational experiences of left-handed school leaders, 90% of them admitted to independently figuring out how to make a right-handed student desk work for them every single day, year after year. Several left-handed school leaders also discussed times they were frustrated or discouraged at learners. Several school leaders could recall the name of a teacher who was a source of frustration or discouragement. No left-handed school leader mentioned anyone who encouraged them as it specifically related to them as a left-handed learner.

Research Question 2

Research Question 2 was, “How did left-handed school leaders experience being left-handed in school?” This research question was answered using qualitative data derived from interviews and discussions with 10 left-handed school leaders. From the information shared by school leaders of their educational experiences as left-handed learners, several themes emerged. The themes which emerged included adapting to classroom furniture and body positioning, forced adaptation, using left-handed scissors, and issues with handwriting including paper positioning.

Multiple researchers concurred that left-handed learners face unique challenges in school. Those challenges primarily include handwriting and frustration with the design of school furniture and school supplies (Coren, 1995; Hawkyard, 2014; McManus, 2002; Milsom, 2014; Misigo, 2015; Silverstein & Silverstein, 1977). These same challenges were encountered by all 10 left-handed school leaders during their primary and secondary school experiences.

Ninety percent of left-handed school leaders stated that an inadequate school desk posed a challenge to them as a left-handed learner. Ghosh (2016) and Holder (2003) argued that left-handed students who are only provided right-handed desks do not receive the same structural support as right-handed students do. Left-handed school leaders reported that oftentimes, they had to hold classroom materials on their laps, repurpose the shape and structure of the desk, or twist their bodies to make the right-handed desk work for them. Two school leaders explained how they would thread their right leg through the opening underneath the right arm rest of the right-armed desk. Despite the uncomfortable body positioning, this did allow them to use the tabletop of the desk to support their left arm. An additional two school leaders admitted they were not really

sure how they sat in the right-armed desks, they just knew they stayed uncomfortable. Ghosh (2016) reported that this is not a conducive nor equitable learning environment for left-handed students.

One left-handed school leader admitted, “I sat in a right-handed desk as a left-handed learner while learning in a right-handed world.” This echoes the sentiments of Holder (2003) who claimed while many school institutions stated they had anti-discrimination policies, their unwillingness to provide academic equity for both handed students proved otherwise. A different left-handed school leader contributed, “regardless of what I did or did not have available to me, the expectation was still there for me to perform just like my right-handed peers did.” In an effort to level the playing field, ETS now gives directives in their testing manual stating how to address left-handed learners in testing environments. These directives include where to place left-handed desks in the testing rooms. If left-handed desks are unavailable, specific directions are given for where to place right-handed desks in the room in order to accommodate left-handed students (ETS, 2007).

Wright (2007) contended that left-handers live in a world which is not created for them. In this study, 60% of left-handed school leaders admitted they felt forced to assimilate into a right-handed classroom environment during their elementary and secondary school experiences. A left-handed school leader who was forced in first grade to become a right-handed writer, stated that despite the fact that she remained left-handed in everything but writing, she clearly understood that “everything was made for right-handers.”

A study in Kenya also validated this experience of left-handed school leaders. Malusi (2014) conducted a study among left-handed, female, science students. These

students shared their frustrations about being forced to take their national assessments in laboratory science courses as though they were right-handed. They were penalized for their handedness, because the national assessments for these exams dictated the setup of the lab stations which included the type and placement of materials. Also dictated was the time given to complete the assessment. These students admitted they lost testing time because they had to reset up the lab station so it would meet their needs for safety and performance. These left-handed science students felt their actual assessment grade did not accurately reflect their skills or knowledge because of the time they lost due to making accommodations for their handedness.

Seventy percent of left-handed school leaders recalled their frustration with using scissors during their elementary school years. Left-handed school leaders ran the gamut of experiences. Some school leaders asked their parents to buy them left-handed scissors since none were provided at their schools. One school leader had learned to cut with her right hand and faced a dilemma with her teacher who had purchased her a pair of left-handed scissors. The teacher felt as if this school leader was not appreciative of the left-handed scissors since she did not use them. This leader went on to explain that she had worked so hard to figure out how to use right-handed scissors, she did not understand how learning to use left-handed scissors would be any different. However, the majority of school leaders just figured out how to cut using right-handed scissors.

Milsom (2014) endorsed their recollections by admitting left-handed scissors are rarely found in school classrooms. Several researchers stated that forcing or even allowing a left-handed student to use scissors designed for a right-handed student creates soreness in the joints and thumbs as the frame of those scissors do not match the build of the left hand. Expecting left-handed students to use their right hand to cut was also

discouraged (Kelly, 1996; Milsom, 2014; Silverstein & Silverstein, 1977). As explained by one left-handed school leader, “My teacher never could understand why I could not cut.” She continued by saying that it took her a while, but she finally figured out how to use right-handed scissors.

A survey out of the United Kingdom conducted on a website devoted to the advocacy of left-handed children reported that 99% of school-aged children who participated in their survey experienced difficulty with handwriting (Milsom & Milsom, 2006). This contrasts slightly to the 60% of the left-handed school leaders who admitted having difficulty with handwriting. To this point, of the 40% who did not express difficulty with handwriting in school, one participant never mentioned handwriting at all, and one was converted by her teacher to being a right-handed writer in first grade. The remaining two were the youngest of several children in their families and arrived in school able to write both their letters and numbers. The 60% who did admit to having difficulty expressed great frustration with their handwriting experiences.

One frustration admitted by the left-handed school leaders was they were taught by right-handed teachers who did not know how to help them. Two left-handed school leaders referenced the difficulty they had with cursive writing. One stated she was so much slower than her peers to catch on with that style of writing. The other recalled her teacher returning graded cursive handwriting exercises and hers having red marks covering her paper. The red marks, she explained, denoted the incorrect direction of the slanting of her letters which occurred when she wrote in cursive. Classroom teachers are well trained in a vast array of developmental, academic, social, emotional, and cultural issues. According to Milsom (2014), instructing left-handers does not fall into any of those categories.

Also mentioned with handwriting were the positioning of the hand to hold the writing utensil and the positioning the paper for writing. One school leader said her only issue learning to write was knowing how to hold her pencil so she could get her letters formed correctly. Another school leader said when she used certain pens or markers, her work would often smear or the side of her hand would get messy. This is because she was not always able to angle what she was writing on. Therefore, when her hand trailed the pen or marker, it caused smearing. Paper positioning and pencil holding were challenges for left-handed school leaders but also for over 85% of surveyed students (Milsom & Milsom, 2006). One leader admitted that to this day, whenever she writes or signs anything, her paper is held at a slanted angle. When it comes to handwriting, students who are left-handed are not taught how to do so, they are only allowed to do so (Bloodworth, 1993; Silverstein & Silverstein, 1977).

A nonacademic theme that emerged in the interviews with left-handed school leaders was the role of being a left-handed athlete. Forty percent of left-handed leaders had athletic experiences in their school years. The common sports were softball/baseball and basketball. One was recruited to play basketball and softball due to her skill and handedness, but never pursued the option. One school leader who was a baseball player was forced to catch left-handed due to limited resources in his home regarding access to a right-handed glove. He also threw the ball left-handed. This meant anytime he caught the ball, he had to take the glove off his left hand before he could throw it. He said this limited his athletic ability. He admitted he preferred sports such as swimming where handedness was not an issue for him. One leader learned to play softball as a right-hander because that is how her dad and coaches taught her.

The most athletic of the school leaders could play equally well right-handed and

left-handed. She claims because she was converted as a young student to be a right-handed writer, she became equally skilled with both hands. When her basketball coach told her to pick a hand to shoot free throws, she became a right-handed basketball player; yet when it was needed, she was also utilized to dribble and shoot with her left hand as well. In softball, she threw with her right hand and would bat with her left hand. Roth (2009) explained the strength in the ability to cross over in handedness. She stated that due to the amount of accommodations left-handers must make to function in a right-handed world, left-handers are more dominant in speed, strength, and overall skill with their right hand than right-handers are with their left hand. She also said the hand-eye coordination of the nondominant hand is faster in left-handers than right-handers.

