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A Quantitative Study of the Relationships Among Psychological Safety, Collaborative Capacity, and School Climate in Middle-Level Schools

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A Dissertation submitted to the Education Faculty of Lindenwood University in partial fulfillment of the requirements for the degree of

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Dr. Trey Moeller, Dissertation Chair — Date 4.19.22

Dr. Anthony Rossetti, Committee Member — Date 4/19/2022

Dr. Sherry DeMore, Committee Member — Date April 19, 2022

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

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Abstract

This quantitative study was conducted to investigate possible relationships between psychological safety, collaborative capacity, and school climate in middle level schools in order to identify specific leadership behaviors to increase collective efficacy. School leaders' knowledge of the positive effect collective efficacy has on student learning is not enough (Donohoo & Katz, 2019; Parrett & Budge, 2020). Leaders must also be aware of functional behaviors to foster collective efficacy, thus increasing student learning (Donohoo & Katz, 2019). Based on the theoretical work of Bandura (2000, 2012), as well as DeWitt (2017), Garmston and Wellman (2013), Hattie (2017, 2019), and Rock (2013), the variables of psychological safety, collaborative capacity, and school climate were investigated. The sample for this study included certified faculty members in middle-level schools containing fifth through eighth grades. A survey was created by the researcher, and data were collected from the sample by *Qualtrics*. Statistically significant relationships were found among all variables, with the exception of autonomy and both collaborative capacity and school climate, indicating specific leadership behaviors to foster collective efficacy among faculty members.

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Chapter One: Introduction

The purposes of public education have changed (United States Department of Education, 2003; Wilkinson-Flicker, 2019). In the beginning, the purpose of public education was to prepare the elite to attend post-secondary education and teach democratic roles and responsibilities (Kober, 2007). The focus has shifted from academic achievements of reading, writing, and arithmetic, to collaboration, critical thinking, creativity, social-emotional learning, communication skills, college and career readiness, and academic success (Arnett, 2018). Leaders must promote a learning environment fostering student success to master the many expectations placed upon current public-school systems (Reeves, 2020).

The research of Hattie (2017) reflected the importance of teacher effectiveness in the success of a student. Additional research has been conducted by Maxwell et al. (2017), DeWitt (2016, 2018), and Gruenert and Whitaker (2015, 2017), investigating the positive effect a school climate has on the success of students. Leadership has evolved with models of instruction focusing on collaboration, communication, and psychological safety (Amanchukwu et al., 2015; Burns, 2017; Edmondson et al., 2019; Lasater, 2016; Rock & Ringleb, 2013). The work of Garmston and Wellman (2013; 2014), as well as Donohoo and Katz (2019), have indicated team productivity and creativity positively impact student achievement.

The ultimate goal of public education is to prepare students for life experiences; therefore, any research into schools having success in this aspect is vital (Reseger, 2020; Rose, 2014; Schleicher, 2018). Descriptions of high-performing schools include success in academic achievement, college and career readiness, family support, providing

resources as needed, hiring and supporting high-quality teachers, as well as strong leadership characteristics (Leithwood & McCullough, 2016; Tucker 2019). Researchers have also written about the positive impact school climate, teacher efficacy, and collaboration have on student achievement and the pursuit of becoming a high-performing school (Maxwell et al., 2017; DeWitt, 2017, 2018; Elgart, 2017; Gruenert & Whitaker, 2015, 2017; Hattie, 2017; Leithwood & McCullough, 2016). It is important for educators to identify the replicable characteristics of high-performing schools, including possible causes of high academic achievement, the development of a well-rounded, high-performing school faculty, and what leader behaviors can facilitate these characteristics (Brown, 2018; Kafele, 2017; Tucker, 2019).

Background of the Study

A partnership between a Blue Valley School in Kansas City and the Center for the Advancement of Reform in Education (CARE) brought about a research foundation to further investigate the relationship of brain research and education (Caufield et al., 2000). The findings of CARE indicate positive, engaging experiences allow learners to retain more information, whereas experiences negative or threatening can jeopardize the learning process (Caufield et al., 2000)

Additionally, authors Garmston et al. (2020) stated, "displaying uncertainties, asking questions, experimenting, seeking help, and requesting feedback are behaviors associated with innovation and high performance" (p. 11). These behaviors are encompassed within the umbrella term of psychological safety, referred to as collaborative freedom by Stanford's Director of Strategy, Outreach, and Innovation, Patty Purpur de Vries (as cited in McKenna & Primeau, 2019. Purpur deVries (2018) offered

three key points under one's sphere of influence moving toward psychological safety in the workplace, including professional fulfillment, contributing to a culture of wellness, and cultivating personal resilience (slide 39). The psychological safety of a team, as described by Edmondson (2011), is an environment in which school faculty members feel free to be their true selves in the team climate, including the free sharing of ideas. Environments in which team members do not feel the freedom to share ideas and learn from mistakes do not allow for in-depth conversations or learning (Martin, 2020).

Leadership styles among high-functioning teams rely heavily on collaboration, including "sharing information and ideas, integrating perspectives, and coordinating tasks" (Edmondson, 2003, p. 2). The feeling of being psychologically safe is imperative for learning, due to the reduced barriers of reactions to a new idea, a mistake, or the discussion of hard topics (Harvey et al., 2019). It is important for educators and leaders to investigate the relationships possibly existing among a culture of psychological safety and collaborative capacity in the workplace (Brown, 2018; DeWitt, 2018; Garmston & Wellman, 2014; Gruenert & Whitaker, 2017; Purpur de Vries, 2018).