This is best noted in the Fox News Sports (2013) report where Phil Simms, former Super Bowl MVP, discussed the decline of left-handed quarterbacks in the NFL. He explained this could be attributed to the fact that a strong-armed, accurate-throwing, left-hander is more valuable to a baseball team as a pitcher than they are as a quarterback on a football team. Smits (2011) said the athletic dominance of left-handers is most evident when they participate in sports which match one opponent directly across from the other. These sports include fencing, boxing, tennis, and baseball.

The reason left-handers excel in these types of sports is because of the activities controlled by the right hemisphere of the brain. This part of the brain dictates motion control, three-dimensional processing, and planning and visual processing. This works to the advantage of the left-hander because the right-hander has to transfer what is seen visually from the left side of the brain to the right side of the brain. It only takes fractions of seconds for this visual information to travel to the right hemisphere and connect with the visual processing, three-dimensional processing and planning, and motion control;

however, in the arena of competition, it takes too long, giving the advantage to the left-handed athlete (Milsom, 2014; Roth, 2009).

Some of the most dominant athletes are left-handed. As an example, Bergland (2013) reported that the greatest tennis match of all time occurred between right-handed Roger Federer and left-handed Rafael Nadal. In this four set with a tie-breaker match, Nadal defeated Federer. Other dominant left-handed athletes include tennis players John McEnroe and Martina Navratilova, baseball player Babe Ruth, and boxer Manny Pacquiao.

The data collected regarding the educational experiences of left-handed school leaders added to previously existing body of research; however, the impact of these educational experiences, both expressed and unexpressed, were reflected in their self-identified leadership practices which were explored in Research Question 3.

Research Question 3

Research Question 3 was, “What is the relationship between primary and secondary school experiences of left-handed school leaders and their leadership practices?” This question was answered using information from the interviews with left-handed school leaders. The leadership practices by these school leaders were identified and grouped into themes. The themes of leadership practices included the ability to problem solve, a specific stance on risk-taking, empathy toward students with specific learning needs, being a creative leader, the ability to see the big picture, and the importance of details.

One hundred percent of left-handed school leaders stated that problem solving was one of their leadership practices and all of them attributed it to being left-handed. Left-handed school leaders gave examples of being able to see all possible solutions to a

problem and how this aids in decision making. They also admitted to being able to see what others do not see. Some examples school leaders gave in terms of problem solving included master scheduling, determining school traffic patterns, creating daily classroom schedules, and working with multiple funding sources to meet school needs. Roth (2009) stated left-handed leaders have the capacity to understand how to modify their plans and strategies in order to be successful.

Lebowitz (2015) explained left-handers are more likely to be divergent thinkers, and right-handers are more likely to be convergent thinkers. Konnikova (2013) explained a study conducted at the University of Athens where an equal number of left-handed and right-handed students were issued the Trail Making Test and the Letter-Number-Sequencing test. In the timed Trail Making Test, participants had to create a path through overlapping circles. In the more difficult version of the timed Trail Making Test, the overlapping circles contained either letters or numbers. Test takers had to move through the circles containing letters and numbers in ascending order while alternating between letters and numbers as they identified the path. In the second test, Letter-Number-Sequencing, participants listened to a series of numbers and letters. Then, they were asked to repeat the series of letters and numbers but had to recite the numbers in ascending order and organize the letters alphabetically. Left-handers outperformed right-handers on both the more difficult version of the Trail Making Test which measured speed and spatial skills and executive control and on the Letter-Number-Sequencing assessment which measured working memory.

These two assessments, the Trail Making Test and Letter-Number-Sequencing, also measured the ability to think divergently. Divergent thinking, identified as problem-solving skills by left-handed school leaders, served the school leaders well in terms of

scheduling. Several left-handed school leaders talked about the simplicity of scheduling – be it creating a master schedule for 1,200 students, working with classroom schedules in elementary school, creating testing schools, or revising daily schedules at the last minute.

Coren (1995) used three assessments to explore the concepts of convergent and divergent thinking between right-handed and left-handed college students. On the assessment measuring convergent thinking, right-handers outscored left-handers. Two assessments were taken by college students to measure divergent thinking. In the first assessment, students were given two unrelated objects and asked to combine them to create a functional item. In the second assessment, participants were given a set of nouns. Using these nouns, they were to group them in as many categories as possible. Each category had to have a minimum of two words. The results of this study concluded that left-handers, especially males, scored much higher on the scale of divergent thinking than right-handers.

An historical example of divergent thinking, albeit extreme, was the decision by left-handed United States President Harry Truman to unexpectedly drop atomic bombs on two cities in Japan, bringing an end to World War II. While not nearly as extreme, a type of divergent thinking was explained by one left-handed school leader who had to design a traffic pattern for the opening of a new school. The vision she designed and proposed was the most extreme and the most illogical in the minds of district office leaders. She explained how they became fixated on the difference of five cars on or off the street at any given amount of time; however, she knew her plan was the safest, the fastest, and ultimately the overall most efficient traffic pattern. She held her ground and once all parents, students, and teachers were trained on the procedure, her plan was the plan that

worked. She stated she knew her plan was the best plan. She just needed district leadership to give her a chance.

The ability to problem solve and think divergently is the same skill possessed by strong military leaders and successful chess players. Both of these groups of individuals have the ability to see the “relationship of objects in different patterns of space” (Roth, 2009, p. 180) as well as have the ability to anticipate all of the possible moves they can make as well as the moves their opponents can make in response to their potential moves (Coren, 1993). Quite similarly, what all left-handed school leaders agreed upon was that their ability to problem solve, or think divergently, was based on their ability to see all possible solutions to a problem and make a sound decision from there.

Research shows that left-handed leaders are generally risk-takers. Left-handers have a brain with a built-in tendency to be different (McManus, 2002). This difference is what makes them leaders of change and not limited by the status-quo (Wright, 2007). Roth (2009) explained left-handers who have challenged the thinking of the right-handed world have made longstanding and significant contributions to society.

Left-handed school leaders have differing opinions regarding being risk-takers. Of the 60% of left-handed school leaders who referenced risk-taking, two openly admitted they were not risk-takers. The other four school leaders were clear that they were confident in their willingness to take risks; however, even with being risk-takers, these four leaders admitted to being cautious risk-takers.

One school leader admitted, “Before I take a risk, I make sure I know there is a safety net for every person involved in my decision.” Another said she is not quick to make a risky decision as she needs to make sure she has all the information and has thought through all probable scenarios before coming to her decision. Another leader

compared her risk-taking to the time she broke the mold in terms of traditional decision making regarding student scheduling at her school. One leader expressed needing time to play the scenarios out multiple times in his mind before he committed to taking a risk. Roth (2009) stated that the risk-taking nature of left-handers is critical in our modern world.

A majority of the left-handed school leaders stated one of their leadership practices was that they were empathetic and attentive to students with identified learning needs. This could be attributed to the fact that their left-handedness made them feel different from their peers during their time as a left-handed learner. Fisher (2006) explained the more distinctive a characteristic is, the more self-conscious a person is about having that specific characteristic. Additionally, McGuire and McGuire (1980) stated being left-handed is a distinguishing characteristic.

Of the 10 left-handed school leaders, two of them spent their time as classroom teachers working with students identified as Exceptional Children. One of these school leaders commented,

As an educator who spent a portion of my educational years doing without the resources I needed to have a level playing field in the classroom, it is my goal to be able to provide students with what they need and move on.

As a student, this school leader felt as if his left-handed accommodation, which was a student desk, made his teacher feel imposed upon. In reference to helping his current students, he said, "I never want the student to feel as if their learning need is an inconvenience to anyone."

Other left-handed leaders provided examples of how they worked to aid students with specific learning needs. One school leader was very direct when he admitted, "I do

not hold differences against folks.” He also remarked how he always felt inadequate because his handwriting was so poor. He struggled with the fact that despite the diligent efforts of his mom to help him at home and his genuine desire to write neatly, he still received negative comments on his report card regarding his penmanship. As a result, he explained that in his role as a school leader, he looks for students who are struggling and makes an effort to support them. From his own experience, he knows it is so much better for students who are struggling in the classroom to receive encouragement as opposed to discouragement.

A qualitative study by Masud and Ajmal (2012) explained the humiliation and labeling placed on left-handers in the Pakistani culture. This same self-concept was present among left-handed school leaders when they were students. As a result of their experiences, these school leaders continually worked to make the learning environment better for all students with identified learning needs. Left-handed school leaders also discussed that because of their own educational experiences as a learner, they seek to be leaders who look to find solutions for teachers who are addressing student learning challenges in their classrooms. From making sure classrooms are arranged to provide adequate space for all learners to using school money to purchase fidgeting devices and bouncing balls for ADHD learners, left-handed school leaders proved their intentionality towards meeting the needs of learners with specific needs.

A medium frequency leadership practice is creativity. Among the greatest examples of research explaining the creative mind of left-handers comes from looking at a sample of creative left-handed leaders past and present. Some creative left-handers include Benjamin Franklin, Bill Gates, Celine Dion, Michelangelo, Raphael, Carol Burnett, and Jim Henson. These leaders are known for their inventions, their unique

approach in the entertainment world, and their artistic talents.

Forty percent of left-handed school leaders admitted they were creative leaders. While half of them knew creativity was a trait affiliated with left-handers, they also knew it was something evident in their leadership practices. Some of the school leaders explained their practice of creativity in terms of designing learning environments which were both visually pleasing and academically engaging. Other school leaders explained how being creative aided in branding their school and finding different ways to connect with parents and community partners. One stated that she knew her success as a leader stemmed from her high level of creativity.

Three left-handed school leaders used the idea of “being able to see the big picture” as one of their leadership practices. Each of these leaders provided examples of how they were able to look at a situation to see how all the parts of the whole fit together. These school leaders stated they were able to visualize the big picture and often found themselves making connections for other (non-left-handed) school leaders. One leader remarked in reference to her right-handed colleagues, “To me, things are just obvious. To them, it is a struggle.” Roth (2009) stated that left-handers who excel in the big picture game of Chess are able to see various patterns and objects and how they all relate together for the common goal. This is further evidenced by a left-handed school leader who explained, “I can look at things and get it.” She continued by admitting that sometimes she has to slow down and remind herself that others need help in connecting the dots.

The importance of details was a leadership practice identified by three left-handed school leaders. This practice of recognizing the importance of details is aligned with the concept of fact based decision making as well as organizational skills. A study by

Malekzadeh (2015) examined, by both handedness and gender, two approaches to addressing stressful situations. The study concluded that left-handers used problem-focused methods to address a source of stress. This idea is parallel to one of the left-handed leaders who explained that when making difficult or intense decisions, she would eliminate any detail which was related to an emotion and only focused on the factual information. There is no specific research that states left-handers are more organized than right-handers; however, one left-handed school leader stated she is confident that being left-handed attributed to her leadership practice of attention to detail.

Additional Observations

In using both the qualitative and quantitative data from this study to answer the three research questions, there were additional observations made which the researcher viewed as valuable information. The additional observations were all related to the broad theme of self-perception.

The first observations are based on quantitative data based on the results of the LPI. When examining the mean of right-handed school leader self-assessments compared to the mean of left-handed school leader self-assessments on each of the five leadership practices, right-handed school leaders rated themselves higher than left-handed school leaders. For each of the five leadership practices, the mean average for right-handed school leaders was higher than the mean of left-handed school leaders. The same is true for the number of affirmative responses provided between left-handed and right-handed school leaders on each of the leadership practices. The right-handed school leaders had more affirmative responses for each of the leadership practices than left-handed school leaders did.

Right-handed school leaders had a dominant leadership practice of Model the

Way with a mean of 51.0 and an affirmative response rate of 48. As stated previously, dominant practice for left-handers was Enable Others to Act with a mean of 48.9 and affirmative response rate of 44. For these two most dominant leadership practices, the difference in the mean was 2.1. The difference in the affirmative response rate was 4.

More intriguing, however, is the difference of means of the least dominant practice of the two groups of leaders. The least dominant practice for both right-handed and left-handed school leaders based on the mean was Inspire a Shared Vision. The right-handed mean was 45.1, and the left-handed mean was 39.3. Therefore, the self-assessed mean difference of the least dominant leadership practice of right- and left-handed school leaders was 5.8. The least dominant practices for right-handed school leaders each receiving an affirmative response rating of 31 were Challenge the Process and Inspire a Shared Vision. The least dominant practice for left-handed school leaders with an affirmative response rating of 22 was Inspire a Shared Vision. The difference of affirmative ratings for the least dominant leadership practices between left- and right-handed school leaders was 9. Regardless of the data point examined, right-handed school leaders consistently rated themselves higher on the LPI than left-handed school leaders did.

Additionally, of the 30 statements listed on the LPI survey, there were only two statements where no right-handed school leaders rated themselves at the highest level on the Likert scale. In 12 of the 30 statements, three or more right-handed school leaders gave themselves the highest rating. In 10 of the 30 statements, 70% of the right-handed school leaders scored themselves in the highest two ratings on the Likert scale. In contrast, there were 23 statements where no left-handed school leaders rated themselves at the highest level on the Likert scale. In two of the 30 statements, three or more left-

handed school leaders gave themselves the highest rating. In three of the 30 statements, 70% of the left-handed school leaders scored themselves in the highest two rating categories.

Previous research exists which explains the low scoring self-assessed ratings provided by left-handed school leaders. Kelly (1996) explained that the challenges and myths which left-handers have faced and continue to face in school and in society diminish the development of a healthy self-esteem. Wright and Hardie (2015) stated that due to life experiences, left-handers appear more self-conscious and more anxious than right-handers. This conclusion came as a result of their Towers of Hanoi study. This study measured the start times and completion times of left-handers and right-handers on a series of three- and four-disc challenges. Participants were asked to complete two challenges. First, they were assigned to complete either a simple (three disc) or difficult (four disc) challenge. Their second challenge was an assignment to either redo the first challenge they completed or complete a new challenge. The results of this study showed that left-handed women, at a much higher rate, have increased anxiety when asked to perform a simplified task versus a more difficult task. The self-imposed expectation that failure could occur on a simple task heightened their anxiety. The final results of this multi-layered study reinforced the belief of the power of the stereotype surrounding left-handers about their self-esteem and self-image. The results of this study aligned with the statement of one left-handed school leader who said, "I like to please people. Therefore I do everything I can to avoid making a mistake."

The fear of failure which left-handers expressed in the Towers of Hanoi study also reflects the ratings given on the LPI by left-handed school leaders. If left-handers doubt their potential execution of a task, they show anxiety. Also supporting this belief

are the responses to the statement on the LPI aligning to the practice of Challenge the Process which reads “experiments and takes risks even when there is a chance of failure.” While no left-handed school leader rated themselves at the top level of the scale, the spectrum of responses given were narrower for left-handed school leaders than for right-handed school leaders.

To this point, in all five leadership practices, the standard deviation of left-handed school leader responses is smaller for all five leadership practices than it is for right-handed school leader responses for all five leadership practices. This indicates while left-handed school leaders are not always self-confident, they are self-certain.

Recommendations for School Districts

Based on this study, there are several recommendations which can be made to school districts regarding the education of left-handed learners structurally, instructionally, and emotionally.

First, school districts should be aware of the “case of feast or famine” which Coren (1993) attributed to the vast discrepancy which reflected left-handed learners. In his research, he discovered that various groups of individuals with learning disabilities contained large numbers of left-handers. In contrast, Benbow (1986) conducted a study which revealed that when looking at the top 10,000 scores on the SAT, left-handers were two times more likely than right-handers to score at the highest achievement level. Based on these two studies, Coren (1993) concluded that left-handed students are academically either extremely high or extremely low.