Hattie (2020) discussed several strategies leading toward collaborative capacity, which indicate a year or more of growth per input. An assigned score of .4 indicates the "hinge-point," indicating a year of growth (Hattie, 2020, p. 13). Kraft (2021) explained the term *effect size* as one that measures the correlation between two concepts. Self-efficacy, an imperative concept to grasp on the way to understanding collective capacity, has an effect size of 0.92 (Hattie, 2017, School section). The effect size of collective teacher efficacy is 1.57, which is comparable to over three years of student growth (Hattie, 2017, School section). Collaborative leadership behaviors positively impact the

collaborative capacity of teachers, as they are more engaged in collaboration when they "feel valued by the leader" (DeWitt, 2018, p. 62). According to DeWitt (2018):

> . . . in order for collaboration to be real and for teachers, students, and parents to feel as though they are a part of a school climate in which they are valued, collaboration needs to include times where we not only learn from one another but also challenge each other's thinking. (p. 14)

Through impactful collaboration, teams hold a higher belief in future success (Donohoo & Katz, 2019). After experiencing success, high-performing teams do not remain static, but rather use previous successes to drive new ideas and experiences (Donohoo & Katz, 2019).

Successful experiences, or mastery moments, are described by Pink (2009) as an element of meaningful motivation. According to Pink (2014), long-term, sustainable, more "complex, creative tasks" are more successful with an engaging, intrinsic motivation and mindset (as cited in Azzam, 2014, para. 1). Cultivating a culture of a high-performing, student-centered faculty is essential to experience growth (Rodman & Thompson, 2019).

Authors DeWitt and Slade (2014) defined a positive school climate as "an environment in which all people—not just adults or educators—are engaged and respected and where students, families, and educators work together to develop, live, and contribute to a shared school vision" (p. 9). Teacher voice and challenging conversations are imperative to fostering an environment of positive climate among team members (DeWitt, 2018; Garmston & Wellman, 2013, 2014). Epitropoulos (2019) described several characteristics of a toxic school culture implicating the importance of a team

climate even more, including hostile team relationships, a lack of honest communication, "punishment instead of recognition," and a lack of safety in regards to sharing thoughts and ideas (p. 8). Mastery and achievement cannot take place without effective communication paving the way for educators to tackle issues and support one another (DeWitt, 2018; Garmston & Wellman, 2013, 2014).

Theoretical Framework

There is a connection between student learning and the collective efficacy of teachers, as well as a connection between collective efficacy to psychological safety, collaborative capacity, and a positive school climate (Bandura, 2000, 2005, 2012; Berg, 2020; DeWitt, 2017; Donohoo & Mausbach, 2021; Donohoo et al., 2018; Donohoo et al., 2020; Garmston & Wellman, 2013; Gruenert & Whitaker, 2015, 2017; Harvey et al., 2019; Hattie, 2017, 2019, as cited in Waack, 2018). Investigating the relationships among these concepts may reveal high-impact, overlapping elements to guide the intentions and behaviors of school leaders (Donohoo et al., 2018; Modoono, 2017; Zepeda et al., 2019).

The theoretical framework of this study was based on Bandura's social cognitive theory (1977, 1999, 2000, 2005, 2012). Within this theory lies the belief people are not simply products of life events but active participants in directing their future (Bandura, 1999, 2000). Self-efficacy is a significant component of this theory; however, the theory is largely centered around the collective efforts of people (Bandura, 1999, 2000; Donohoo & Katz, 2019; Donohoo et al., 2018).

According to Bandura (2000), "perceived collective efficacy fosters groups' motivational commitment to their missions, resilience to adversity, and performance accomplishments" (para. 1). Performing with high levels of collective efficacy, as well as

the belief more can be accomplished through the collaborative efforts of a team working toward a common goal, ignites a cycle in which group members believe in their efforts, experience accomplishments, then desire the needed work to put in toward future goals (Berg, 2020).

The collaborative efforts of a team working together are a bi-product of a team of teachers with high collective efficacy (Bandura, 1999; Berg, 2020; Donohoo et al., 2018; Donohoo & Hite, 2021; Donohoo & Katz, 2019; Eels, 2011; Goodwin & Shebby, 2020). The right kind of leadership support and focus leads to the increased capacity for a group to collaborate (Donohoo et al., 2018; Modoono, 2017; Zepeda, 2019; Zepeda et al., 2020). A group's perceived collective efficacy is related to the group's connection to each other, particularly in collaborative efforts (Goodwin & Shebby, 2020). This requires a high level of trust, often found when a team of teachers has high levels of collective efficacy, as well as collaborative capacity (Berg, 2020; Donohoo & Katz, 2019; Donohoo et al., 2018; Edmondson, 2012; Edmondson & Roloff, 2009; Hart, 2020; Kim et al., 2020; Ma & Marion, 2021; Modoono, 2017).

Once a culture of trust is established, teachers are "willing to take the risks that new learning requires" (Modoono, 2017, para. 7). Trust is a pivotal concept associated with psychological safety, especially when psychological safety is desired within a team (Delizonna, 2017; Edmondson & Roloff, 2009). Edmondson (2012) described psychological safety as a concept grounded in trust and respect, fostering a collaborative environment in which equal voice and experiences are shared more freely.

Rock (2009) identified five elements of psychological safety using the SCARF model. The five elements included in the SCARF model are status, certainty, autonomy,

relatedness, and fairness (Rock, 2009). These same elements, along with characteristics found in schools performing with high levels of collective efficacy and collaborative capacity, are oftentimes associated with schools associated with a positive school climate (DeWitt, 2017; Donohoo et al., 2018; Gruenert, 2017; Jackson, 2020; Maxwell et al. 2017; National School Climate Council, 2012; Reynolds et al., 2017; Whitaker, 2013).

A school's climate encompasses the daily "quality and character of school life" (National School Climate Center, 2007, para. 1) and can affect many things, including a group's collaborative efforts and student learning (Fisher & Frey, 2018; Frey et al., 2020). According to Gruenert and Whitaker (2015), a school's climate can also demonstrate the values of its stakeholders, staff, faculty, and students (p. 11). Jackson (2020) stated, "a school's core values are terms of practice that clearly define how everyone will work together to achieve the school's vision and carry out its mission" (para. 6). Several descriptors and characteristics often listed when describing schools with a positive climate are also the characteristics listed when describing systems with teams of teachers with high collective efficacy (Bandura, 2005; DeWitt, 2017; Donohoo et al., 2018).

Student learning is connected to the collective efficacy of teachers (Berg, 2020; Donohoo et al., 2018; Hattie, 2017, 2018, as cited in Waack, 2019). Previous research also connects collective efficacy to psychological safety, collaborative capacity, and school climate (Bandura, 2000, 2012; DeWitt, 2017; Garmston & Wellman, 2013; Gruenert & Whitaker, 2015, 2017; Harvey et al., 2019; Hattie, 2017, 2018). In spite of what is known about these relationships, little research is available supporting specific leadership intentions to increase collective efficacy (Donohoo & Katz, 2019; Parrett & Budge, 2020).

Statement of the Problem

Explored in the study were the leadership behaviors known to increase teacher efficacy, which promotes student achievement. Educational leaders' knowledge of the positive relationship between collective efficacy and student learning is not enough (Donohoo & Katz, 2019; Parrett & Budge, 2020). School leaders must be aware of specific leadership behaviors to put into practice, thus developing increased collective efficacy among school faculty and positively impacting the learning of students (Donohoo & Katz, 2019). There is a lack of previous research showing specific connections between psychological safety, collaborative capacity, and school climate, which independently have been connected to collective efficacy and student learning (Bandura, 2000, 2012; DeWitt, 2017; Donohoo & Katz, 2019; Garmston & Wellman, 2013; Gruenert & Whitaker, 2015, 2017; Harvey et al., 2019; Hattie, 2017, 2019; Parrett & Budge, 2020).

Purpose of the Study

Research shows high-quality leaders foster high-quality teachers, who, in turn, foster student learning (Hattie, 2017, 2018; Tucker, 2019). The purpose of this study was to identify leadership behaviors to assist school leaders to increase collective efficacy and foster a successful learning environment (Donohoo & Katz, 2019, 2020; Donohoo et al., 2018; Jenkins et al., 2018; Parrett & Budge, 2020). The variables of psychological safety, collaborative capacity, and school climate were examined.

Public education is centered on student learning (Donoghue & Hattie, 2016; Pollock & Tolone, 2020). High-quality teaching, a culture of collaboration, and high levels of collective efficacy have a positive impact on student learning, therefore creating

successful school environments (Donohoo & Mausbach, 2021; Donohoo et al., 2018; Hattie, 2017, 2018; Parrett & Budge, 2020). According to Donohoo et al. (2018), team members' confidence in each other's abilities and their belief in the impact of the team's work are key elements setting successful school teams apart (para. 13). School leaders play a major role in increasing collective efficacy within their teams, therefore significantly impacting student learning (Donohoo et al., 2018; Parrett & Budge, 2020).

To round out the equation for successful schools and increased collective efficacy, school teams need high-quality leaders and teachers (Tucker, 2019). According to Tucker (2019), "high-quality leaders attract and support high-quality teachers and provide them with the resources and tools they need to improve their practice continually" (p. 40). Once educators are recruited and collaborative teams established, a leadership focus is needed to better understand the process of increasing collective efficacy to increase overall student success (Donohoo & Katz, 2019; Tucker, 2019).

Research Questions and Hypotheses

The following research questions and hypotheses guided this study:

1. What is the relationship between each element of psychological safety and collaborative capacity in middle-level schools?

$H1_0$: There is no relationship between each element of psychological safety and collaborative capacity in middle-level schools.

$H1_a$: There is a relationship between each element of psychological safety and collaborative capacity in middle-level schools.

2. What is the relationship between each element of psychological safety and school climate in middle-level schools?

$H2_0$: There is no relationship between each element of psychological safety and school climate in middle-level schools.

$H2_a$: There is a relationship between each element of psychological safety and school climate in middle-level schools.

3. What is the relationship between overall psychological safety and collaborative capacity in middle-level schools?

$H3_0$: There is no relationship between overall psychological safety and collaborative capacity in middle-level schools.

$H3_a$: There is a relationship between overall psychological safety and collaborative capacity in middle-level schools.

4. What is the relationship between overall psychological safety and school climate in middle-level schools?

$H4_0$: There is no relationship between overall psychological safety and school climate in middle-level schools.

$H4_a$: There is a relationship between overall psychological safety and school climate in middle-level schools.

5. What is the relationship between collaborative capacity and school climate in middle-level schools?

$H5_0$: There is no relationship between collaborative capacity and school climate in middle-level schools.

$H5_a$: There is a relationship between collaborative capacity and school climate in middle-level schools.

Significance of the Study

Student success is the overall goal of public education, and school faculty members strive to make student-centered decisions on a daily basis (Amanchukwu et al., 2015; Arnett, 2018). With the impact a teacher can have on student learning (Hattie, 2017), it is important to investigate ways to equip educators to be at their best to provide the highest education to a student. It is also imperative for leaders to foster a learning environment allowing teachers freedom in the classroom for autonomy, creativity, and quality instruction (Amanchukwu et al., 2015; Ebersold et al., 2019).