School districts need to make an effort to level the playing field for left-handed learners by providing the essential classroom structures they need as learners. Every student should have a classroom desk which is intentionally designed to support their

needs as writers and learners. Every student should also have access to classroom materials, from scissors to advanced science equipment, which align with their handedness. By providing these items for left-handed students as well as right-handed students, all students will be able to have equal footing to approach instruction.

Instructionally, left-handed school leaders admitted there was a challenge in primary school when learning to write is essential. All students should have the opportunity to receive handwriting instruction from someone who writes with the same hand they do. There are many dimensions to writing and most of these do not look the same for left-handers and right-handers. Therefore, it is essential that left-handed learners learn how to hold their paper and pencil and form letters and numbers by watching someone who is left-handed. This can take place by direct instruction with a left-handed member of the school faculty or via the internet where numerous videos exist which model appropriate prewriting and writing techniques for left-handed learners.

Existing research, results of the LPI, and the information provided by left-handed school leaders give some insight to the emotional needs of left-handers. Left-handed school leaders learned at a young age that their learning needs are not always met in school. The study by Malusi (2014) exposed the frustration of left-handed learners who felt as if their academic performance was hindered on national assessments solely because of their handedness. Left-handers will not expect anything that happens in a school system to be based on their needs; however, because they are more likely to face stressful situations with a focus on the problem and not the emotions they feel, left-handers are better able to make things work for themselves or others. Much of the negative associations left-handed school leaders admit to having about themselves are a result of their structural and instructional needs not being met in school. Their

handedness is not a reflection of their intelligence but it sometimes appears to be so due to hindrances in the classroom which limit them from performing their best. Left-handers who have enough negative classroom experiences can experience low self-esteem. It is important that school districts make an effort to provide intentional support for left-handed learners.

Recommendations for Hiring Managers and Evaluators

When hiring left-handed leaders, managers should know they are most likely hiring someone with the ability to problem solve. Left-handed school leaders in this study admitted that they were able to see multiple approaches to various problems. They also explained they were able to offer multiple solutions to various tasks assigned. Both Coren (1995) and Konnikova (2013) conducted research on handedness and thinking processes. In both studies, left-handers displayed a strong use of divergent thinking in their approach to problem solving.

Hiring managers and evaluators should understand that when left-handed leaders are asked to articulate their strengths, they will most likely underestimate or underassess their leadership strengths and practices. In this study, left-handed and right-handed school leaders took the LPI which asked them to rank themselves on 30 leadership statements which were aligned to five leadership practices. The quantitative data reported by left-handed school leaders were markedly lower than the data reported by right-handed school leaders. This could be due to self-confidence issues which plague left-handers as concluded by the studies of Masud and Ajmal (2012) and Wright and Hardie (2015). Therefore, when asked to provide a self-assessment, managers and evaluators should be aware that left-handed school leaders will most likely rate themselves low.

It is also important to know that while left-handers are good motivators, they are not always natural encouragers. In this study, left-handed leaders ranked themselves high on leadership traits such as praising employees for work well done, treating employees with respect, and developing cooperative relationships at work. Left-handed school leaders reflected strong leadership practices on the LPI in the areas of Enable Others to Act and Model the Way. This aligns with the practices of social change leader Mahatma Gandhi and United States President Ronald Reagan, both of whom are left-handed leaders.

Left-handed school leaders did not rank themselves as high when it came to Encouraging the Heart of their employees. While it was the third highest ranking leadership practice of left-handed school leaders, it was not one that received even half of the possible number of affirmative statements. Left-handed school leaders easily recalled teachers who were discouraging to them when they were students. They also reflected on their independent efforts to make classroom desks functional for their needs. They were required to be self-starters and self-motivators as learners. As a result, left-handed leaders might not always consider the fact that those they lead require more encouragement and incentives than they do.

Left-handed leaders can be risk-takers. The research of McManus (2002), Roth (2009), and Wright (2007) shows that left-handed leaders are not afraid to question the status-quo or take risks, yet left-handed school leaders who admit to being risk-takers are calculated risk-takers. They consider all possible scenarios and seek to eliminate all safety concerns prior to taking the risk. Left-handed school leaders, based on the research of this study and the studies of others, tend to be more cautious risk-takers than left-handed leaders in general.

Left-handed leaders have the ability to be excellent communicators. Wang and Aamodt (2009) explained that left-handers are naturally strong communicators despite the fact that the left hemisphere of the brain controls all things related to reading, writing, and speaking. Likewise, McManus (2002) contributed that in the brain of a left-hander, submodules can develop in unconventional locations, meaning content or skills belonging to the right hemisphere in the standard brain can either fully exist or co-exist in the left hemisphere of the left-hander's brain. Wang and Aamodt added that one in seven left-handers process language on both sides of their brain as opposed to one in 20 right-handers. This is attributed to the fact that left-handers must do so many things in a right-handed world; they, from an early age, have stimulated the development of the right hemisphere of the brain allowing both portions of the brain to house language skills (McManus, 2002). This research endorses the experiences left-handed school leaders have had when seeking to motivate their employees.

When hiring left-handed leaders, they should be provided a clear understanding as to why they were selected for the position they were hired for. They should also be made aware of the desired outcomes of their leadership. Left-handed school leaders admit they have an ability to see the big picture. They also state they understand how all of the small parts work together to form a whole. Since left-handed leaders are able to visualize this from the outside looking in, they also have a need to understand their role in the big picture. One left-handed school leader explained, "I need information presented to me with the outcome clearly defined."

When rating themselves on the LPI, left-handed school leaders were very clear that they feared failure. On the statement inquiring as to whether the self-assessing leader, "experiments and takes risks, even when there is a chance of failure," no left-

handed school leader rated themselves at the highest level on the Likert scale. Likewise, a left-handed school leader expressed her fear of failure as a leader. She confessed she did not want to disappoint anyone in her role as a leader. Left-handed leaders who do not understand how they fit into the big picture of the organization will question whether they are viewed as failures, even if they are being successful.

Left-handed leaders bring strong leadership practices to the organizations where they work. Left-handed leaders are problem solvers, motivators, risk-takers, and strong communicators and have the ability to see both the small details and the big picture. Additionally, left-handed leaders are likely to assess too low or underestimate their strengths, are not natural encouragers, have a fear of failure, and have a need to understand their specific role or task in an organization. When hiring and evaluating left-handed leaders, it is important to understand the leadership traits that are most common to them and how they can best be used within the organization.

Limitations

This population of this study was limited to 10 left-handed school leaders and 10 right-handed school leaders in a large school system in North Carolina during the 2016-2017 year. The findings of this study are based on a small population of school leaders who have served within the past year or are currently serving as principals in their school district. They do not necessarily represent right-handed and left-handed leaders in other professions including those within education.

Two types of data were collected in this study. A survey was taken by both left-handed and right-handed school leaders. In this survey, they self-assessed their leadership practices. There are several limitations to this type of survey research. First, a self-assessment is not always accurate. Directions were given as to how to take the

survey; however, the researcher was not present while the survey was taken. Therefore, the researcher was unable to control the environment or validate the authenticity of the survey being a true self-assessment. Additionally, the left-handed school leaders participated in an open-ended question interview. While there were four questions which served as a launching point for the interviewees, the more interviews the researcher conducted, the more confident she became in probing beyond the surface of the initial answers given. School leaders interviewed later in the process were more likely to offer more information or provide more details in their answers. Also, one of the questions referred to childhood memories. There has been a significant gap in time between present day and the time the interviewees were in primary and secondary school.

Variables other than those reflected in this study may impact the results of the leadership practices. Variables which were not studied include gender, age, race, family composition, classifications as either an exceptional learner or academically gifted student, length of time as a school leader, and type of school served. Each of these variables could have altered the results of the leadership practices survey.