Considering the previous research conducted on school climate (DeWitt, 2017, 2018; DeWitt & Slade, 2014; Gruenert & Whitaker, 2015, 2017), psychological safety (Rock & Ringleb, 2013), collaborative capacity (Bandura, 2012; Garmston & Wellman, 2013), along with Hattie's (2017) research regarding teacher effect size in the classroom, the importance of this study arises. Deutsch, a professor and director of Youth-Nex stated, "More than a quarter of middle school students in America say that a teacher or school counselor has had an indelible impact on their success" (as cited in Breen, 2019, para. 7). Investigating the relationships among the research variables in the context of a middle school environment may provide administrators with tools to cultivate an environment to support the specific age group of students who are navigating the path from adolescence to adulthood.

School leaders could potentially use the information gained in this study to make educated decisions regarding the improvement of collective efficacy, climate, and the effectiveness of their leadership behaviors and decisions, as well as how to encourage teacher voice from all team members (Jensen & Ratcliffe, 2020; Quaglia et al., 2020;

Zimmerman et al., 2020). Leaders may also gain an understanding of the effects the research variables could have on the concept of collaborative leadership, which is described by DeWitt (2017) as "[the] purposeful actions we take as leaders to enhance the instruction of teachers, build deep relationships with all stakeholders, and deepen our learning together" (paras. 3–4).

Definition of Key Terms

For the purposes of this study, the following terms are defined:

Climate

Reynolds et al. (2017) defined climate as "a broad, multi-dimensional concept that refers to social aspects of the learning environment including school members' interactions and relationships, shared values and norms, and the personal development and growth of the members" (p. 80).

Collaboration

Powell (2004) defined collaboration as what "takes place when members of an inclusive learning community work together as equals to assist students to succeed in the classroom" (p. 3).

Collaborative Capacity

Hocevar et al. (2007) defined collaborative capacity as "the ability of organizations to enter into, develop, and sustain inter-organizational systems in pursuit of collective outcomes" (p. 8).

Collaborative Culture

Garmston and Wellman (2013) described collaborative cultures as "the work of leaders who realize that a collection of superstar teachers working in isolation cannot

produce the same results as interdependent colleagues who share and develop professional practices together" (p. 16).

Collaborative Leadership

DeWitt (2017) referred to collaborative leadership as "the purposeful actions we take as leaders to enhance the instruction of teachers, build deep relationships with all stakeholders, and deepen our learning together" (paras. 3-4).

Collective Efficacy

Collective efficacy refers to a shared belief within a group regarding their capability to carry out goals, ultimately leading toward student success (Bandura, 1997; Berg, 2020; Donohoo & Katz, 2019; Donohoo et al., 2018; Goodwin & Shebby, 2020, 2021; Preston & Donohoo, 2021).

Culture

Wagner (2006) described school culture as "the shared experiences both in school and out of school (traditions and celebrations) that create a sense of community, family, and team membership" (p. 1).

High-performing Schools

A high-performing school is described by several characteristics supporting high academic achievement and student success. The nine characteristics of high-performing schools, according to the research of Shannon and Bylsma (2007), include:

> . . . a clear and shared focus, high standards and expectations for all students, effective school leadership, high levels of collaboration and communication, curriculum, instruction, and assessments aligned with state standards, frequent monitoring of learning and teaching, focused professional development, a

> supportive learning environment, and high levels of family and community involvement. (p. 1)

Further research by Shannon and Bylsma (2007) provided additional elements of high-performing schools, including:

> . . . effective processes for improving schools, expanded perspectives on effective leadership, relational trust, quality instruction, grading practices, and monitoring, professional learning communities, cultural competence and culturally responsive teaching, family and community engagement in schools, high school improvement, district improvement, and a need-based allocation of resources. (p. 2)

Middle-level School

The Internal Affairs Office of the United States Department of Education (2008) defined a middle school as a building serving "pre-adolescent and young adolescent students between grades five and nine" (p. 2). According to the Association for Middle-Level Education, the typical configuration of a middle-level school includes ages 10-14 in grades five through eight (Medford, 2014).

Motivation

Rock and Tang (2013) related the concept of motivation to a term referred to as "workplace engagement" (p. 352). The authors also stated, "The neural basis of engagement is closely linked to (a) reward/threat response," and "the neural basis of engagement can be defined by the average levels of activation of the brain's reward and self-regulation circuitry when people are thinking about or participating in their work" (Rock & Tang, 2013, pp. 352—–353).

Psychological Safety

Edmondson (2003) stated psychological safety "describes individuals' perceptions about the consequences of interpersonal risks in their work environment" (p. 4).

SCARF Model

Rock (2013) summarized the SCARF model as "an easy way to remember and act on the social triggers that can generate both the approach and avoid responses" previously described as one of the two concepts derived from social neuroscience research (p. 311). The five elements included in this model are status, certainty, autonomy, relatedness, and fairness (Weller, 2018). Status refers to the human perception of how social experiences can either raise or lower another's status with others (Rock, 2013). Certainty refers to one's confidence in a surrounding environment (Rock, 2013). Autonomy is the degree of control within those surroundings, while relatedness refers to the quality of relationships in one's environment, drawing from the concepts of trust and empathy (Rock, 2013). Lastly, fairness encompasses the perception of fair versus unfair events in an environment, comparing closely with trust versus mistrust of others (Rock, 2013).

Social Neuroscience

Rock (2013) stated, "Social neuroscience explores the biological foundations of the way humans relate to each other and to themselves and covers diverse topics that can be operationalized and unambiguously tested to different degrees" (p. 311).

Delimitations, Limitations, and Assumptions

The scope of the study was bound by the following delimitations:

Time Frame

The research took place during the spring 2021 semester.

Location of the Study

The study was conducted in a purposely selected southwest Missouri school district. Faculty members from middle-level buildings within the district completed the survey. According to the Missouri Department of Secondary and Elementary Education, these particular buildings within the school district housed over 50 certified faculty members and over 1,400 students combined at the time of this study.