The sample size for this study was 10 left-handed and 10 right-handed school leaders. This number was based on the eligible number of left-handed school leaders able to participate in the study. The same number of right-handed school leaders were added to match that total. The small size of the sample might have had an effect on the validity of the study.

It should also be noted that the researcher was left-handed. Regardless of these limitations, this study was important. This study explored the educational experiences of left-handed learners and the leadership practices of left-handed school leaders. This study was able to explain the relationship between some educational experiences of left-

handed school leaders and the relationship to their leadership practices. It was important because it can help school districts understand the vast needs associated with left-handed learners. This study also helps hiring managers and evaluators understand the beliefs left-handed leaders have about themselves and trends in their leadership practices.

Implications for Further Research

The implications for further research are suggested by the findings of this study. This study interviewed 10 left-handed school leaders about their educational experiences. These left-handed school leaders also took the LPI survey to assess their leadership practices.

Adding to this study, these same left-handed school leaders could be rated on the LPI-Observer by supervisors, teacher leaders in their school, and other members of district leadership. External assessors could create a different result on the quantitative portion of the research.

Also, this same study could be replicated with the exception of sample size. The sample size of the study could be increased by including left-handed school leaders from multiple school districts. This would allow for more depth in the qualitative and quantitative portion of the study.

Provided the opportunity, the qualitative portion of the study could be replicated on left-handed individuals who are not in leadership positions. This would examine through a different lens the long-term impact of educational experiences on left-handers who do not consider themselves leaders.

An additional dimension to this study would be to have left-handed school leaders take a second quantitative survey addressing school leadership practices. On this survey, left-handed school leaders would rank themselves on predetermined school leadership

practices using a Likert scale. The results of both the LPI and the second survey could be used to determine if there is a relationship between the rankings of school leadership practices, the results of the leadership practice survey, and educational experiences. This would allow for hiring managers to make an even more informed decision on the hiring and placement of left-handed school leaders.

Further research could be conducted to explore the perceived leadership practices for left-handed school leaders in other educational roles such as teacher leaders, assistant principals, directors and executive directors, assistant/associate superintendents, superintendents, and even school board members.

Summary and Conclusions

From the onset, this mixed-methods study has been called “different, unique” and referred to as “just out there.” The results of this study of left-handers as learners and leaders offer some insight as to why this study seemed to be extraordinary to a right-hander and perfectly logical to a left-hander.

All participants, right-handed and left-handed school leaders, in this study took a self-assessed leadership practice inventory. The results of this inventory found that left-handed school leaders’ top three self-assessed leadership practices were Enable Others to Act, Model the Way, and Encourage the Heart. These dominant leadership practices were consistent regardless of whether the data were based on the mean of each leadership practice or the number of affirmative responses given to the six statements which corresponded to each leadership practice.

Through interviews of left-handed school leaders, this study revealed that left-handers face a significant number of challenges in school. The focus of this study examined the educational experiences of left-handers. The study revealed left-handers

experienced numerous difficulties, particularly as students in elementary school. Another scope of the study was to reflect upon the self-assessed leadership practices of left-handed school leaders. When looking to determine if a relationship existed between experiences faced as left-handed students and as left-handed school leaders, left-handed school leaders could identify certain leadership strengths they possessed which they attributed to being left-handed.

References

- Bauder, D. (2008). So far, debates lack the memorable lines of past. Reported on *Fox News*, October 8, 2008. Retrieved from http://www.foxnews.com/printer_friendly_wires/2008Oct08/0,4675,TVMemorabl eDebates,00.html
- Benbow, C. (1986). Physiological correlates of extreme intellectual precocity. *Neuropsychologia*, 24, 719-725.
- Bergland, C. (2013). Are lefties more likely to become champions and leaders? *Psychology Today*. August 2013. Retrieved from <https://www.psychologytoday.com/blog/the-athletes-way/201308/are-lefties-more-likely-to-become-champions-and-leaders>
- Bloodworth, J. G. (1993). The left-handed writer [Informational Analyses Guide]. Retrieved from: <http://files.eric.ed.gov/fulltext/ED356494.pdf>
- Carroll, L. (1871). *Through the looking glass*. New York, NY: Macmillian & Co.
- Charlton, J. (2002). *The military quotation book*. New York, NY: St. Martin's Press.
- Collins, J. (2001). *Good to great*. New York, NY: HarperCollins Publishers Inc.
- Coren, S. (1993). *The left-hander syndrome*. New York, NY: Vintage Books.
- Coren, S. (1995). Differences in divergent thinking as a function of handedness and sex. *American Journal of Psychology*, 108(3), 311-325. Retrieved from http://synapse.princeton.edu/~sam/coren95_am_j_psychol_divergent-thinking.pdf
- Covey, S., Merrill, A. & Merrill, R. (1994). *First things first*. New York, NY: Simon & Schuster.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, CA: Sage.
- De Pree, M. (2004). *Leadership is an art*. New York, NY: Doubleday.
- Dixon, L. N. (2014). *Leadership practice differences in positive climate schools*. (Unpublished doctoral dissertation). University of South Carolina, Columbia, SC. Retrieved from <http://scholarcommons.sc.edu/etd/2621>
- Educational Testing Services. (2007). *Major field tests: Test administration manual*. Retrieved from <https://www.ets.org/Media/Tests/MFT/pdf/TestAdmMan.pdf>
- Fincher, J. (1977). *Lefties*. New York, NY: G.P. Putnam's Sons.

- Fisher, J. R. (2006). Psychosocial differences between left-handed and right-handed children. (Masters of Educational Psychology Thesis). Wichita State University, Kansas. Retrieved from <http://soar.wichita.edu/bitstream/handle/10057/646/t06123.pdf?sequence=1>
- Fox News Sports (2013). *Where have all the lefties gone?* Retrieved from <http://www.foxnews.com/sports/2013/08/29/where-have-all-lefties-gone.html>
- Friedman, T. (2007). *The world is flat*. New York, NY: Picador.
- Gardner, H. (2011). *Leading minds: An anatomy of leadership*. New York, NY: Basic Books.
- Ghosh, K. (2016). Left-handed students are hindered by lack of accommodating desks. *Daily Bruin*. April 7, 2016. Retrieved from <http://dailybruin.com/2016/04/07/Kuhelika-gosh-left-handed-students-are-hindered-by-lack-of-accommodating-Desks/>
- Gimbel, P. (2003). *Solutions for promoting principal-teacher trust*. Lanham, MD: The Scarecrow Press, Inc.
- Gostick, A., & Elton, C. (2012). *All in. How the best managers create a culture of belief and drive big results*. New York, NY: Free Press.
- Hackney, C. (1997). *Left-handed in a right-handed world*. (Report No. CS 215824) Washington DC: Office of Educational Research and Improvement. (ERIC Document Reproduction Service No. ED 406692). Retrieved from <https://eric.ed.gov/?id=ED406692>
- Hawkyard, R. (2014). The handwriting experiences of left-handed primary school students in a digital age: Australian data and critique. *Australian Journal of Education*, 58(2), 123-138. Retrieved from <http://search.proquest.com.ezproxy.gardner-webb.edu/docview/1659758087/fulltextPDF/8374F4CF288146CCPQ/1?accountid=11041>
- Helms, P. M. (2012). *Effective leadership: Perceptions of principals and the teachers they lead* (Doctoral dissertation). Gardner-Webb University. Retrieved from http://digitalcommons.gardner-webb.edu/cgi/viewcontent.cgi?article=1056&context=education_etd
- Hertz, R. (1960). *Death and the right hand*. (R. Needham & C. Needham, Trans.). Glencoe, IL: The Free Press. (Original work published 1907)
- Holder, M. K. (2003). *What's wrong with this desk?* Handedness Research Institute Papers. Retrieved from <http://handedness.org.action/fairdesks.html>