Sample

A case study was conducted in two middle-level school buildings within a Southwest Missouri school district containing fifth through eighth grades. According to Hayes et al. (2015), "the goal of such a study is to increase understanding of the studied phenomenon, either in the context of a specific instance or generalized over a population" (p. 4). A survey was given to the entire population of faculty members at both school buildings.

A minimum sample size of 30 faculty members was needed for the purpose of this study to meet a confidence interval of 95%. According to Bluman (2018), "approximately 95% of the sample means fall within 1.96 standard deviations of the population mean if the sample size is 30 or more, or if σ is known when n is less than 30 and the population is normally distributed" (p. 374).

Criteria

Participants selected for the study were certified faculty members working with middle-level students, fifth through eighth grades.

The following limitations were identified in this study:

Sample Demographics

The sample was limited to middle-level certified faculty members in a school district located in Southwest Missouri. Two school buildings within the district house middle-level students. The middle school houses grades five and six, and the junior high houses grades seven and eight.

Instrument

Survey items and individual sections of the survey were created and organized by the researcher. Those completing the survey did so based on their perceptions. Human perception can alter for a number of reasons, including outside factors altering one's well-being, possibly during the time frame in which the survey is completed (Ramanathan, 2018). According to Rock (2013), one's brain health can be affected unless the presence of a mental health diet exists. This is referred to as a healthy mind platter, which includes "the neuro-cognitive benefits of seven key activities: sleep time, playtime, time-in, downtime, connecting time, physical time, and focus time" (Rock, 2013, p. 130). According to Friedman et al. (2020), a lack of awareness exists pertaining to what it takes to maintain brain health, as well as the connection of brain health to mental and emotional health.

Without a balance of these variables, a person's responses could be affected. These "threats" to a study's validity, as referred to by Campbell and Stanley (1963, p. 1) include the concepts of "maturation" and "history" (p. 5), described as affecting the validity of pretest/post-test research, but could apply to single survey research, as well. According to the authors, "history" refers to "specific events" occurring in a research

subject's life, possibly altering responses, as well as "maturation" to functional concepts possibly altering responses, such as hunger and fatigue (Campbell & Stanley, 1963, p. 5).

Bias

Certified faculty members completing the survey may have had a bias regarding the collaborative capacity of their building, as well as the existing school climate and overall culture.

The following assumptions were accepted:

1. Survey questions were answered honestly, reflectively, and voluntarily.
2. Survey answers were representative of fifth through eighth-grade faculty members in school districts similar to size and organization.

Summary

The background and theoretical framework related to the study were described in Chapter One, as well as the problem, purpose, and significance. Chapter Two includes a review of the relevant literature associated with the variables of psychological safety, collaborative capacity, and school climate. Chapter Two also includes a review of literature regarding concepts related to each variable, such as collective efficacy, neuroscience, neuroleadership, collaboration, and school climate.

Chapter Two: Review of Literature

The role of public education has always been vital to society (Kober, 2007; Reseger, 2020; Teachers College, 2018; Winthrop, 2020. Kober (2007) outlined six main themes of public education, including providing "universal access to free education," guaranteeing "equal opportunities for all children," unifying a "diverse population," preparing "people for citizenship in a democratic society," preparing "people to become economically self-sufficient," and improving "social conditions" (p. 7). Some schools are exceeding this mission, while others are struggling. At the hub of a school's success is the leadership of the teachers and ultimately administration (Goodwin & Davis, 2021). To best meet the needs of students entering today's public schools, educators and school leaders must foster an environment promoting student success, which is influenced greatly by educators (Hattie, 2017).

The purpose of this study was to investigate the relationships among psychological safety, school culture, and collaborative capacity. School leaders could potentially use the information gained in this study to make educated decisions regarding their building's culture, climate, and leadership behaviors, as well as how to cultivate teacher autonomy and increase student learning with increased levels of collective efficacy among faculty members. In public education, school leaders are in a position to foster a positive school climate allowing for such autonomy, as well as collaborative efforts and teacher growth (Sterrett & Hill-Black, 2020, para. 1). The lack of previous research and possible connection among the chosen variables can potentially aid in this process of effective leadership.

Theoretical Framework

The theoretical framework of this study is based on Bandura's social cognitive theory. (1977, 1999, 2000, 2005, 2012). Bandura (1999, 2000) believed people were actively involved in the direction of the future rather than a product of previous life events. Collective efficacy, however, is "not simply the sum of the efficacy beliefs of the individual members" (Bandura, 1999, p. 53). Rather, it is a collective effort toward the increase of student success, affirmed and strengthened when success is attained (Bandura, 1997; Berg, 2020; Donohoo et al., 2018).

Efforts involved in a group's collective efficacy are largely impacted by the capacity to collaborate (Donohoo & Katz, 2019). Collaborative capacity is dependent upon a group's connection to one another and the levels of trust among faculty members, as well as faculty members' belief in the group's ability to create and meet goals (Edmondson, 2012, Goodwin & Shebby, 2020). Once trust is established, a shared belief is attained, and success has occurred, the group is motivated to continue efforts toward future aspirations (Donohoo et al., 2018; Modoono, 2017)

The risks "new learning requires" among group members (Modoono, 2017, para. 7), can be related to the overall psychological safety of a group (Edmondson & Roloff, 2009). Edmondson (2012) first described psychological safety as a concept centered around trust and respect, leading toward high levels of collaborative capacity. The elements of psychological safety were further described by Rock (2008, 2009), with the SCARF model, including the concepts of status, certainty, autonomy, relatedness, and fairness. These same descriptors can be found in schools with high levels of collective efficacy and collaborative capacity, as well as a positive school climate (DeWitt, 2017;

Donohoo et al., 2018; Gruenert, 2017; Jackson, 2020; Maxwell et al., 2017; National School Climate Council, 2012; Reynolds et al., 2017; Whitaker, 2013).

A school's climate is often associated with the core values upon which the school actively functions in day-to-day operations (Jackson, 2020). The climate of a school was described by Frey, Smith, and Fisher (2020) as "how it feels to be a part of the classroom community," many times related to a student's perception of how connected he or she feels to both peers and adults within the school community (para. 2). Climate can affect student learning and collaboration, as well as shared values among students and faculty members (Fisher & Frey, 2018; Frey et al., 2020; Gruenert & Whitaker, 2015). Several synonymous terms are oftentimes listed when describing schools with a positive climate, as well as those with high levels of collective efficacy and collaborative capacity (Bandura, 2005; DeWitt, 2017; Donohoo & Katz, 2019; Donohoo et al., 2018).

The value of conducting this study among faculty members working with middle-level students lies in existing research on specific struggles related to middle-level neurological and social development, as well as the previously mentioned importance of a teacher's effect on the success of students (Anfara & Caskey, 2014; Hattie, 2017, 2018; Paris, 2019). Middle-level students often struggle with impulse control, emotional regulation, and problem-solving, as well as stress, self-control, and risk management due to neurological developments in the limbic system and prefrontal cortex (Anfara & Caskey, 2014; Paris, 2019). Several mental health disorders are discovered during middle-level years, such as those connected to anxiety, oppositional defiance, mood, and conduct (Paris, 2019).

Due to previous research showing the influence of collective efficacy on student success (Hattie, 2017, 2018), value can be found by completing this study among those who work, specifically in the crucial developmental years of middle-level students (Deutsch, as cited in Breen, 2019). One author stated, "too often principals focus only on student learning—and that's an oversight. Of course, the purpose of school is for students to learn, but students' learning will be constrained unless their teachers are also learning" (Hoerr, 2016, para. 8). According to Renga et al. (2020), school leaders “supporting teachers as whole persons is vitally important for their well-being and ability to serve students,” particularly as faculty return to schools with additional stress following the COVID-19 pandemic (para. 4).

The theoretical framework was used to guide the exploration of relationships among the research variables. There is a connection between student learning and the collective efficacy of teachers, as well as a connection between collective efficacy to psychological safety, collaborative capacity, and a positive school climate (Bandura, 2005, 2012; Berg, 2020; DeWitt, 2017; Donohoo et al., 2018; Garmston & Wellman, 2013; Gruenert & Whitaker, 2015, 2017; Harvey et al., 2019; Hattie, 2017, 2018, 2018, as cited in Waack, 2018). By investigating the relationships among these concepts, the researcher hopes to discover high-impact, overlapping elements to guide the intentions and behaviors of school leaders (Donohoo et al., 2018; Modoono, 2017; Zebeda et al., 2020).

Collective Efficacy

Collective efficacy stems from the work of Bandura's social cognitive theory (1997, 1999, 2000, 2005). The premise of social cognitive theory lies in the belief

individuals are active participants in their lives, rather than a bi-product of life events (Bandura, 1999). According to Bandura (1999), “the human mind is generative, creative, proactive, and self-reflective not just reactive” (p. 5). The concept of self-efficacy within Bandura’s work with the social cognitive theory describes an individual’s belief in an ability to demonstrate control over life rather than being a product of life events (1999, p. 46). Bandura (1997) furthered the discussion regarding individual perceived self-efficacy by identifying four information sources affecting self-efficacious behaviors: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal (p. 195).

The first self-efficacy source is performance accomplishments. This is largely based on what Bandura (1997) refers to as “personal mastery experiences,” good or bad (p. 195). Vicarious experiences, the second source, are based on observing others’ performances and relating those experiences to future personal performances (Bandura, 1997). Verbal persuasion, the third source of information, can be described as lifting a colleague up or encouraging future success within a colleague Bandura, 1997). This is often not as effective as personal performance accomplishments but still plays a vital role in self-efficacious behavior (Bandura, 1997). The fourth and final source is emotional arousal (Bandura, 1997). One’s reactions to a negative situation can provide an individual with information on how to cope and display efficacious behavior in future stressful occurrences (Bandura, 1997). If handled well, one can expect to handle negative situations positively as they arise (Bandura, 1997). Fear about negative reactions, on the other hand, can increase anxiety and lessen one’s confidence (Bandura, 1997).

Individual perceived self-efficacy can affect both the environment one challenges him or herself with, based on the strength of the individual's perceived ability to handle various situations and challenges, as well as persistence and effort in the midst of challenging situations (Bandura, 1977; Egan et al., 2021). A stronger level of self-efficacy indicates an increased effort in a task (Bandura, 1977).

Teacher self-efficacy is described as "a measure of the teacher's belief that he/she can affect student success" (Corry & Stella, 2018, p. 1). The concept of self-efficacy applied to a group setting is collective efficacy (Donohoo & Hite, 2021). In the educational setting, a group's perceived collective efficacy lies in a "faculty's shared belief that through their collective action they can positively influence student outcomes" (Donohoo & Hite, 2021, para. 5). Collaborative efforts exceed individual accomplishments, seen in the existence of many goals only attained by a "socially interdependent effort" (Bandura, 2005, p. 26).

Hattie's research (2018), involving over 25 years of conducting over 95,000 studies, ranked the effect sizes of a variety of strategies in terms of the effect each had on student learning (para. 1). With a score of .4 representing a year's worth of growth, the collective efficacy of teachers was found to have an effect size of 1.57, representing almost four years of growth within a year of schooling (Hattie, 2018, para. 2). Hattie's research places collective efficacy at three times greater effect size than socioeconomics, home-life, and the intrinsic motivation of the student him or herself, and more than two times the effect size of past school success (Donohoo et al., 2018; Hattie, 2017).