- Jernigan, K. (1986). Blindness: A left-handed dissertation. *Braille Monitor*, August-September 1986, 1-6. Retrieved from <https://nfb.org/images/nfb/publications/bm/bm86/bm8608/bm860802.htm>
- Kelly, E. (1996). *Left-handed students: A forgotten minority*. Bloomington, IN: Phi Delta Kappa Educational Foundation.
- Konnikova, M. (2013). Sinister minds: Are left-handed people smarter? Retrieved from <http://www.newyorker.com/tech/elements/sinister-minds-are-left-handed-people-smarter>
- Kouzes, J., & Posner, B. (2003a). *The five practices of exemplary leadership publication*. San Francisco, CA: Pfeiffer.
- Kouzes, J., & Posner, B. (2003b). *The leadership challenge workbook*. San Francisco, CA: Jossey Bass.
- Kouzes, J., & Posner, B. (2012). *The leadership challenge* (5th ed.). San Francisco, CA: Jossey-Bass.
- Kula, P. (2008) *Peculiarities of left-handed children's success at school* [Abstract]. Tallinn University, Estonia. Retrieved from www.digar.ee/arhiiv/et/download/200638
- Lebowitz, S. (2015). Scientists say left-handed people may be smarter in one key way. *Business Insider*. Retrieved from <http://businessinsider.com/left-handed-people-may-be-smarter-2015-12>
- Lindsay, R. (1996). *Left is right*. Edgewood Cliffs, NJ: Gilmour House.
- Litman, J. A. (2006). The cope inventory: Dimensionality and relationships with approach – and avoidance motives and positive and negative traits. *Personality and Individual Differences*, 41, 273-284. Retrieved from <http://drjlitman.net/wp-content/uploads/2013/11Litman-2006.pdf>
- Malekzadeh, A. (2015). The relation between skills of coping strategy and lateralization among students. *Mediterranean Journal of Social Science*, 6(656), 424-430. Retrieved from <http://www.mcser.org/journal/index.php/mjss/article/viewFile/8517/8177>
- Malusi, B. (2014). Challenges left-hand students face in Kenyan girls' secondary school science laboratories. *African Journal of Chemical Education*, 4(3), 150-165. Retrieved from <http://www.ajol.info/index.php/ajce/article/download/104105/94212>

- Malusi, B., Mungai, C., & Odiemo, L. (2015). Relationship between the usage of equipment designed for right-handed people and attitudes towards chemistry among left-handed high school students in Kenya. *African Journal of Chemical Education*, 4(3), 16-58. Retrieved from <http://www.ajol.info/index.php/ajce/article/view/119709/109169>
- Masud, Y., & Ajmal, A. (2012). Left-handed people in a right-handed world: A phenomenological study. *Pakistan Journal of Social and Clinical Psychology*, 9(2), 49-60. Retrieved from <http://www.gcu.edu.pk/FullTextJour/PJSCS/2012/9.pdf>
- Marzano R., Waters, T., & McNulty, B. (2005). *School leadership that works: From research to results*. Alexandria, VA: ASCD.
- Maxwell, J. (2002). *Leadership 101*. Nashville, TN: Thomas Nelson.
- McEwan, E.K. (2003). *10 traits of highly effective principals*. Thousand Oaks, CA: Corwin Press.
- McGuire, W. J., & McGuire, C. V. (1980). Salience of handedness in the spontaneous self-concept. *Perceptual and Motor Skills*, 50, 3-7. Retrieved from <http://pms.sagepub.com/content/50/1/3.full.pdf>
- McManus, C. (2002). *Right hand left hand: The origins of asymmetry in brains, bodies, atoms, and cultures*. Cambridge, MA: Harvard University Press.
- Merriam Webster Online. (2016). Left-Handed [Def. 4]. Retrieved from <http://www.merriam-webster.com/dictionary/left-handed>
- Milsom, L. (2014). *Your left-handed child*. New York, NY: Hachette Book Group USA.
- Milsom, K., & Milsom, L. (2006). Left handed children failed by teachers. Retrieved from <http://www.lefthandedchildren.org/press-relase-survey.htm>
- Misigo, B. (2015). Left-handed pupils in a right-handed learning environment: A case of primary schools in Vihiga County Kenya. *International Journal of Innovative Research and Advanced Studies*, 2(6), 71-75. Retrieved from http://www.ijiras.com/2015/Vol_2-Issue_6/paper_13.pdf
- Nunberg, G (2004). And, yes, he was a great communicator. *New York Times*. June 24, 2004. Retrieved from http://www.nytimes.com/2004/06/13/weekinreview/and-yes-he-was-a-great-communicator.html?_r=0
- Patterson, J., Goens, G., & Reed, D. (2009). *Resilient leadership for turbulent times: A guide to thriving in the face of adversity*. Lanham, MD: Rowman & Littlefield Education.

- Patterson, J., & Kelleher, P. (2005). *Resilient school leaders: Strategies for turning adversity into achievement*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Pellicer, L. O. (2003). *Caring enough to lead: How reflective thought leads to moral leadership*. Thousand Oaks, CA: Corwin Press.
- Posner, B. (2002). The leadership practices inventory: Theory and evidence behind the five practices of exemplary leaders. Retrieved from http://www.leadershipchallenge.com/UserFiles/lc_jb_appendix.pdf
- Posner, B. (2016). Investigating the reliability and validity of the leadership practices inventory. *Administrative Sciences*, 6(17), 1-23. Retrieved from <http://www.mdpi.com/2076-3387/6/4/17pdf>
- Renfro, A. (2004). *From assistance to excellence: The story of Arlington Elementary School* (Doctoral dissertation). University of South Carolina, South Carolina.
- Roth, M. (2009). *The left stuff: How the left-handed have survived and thrived in a right-handed world*. Lanham, MD: The Rowman & Littlefield Publishing Group, Inc.
- Schlechty, P. (2005). *Creating great schools*. San Francisco, CA: Jossey-Bass.
- Silverstein, A., & Silverstein, V.B. (1977). *The left-hander's world*. Chicago, IL: Follett Publishing Company.
- Smits, R. (2011). *The puzzle of left-handedness*. London: Reaktion Books Ltd.
- Summitt, P. (2014). *Sum it up: A thousand and ninety-eight victories, A couple of irrelevant losses and a life in perspective*. New York, NY: Crown Publishing.
- Thomson, R. (2006). Left handed music making. *New Horizons for Learning – John Hopkins School of Education*, April 2006. Retrieved from <http://education.jhu.edu/PD/newhorizons/strategies/topics/Arts%20in%20education/thomson.htm>
- Tipton, T. E. (2007). Perceived leadership practices of principals-coaches and principals-noncoaches (doctoral dissertation). East Tennessee State University. Retrieved from <http://dc.etsu.edu/cgi/viewcontent.cgi?article=3466&context=etd>
- Villano, F. (2013). How left-handed musicians survive a right-handed music world. *Making Music*, August, 2013. Retrieved from <http://makingmusicmag.com/how-left-handed-musicians-survive-a-right-handed-music-world/>
- Wang, S., & Aamodt, S. (2009). *Welcome to your brain: Why you lose your car keys but never forget how to drive and other puzzles of everyday life*. New York, NY: Bloomsbury.