School cultures with high expectations for student learning rather than "instructional compliance" are found when high levels of collective efficacy are in place

(Donohoo et al., 2018, para. 4). According to Goddard et al. (2000), increased collective efficacy can help give an understanding to what sets successful schools apart regarding student achievement. Donohoo and Katz (2019) found collective efficacy to increase through a cycle of teachers improving their practice, followed by student success, which further increased the collective efficacy of faculty members. Along with the experience of success, faculty members working together toward student learning must have the confidence they have the ability to meet student needs (Donohoo & Hite, 2021). A high level of confidence in one's team, along with the belief a group can collectively accomplish more, are "key elements that set successful school teams apart" (Donohoo et al., 2018, para. 13). Zimmerman et al. (2020) indicated once teachers realize the level of expertise within their team, “they move to a new level of collective efficacy,” shifting from a culture of “scarcity—limited professional collaboration—to a culture of abundance” (p. 179).

According to Goddard et al. (2000), teacher collective efficacy is a continued work in progress and can even ebb and flow throughout a school day depending on situations arising or team members’ confidence with a particular subject. Goddard et al. (2000) added to Bandura’s work of identifying sources of information for self-efficacy by adding elements related to collective efficacy: analysis of the teaching task and assessment of teaching competence. The first element, analysis of the teaching task, is described by Goddard et al. (2000) as faculty members assessing the need for teacher engagement. This analysis provides a collective look at a variety of elements affecting the possibility of success within a school, including student motivation, available supplies, community support, and even the physical, tangible aspects of the school building

(Goddard et al. 2000). The second element, assessment of teaching competence can best be described as faculty judgment of team members competency (Goddard et al. 2000). Both elements work together, encouraging teacher collective efficacy (Goddard et al. 2000).

Motivation and Mindset

Motivation is a topic researchers have been studying for decades, with a concept Pink (2009) referred to as Motivation 2.0. This system utilizes rewards and punishments to motivate employees (Pink, 2009). It is a system including two concepts: rewarding a behavior will cause an increase in the behavior, and punishing a behavior will cause a decrease (Pink, 2009). Pink (2009) suggested this system has been successful for years and still has a place in some work environments; however, as educators move into an era with jobs allowing tasks to be more creative and encouraging autonomy, this system of extrinsic motivation does more harm than good (Pink, 2009).

Neuroscientists tend to be in opposition to psychologists on the topic of motivational systems and the use of rewards (Hidi, 2016). Hidi (2016) stated this type of reward system goes along with biological aspects of the human brain and behavior. According to Pink (2009), "Our current operating system has become far less compatible with, and at times downright antagonistic to: how we *organize* what we do; how we *think about* what we do; and how we *do* what we do" (p. 20). Even goal-setting can be harmful to job performance (Healy & Niven, 2016). Self-directed goals are a positive step toward high performance; however, goals set by others, such as a boss or supervisor, can have a negative impact on job performance, possibly due to a limited focus on the outcome (Pink, 2009).

Other harmful behaviors potentially begin with extrinsic motivators, such as the encouragement of unethical behavior, the stifling of creativity, and the encouragement of short-term thinking (Pink, 2009). In contrast, leaders are encouraging creativity within their employees and providing opportunities for autonomy and critical thinking in the workplace, which are skills highly sought after in the 21st-century workforce (Urbani et al., 2017). According to Gardner (2008), these types of 21st-century tasks are seen in the cultivation of five distinctive minds in which individuals can cultivate and grow toward a deeper development of oneself, including the disciplined mind, the synthesizing mind, the creating mind, the respectful mind, and the ethical mind, paying particular attention to the first three minds mentioned.

Gardner's concept of the Five Minds coincides with Pink's concept of Motivation 3.0, which offers an alternative to Motivation 2.0. According to Pink (2009), "When contingent rewards aren't involved, or when incentives are used with the proper deftness, performance improves and understanding deepens" (p. 57). Ryan and Deci (2017), behavioral scientists who completed research regarding intrinsic motivators, created the self-determination theory (SDT), which includes three satisfactions essential for "intrinsic motivation, internalization, and social integration," which include "feeling competence, autonomy, and relatedness" (p. 5). This theory acknowledges rewards can be harmful when used for motivational purposes and therefore encourages the creation of work environments for the human needs of competence, autonomy, and relatedness to thrive (Pink, 2009).

Intrinsic motivation is not a concept a person is simply born with, yet some things to be cultivated within an individual, given the right mindset and work environment

(Vansteenkiste et al., 2018). Dweck and Eaton (2017) related this concept to the field of sports. Dweck and Eaton (2017) argued when most people see the big difference between average athletes and champions in their talent, it is seen in their mindset. Dweck (2017) outlined two mindsets to determine the level of one's success: a fixed mindset and a growth mindset. The authors provided this explanation of the two mindsets:

> Some hold a fixed mindset, in which they see abilities as fixed traits. In this view, talents are gifts—you either have them or you don't. Other people, in contrast, hold a growth mindset of ability. They believe that people can cultivate their abilities. In other words, they view talents as potentialities that can be developed through practice. It's not that people holding this mindset deny differences among people. They don't deny that some people may be better or faster than others at acquiring certain skills, but what they focus on is the idea that everyone can get better over time. (Dweck & Eaton, 2017, p. 1)

According to Milkman (2021), a blank slate is vital to behavioral changes. This is often accompanied by a true change in one's situation, or a life event altering present circumstances, leaving behind habits and previous thought patterns (Milkman, 2021). New patterns of behavior can arise, particularly with the concept of timing (Milkman, 2021). Milkman (2021) refers to this as the fresh start effect, which applies the concept of a blank slate to particular times in people's lives in which change is natural due to the timing of making a change. For educators, the start of a new school year is an example of a time in which change and the motivation to change are more prevalent (Milkman, 2021).