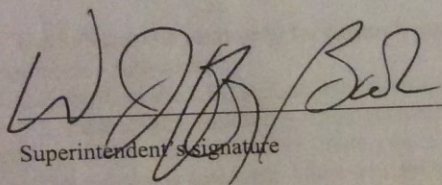
- Wallace, M. (1975, December 14). Interview by M. Wallace with Governor Ronald Reagan. 60 Minutes.
- Wenze, G., & Wenze, N. (2004). Helping left-handed children adapt to school expectations. *Childhood Education*, 81(1), 25-29. Retrieved from <http://www.freepatentsonline.com/article/Childhood-Education/124077830.html>
- Whitaker, T. (2003). *What great principals do differently: Fifteen things that matter most*. Larchmont, NY: Eye on Education.
- Wolman, D. (2005). *A left- hand turn around the world: Chasing the mystery and meaning of all things southpaw*. Cambridge, MA: Da Capo Press.
- Wright, E. (2007). *A left-handed history of the world*. Millers Point, Australia: Murdoch Books.
- Wright, L & Hardie, S. (2015, Feb. 3). Left-handers look before they leap: Handedness influences reactivity to the novel Tower of Hanoi tasks. *Frontiers in Psychology*. Retrieved from <http://dx.doi.org/10.3389/fpsyg.2015.00058>

Appendix A

Permission from Superintendent

February 16, 2017

As superintendent of Gaston County Schools, I give Rebecca Huffstetler permission to conduct educational research using the left-handed principals and central office leaders one year removed from the principalship as well as right-handed principals in our school district. The research will be conducted using a four question interview based on the educational experiences and leadership practices of the left-handed leaders. Additionally, the left-handed participants and an equal number of right-handed participants will complete a 30 question Leadership Practice Inventory (LPI) survey. Permission is granted to both survey and interview these participants. I understand participation is voluntary. All responses will be kept confidential. No individuals nor the schools they serve will be identified in any reports.


Superintendent's signature

2/17/17
Date

Appendix B

Open-Ended Research Questions

Interview Questions for Left-Handed School Leaders

1. Describe your elementary school experiences as a left-handed person.
2. Describe your secondary school experiences as a left-handed person.
3. Describe how your left-handedness contributes to the leadership practices you currently have?
4. Describe how any experiences you have had as a left-hander could have influenced your responses to the Leadership Practices Inventory?

Appendix C

Leadership Practices Inventory (LPI), Fourth Edition

JAMES M. KOUZES | BARRY Z. POSNER

LPI[®]

Leadership Practices Inventory

FOURTH EDITION

SELF

THE
LEADERSHIP
CHALLENGE[®]
A Wiley Brand

FROM THE BEST-SELLING AUTHORS OF *THE LEADERSHIP CHALLENGE*



BY JAMES M. KOUZES & BARRY Z. POSNER

INSTRUCTIONS

Write your name in the space provided at the top of the next page. Below your name, you will find thirty statements describing various leadership behaviors. Please read each statement carefully, and using the rating scale below, ask yourself:

“How frequently do I engage in the behavior described?”

- Be realistic about the extent to which you actually engage in the behavior.
- Be as honest and accurate as you can be.
- DO NOT answer in terms of how you would like to behave or in terms of how you think you should behave.
- DO answer in terms of how you typically behave on most days, on most projects, and with most people.
- Be thoughtful about your responses. For example, giving yourself 10s on all items is most likely not an accurate description of your behavior. Similarly, giving yourself all 1s or all 5s is most likely not an accurate description either. Most people will do some things more or less often than they do other things.
- If you feel that a statement does not apply to you, it's probably because you don't frequently engage in the behavior. In that case, assign a rating of 3 or lower.

For each statement, decide on a response and then record the corresponding number in the box to the right of the statement. After you have responded to all thirty statements, go back through the LPI one more time to make sure you have responded to each statement. *Every statement must have a rating.*

The Rating Scale runs from 1 to 10. Choose the number that best applies to each statement.

RATING SCALE	1-Almost Never	3-Seldom	5-Occasionally	7-Fairly Often	9-Very Frequently
	2-Rarely	4-Once in a While	6-Sometimes	8-Usually	10-Almost Always

When you have completed the LPI-Self, please return it to:

Thank you.

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LPI: LEADERSHIP PRACTICES INVENTORY SELF

Your name: _____

To what extent do you engage in the following behaviors? Choose the response number that best applies to each statement and record it in the box to the right of that statement.

1. I set a personal example of what I expect of others.	<input type="text"/>
2. I talk about future trends that will influence how our work gets done.	<input type="text"/>
3. I seek out challenging opportunities that test my own skills and abilities.	<input type="text"/>
4. I develop cooperative relationships among the people I work with.	<input type="text"/>
5. I praise people for a job well done.	<input type="text"/>
6. I spend time and energy making certain that the people I work with adhere to the principles and standards we have agreed on.	<input type="text"/>
7. I describe a compelling image of what our future could be like.	<input type="text"/>
8. I challenge people to try out new and innovative ways to do their work.	<input type="text"/>
9. I actively listen to diverse points of view.	<input type="text"/>
10. I make it a point to let people know about my confidence in their abilities.	<input type="text"/>
11. I follow through on the promises and commitments that I make.	<input type="text"/>
12. I appeal to others to share an exciting dream of the future.	<input type="text"/>
13. I search outside the formal boundaries of my organization for innovative ways to improve what we do.	<input type="text"/>
14. I treat others with dignity and respect.	<input type="text"/>
15. I make sure that people are creatively rewarded for their contributions to the success of our projects.	<input type="text"/>
16. I ask for feedback on how my actions affect other people's performance.	<input type="text"/>
17. I show others how their long-term interests can be realized by enlisting in a common vision.	<input type="text"/>
18. I ask "What can we learn?" when things don't go as expected.	<input type="text"/>
19. I support the decisions that people make on their own.	<input type="text"/>
20. I publicly recognize people who exemplify commitment to shared values.	<input type="text"/>
21. I build consensus around a common set of values for running our organization.	<input type="text"/>
22. I paint the "big picture" of what we aspire to accomplish.	<input type="text"/>
23. I make certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs that we work on.	<input type="text"/>
24. I give people a great deal of freedom and choice in deciding how to do their work.	<input type="text"/>
25. I find ways to celebrate accomplishments.	<input type="text"/>
26. I am clear about my philosophy of leadership.	<input type="text"/>
27. I speak with genuine conviction about the higher meaning and purpose of our work.	<input type="text"/>
28. I experiment and take risks, even when there is a chance of failure.	<input type="text"/>
29. I ensure that people grow in their jobs by learning new skills and developing themselves.	<input type="text"/>
30. I give the members of the team lots of appreciation and support for their contributions.	<input type="text"/>

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LPI: LEADERSHIP PRACTICES INVENTORY SELF

Appendix D

Wiley & Sons, Inc. Permission to Use Study Letter

WILEY

February 16, 2017

Rebecca Huffstetler
221 N. Lane Rd
Mt Holly, NC 28120

Dear Ms. Huffstetler:

Thank you for your request to use the LPI®: Leadership Practices Inventory® in your research. This letter grants you permission to use either the print or electronic LPI [Self/Observer/Self and Observer] instrument[s] in your research. You may **reproduce** the instrument in printed form at no charge beyond the discounted one-time cost of purchasing a single copy; however, you may not distribute any photocopies except for specific research purposes. If you prefer to use the electronic distribution of the LPI you will need to separately contact Joshua Carter (jocarter@wiley.com) directly for further details regarding product access and payment. Please be sure to review the product information resources before reaching out with pricing questions.

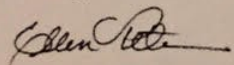
Permission to use either the written or electronic versions is contingent upon the following:

- (1) The LPI may be used only for research purposes and may not be sold or used in conjunction with any compensated activities;
- (2) Copyright in the LPI, and all derivative works based on the LPI, is retained by James M. Kouzes and Barry Z. Posner. The following copyright statement must be included on all reproduced copies of the instrument(s); "Copyright © 2013 James M. Kouzes and Barry Z. Posner. Published by John Wiley & Sons, Inc. All rights reserved. Used with permission";
- (3) One (1) **electronic** copy of all papers, reports, articles, and the like which make use of the LPI data must be sent **promptly** to my attention at the address below; and,
- (4) We have the right to include the results of your research in publication, promotion, distribution and sale of the LPI and all related products.

Permission is limited to the rights granted in this letter and does not include the right to grant others permission to reproduce the instrument(s) except for versions made by nonprofit organizations for visually or physically handicapped persons. No additions or changes may be made without our prior written consent. You understand that your use of the LPI shall in no way place the LPI in the public domain or in any way compromise our copyright in the LPI. This license is nontransferable. We reserve the right to revoke this permission at any time, effective upon written notice to you, in the event we conclude, in our reasonable judgment, that your use of the LPI is compromising our proprietary rights in the LPI.

Best wishes for every success with your research project.

Cordially,



Ellen Peterson
Permissions Editor
Epeterson4@gmail.com

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F +1 415 433 0499
www.wiley.com

Appendix E

LPI Practices and Statements Alignment

Leadership Practices Inventory – Practices/Statement Alignment

Leadership Practice	Item Number	Statement
Model the Way	1	I set a personal example of what I expect of others.
	6	I spend time and energy making certain that the people I work with adhere to the principles and standards we have agreed on.
	11	I will follow through on the promises and commitments that I make.
	16	I ask for feedback on how my actions affect other people's performance.
	21	I build consensus around a common set of values for running our organization.
	26	I am clear about my philosophy of leadership.
Inspire a Shared Vision	2	I talk about future trends that will influence how our work gets done.
	7	I describe a compelling of what our future could be like.
	12	I appeal to others to share an exciting dream of the future.
	17	I show others how their long-term interests can be realized by enlisting a common vision.
	22	I paint the "big picture" of what we aspire to accomplish.
	27	I speak with genuine conviction about the higher meaning and purpose of our work.
Challenge the Process	3	I seek out challenging opportunities that test my own skills and abilities.
	8	I challenge people to try out new and innovative ways to do their work.
	13	I search outside the formal boundaries of my organization for innovative ways to improve what we do.
	18	I ask, "What can we learn?" when things don't go as expected.
	23	I make certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs that we work on.
	28	I experiment and take risks, even when there is a fear of failure.
Enable Others to Act	4	I develop cooperative relationships among the people I work with.
	9	I actively listen to diverse points of view.
	14	I treat others with dignity and respect.
	19	I support the decisions that people make on their own.
	24	I give people a great deal of freedom and choice in deciding how to do their work.
	29	I ensure that people grow in their jobs by learning new skills and developing themselves.
Encourage the Heart	5	I praise people for a job well done.
	10	I make it a point to let people know about my confidence in their abilities.
	15	I make sure that people are creatively rewarded for their contributions to the success of our projects.
	20	I publically recognize people who exemplify commitment to shared values.
	25	I find ways to celebrate accomplishments.
	30	I give the members of the team lots of appreciation and support for their contributions.

Appendix F

Participant Consent Form

Gardner-Webb University IRB
Informed Consent Form

Title: The Left-Handed Leader: Educational Experiences and Leadership Practices

Researcher:
Rebecca Huffstetler
Candidate, Doctor of Education

Purpose

The purpose of the research study is to study the elementary and secondary school experiences of left-handed school leaders. Further, left-handed and right-handed school leaders will take Kouzes and Posner's thirty question Leadership Practices Inventory (LPI) Self, 4th Edition. Data will be collected through individual interviews with left-handed school leaders and through the LPI Self survey. This data will be used to determine if there are consistent experiences left-handers have in school, if left-handed leaders have similar leadership practices, and whether there is a pattern between the themes of left-handed leaders' school experiences and their dominant leadership practices.

Procedure

Upon approval from the superintendent, the research will be conducted among participants in a school district located in the Piedmont region of North Carolina. Participants will be current principals of the fifty-four schools in the school district and central office leaders-

Eligible participants will be invited to a meeting either held in person or through the use of an online meeting forum to discuss the purpose of the research and to explain the quantitative and qualitative data collection process. Eligible participants will be asked give their consent to become participants in the study. The data collection process will be as follows:

1. Following the meeting, all participants will be given a paper copy of the LPI Self, Fourth edition. Participants will be asked to complete and return the survey to the researcher within one week to the either in person or through the inner-mail system of the district.
2. LPI Self survey data will be entered by the researcher using LPI scoring software. From the scoring software, customized reports will be generated for each individual participant as well as for the group as a whole.
3. Following the collection of the LPI Self survey from all participants, the researcher will conduct and record an individual interview with all left-handed participants and ask each of them the following questions:
 1. Describe your elementary school experiences as a left-handed person.
 2. Describe your secondary school experiences as a left-handed person.
 3. Describe how your left-handedness contributes to the leadership practices you currently have?
 4. Describe how any experiences you have had as a left-hander could have influenced your responses to the Leadership Practices Inventory?

4. Interview data will be outsourced to a transcriptionist to be transcribed into print form.
5. Once in print form, data will be analyzed for common themes or experiences. Themes or experiences which are mentioned one to two times will be considered to have a low frequency. Themes or experiences which are mentioned between three and five times will be considered to have a moderate frequency. Themes or experiences which are mentioned more than six times will be considered to have a high frequency.
6. The analyzed qualitative and quantitative data will be used to answer the three research questions. The qualitative data will be used to report themes and of the educational experiences of left-handed leaders. Quantitative data from the LPI Self will be used to explain any patterns which emerge among the leadership practices of left-handed leaders. All collected data will be used to determine if there is a relationship between identified educational experiences of left-handed school leaders and their pattern of leadership practices.

Time Required

It is anticipated that the study will require about 50 minutes of your time. The LPI Self survey is a paper-pencil survey which will take about 15 minutes to complete. The individual interview is estimated to take no longer than 30 minutes.

Voluntary Participation

Participation in this study is voluntary. You have the right to withdraw from the research study at any time without penalty. You also have the right to refuse to answer any question(s) for any reason without penalty. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identified state.

Confidentiality

The information that you give in the study will be handled confidentially. Your information will be assigned a code. The list connecting your name to this code will be kept in a secure location. The audio files and the transcription of the audio files will also be kept in this location. When the study is completed and the data have been analyzed, all information in the secure location will be destroyed. Your name will not be used in any report.

Risks

There are no anticipated risks in this study.

Benefits

There are no direct benefits associated with participation in this study. The study may help us to understand the learning experiences of left-handed students in elementary and

secondary school, the leadership practices of left-handed leaders and the relationship left-handedness has to the leadership practices of school leaders. The Institutional Review Board at Gardner-Webb University has determined that participation in this study poses minimal risk to participants.

Payment

You will receive no payment for participating in the study.

Right to Withdraw From the Study

You have the right to withdraw from the study at any time without penalty. If you choose to withdraw from the study, your audio (or video) tape will be destroyed. If you want to withdraw from the study during the interview process, tell the interviewer to stop the interview. There is no penalty for withdrawing. If you would like to withdraw after your materials have been submitted, please contact Rebecca Huffstetler.

If you have questions about the study, contact the following individuals.

Rebecca Huffstetler
Department of Education
Gardner-Webb University
Boiling Springs, NC 28017
704.860.3575
rlhuffstetler@gaston.k12.nc.us

Dr. Steve Laws
Department of Education
Gardner-Webb University
Boiling Springs, NC 28017
slaws@gardner-webb.edu

If the research design of the study necessitates that its full scope is not explained prior to participation, it will be explained to you after completion of the study. If you have concerns about your rights or how you are being treated, or if you have questions, want more information, or have suggestions, please contact the IRB Institutional Administrator listed below.

Dr. Jeffrey S. Rogers
IRB Institutional Administrator
Gardner-Webb University
Boiling Springs, NC 28017
704-406-4724
jrogers3@gardner-webb.edu

Voluntary Consent by Participant

I have read the information in this consent form and fully understand the contents of this document. I have had a chance to ask any questions concerning this study and they have been answered for me.

_____ I agree to participate in the confidential survey.
_____ I do not agree to participate in the confidential survey.

_____ I agree to participate in the interview session(s). I understand that this interview may be audio recorded for purposes of accuracy. The audio recording will be transcribed and destroyed.
_____ I do not agree to participate in the interview session(s).

_____	Date: _____
Participant Printed Name	
_____	Date: _____
Participant Signature	

You will receive a copy of this form for your records.