Social-Cognitive Neuroscience

According to Cacioppo and Cacioppo (2020), the human brain is "the central organ of perceiving, identifying, and adapting to social and physical stressors" and has "evolved to determine what is threatening to it, and to respond or adapt to the potential threat" (p. 6). Social-cognitive neuroscience has investigated concepts such as social pain and social living (Kolb et al., 2019). Discoveries have been made linking the same brain circuits handling physical pain as those handling emotional or social pain (Lieberman & Eisenberger, 2015). The connection between physical and emotional pain is due to both utilizing the same areas of the brain, including the interplay between the areas interpreting touch and other sensations, such as the somatosensory cortex, with areas controlling emotions and responses to stress, such as the amygdala, hypothalamus, and anterior cingulate gyrus (Harvard Health Publishing, 2019). Additionally, there are neurotransmitters involved, which aid in communicating pain to both the brain and nervous system (Harvard Health Publishing, 2019).

Cacioppo and Cacioppo (2020) challenged the basic connection between social and physical pain in their research. After further explanation, however, they revealed it is specifically social pain from a feeling of rejection seen differently on brain imaging as compared to brain reactions from one's perception of social isolation (Cacioppo & Cacioppo, 2020). The difference appears to be in the relationship between the rejection and feeling of isolation (Cacioppo, 2020). If the rejection is from someone close to the person experiencing the negative social interaction, the brain reacts in the same areas as physical pain (Cacioppo, 2020). If the rejection is from a stranger, the brain images show reactions in a different area of the brain (Cacioppo & Cacioppo, 2020; Woo et al., 2014).

In a team setting where faculty members work closely with one another, the physical reaction occurring from what is social isolation, or rejection from a close relationship, does ignite identical areas in the brain as physical pain (Cacioppo & Cacioppo, 2020). Cacioppo and Cacioppo (2020) also found reactions to "psychosocial stress, operating through the brain's perception of the meaning of events," or "a person's perceptions of his or her close relationships may impact inflammation and immunity" (p. 15).

Eisenberger and Lieberman (2013) described the neuro-systems in the brain connected with physical pain, including three regions in the cortex. First is the somatosensory cortex, as mentioned above, which interprets the location of the body experiencing pain (Eisenberger & Lieberman, 2013). Next is the insula, which responds to the pain itself as well as provides general information to the brain regarding the body, and finally, the dorsal anterior cingulate cortex, which is connected to the actual discomfort the pain has caused physically (Eisenberger & Lieberman, 2013). This last section of the cortex, known as the dACC, is of particular interest in the connections seen between the brain's response to physical versus social pain, based on specific research first conducted in monkeys in 1982, then repeated with a human experiment in 2003 (as cited in Eisenberger & Lieberman, 2013). Using a functional magnetic resonance imaging study (fMRI), researchers looked at social exclusion specifically looking at the dACC (Eisenberger & Lieberman, 2013). Utilizing different subjects across a college campus, researchers conducted a virtual game between the participants in which the one subject, along with two virtual subjects, played a game of catch (Eisenberger & Lieberman, 2013). After a while, the two virtual players were programmed to only throw the ball to each other, excluding the human subject (Eisenberger & Lieberman, 2013).

When the game was over and the various human subjects came out of the scanner, the researchers heard language, such as “I felt rejected” and “meaningless” (Eisenberger & Lieberman, 2013, p. 304). Brain scans of the dACC showed more increased activity in participants upon exclusion than inclusion, as well as increased activity in participants who indicated negative emotions while being excluded (Eisenberger & Lieberman, 2013). There was also a section of the brain that showed regulation of the amount of social pain, known as the right ventrolateral prefrontal cortex, of RVLPF (Eisenberger & Lieberman, 2013). The more active this region of the brain was during the social rejection, the better the participant could handle negative feelings and emotions (Eisenberger & Lieberman, 2013).

Researchers Chester et al. (2016) found when an individual’s social pain is experienced, there is an increased desire to connect socially, which provides an opportunity for healing. This type of research is significant when studying human behavior and social neuroscience due to similarities between human and animal brains, making “animal models an important source of information about brain structures and brain function” (Capoccio & Capoccio, 2020, p. 10). Cacioppo and Cacioppo (2020) pointed out that the two hemispheres in the human brain have been found to separate human behavior from animal behavior, and the left hemisphere of the brain is how one “interprets events in a way that forms a coherent narrative” (p. 12). The problem with one’s interpretation of events is the potential of the interpretation to create a narrative inconsistent with the reality of a situation (Cacioppo & Cacioppo, 2020).

In contrast, looking at the positives of social pleasure, the same type of findings was discovered within the brain (Eisenberger & Lieberman, 2013). According to

Eisenberger and Lieberman (2013), research has discovered the brain can react to social rewards just as strongly as it can to a tangible reward, such as money. Through this study, along with others investigating responses to the concepts of fair versus unfair, social reputation, and even the feeling of giving versus receiving, researchers have found "bringing out the best in people in the workplace depends at least as much on optimizing a person's social and emotional well-being as it does on those cognitive processes" of the parts of the brain other neurosciences focus on, such as math and reasoning" (Eisenberger & Lieberman, 2013, p. 308). In New York City, health care administrators have seen the need for the combination of physical and emotional well-being firsthand due to the COVID-19 pandemic (Ripp et al. 2020). A major factor in the emotional health of healthcare workers through the pandemic was described through feelings of trust in administration, as well as sensing genuine care from administration toward employees (Ripp et al. 2020). Health workers' perceptions of administration were described along with other components such as training and preparation as vital in fostering strength and durability during the time of crisis (Ripp et al. 2020).

Platt (2020) discussed an even greater concept for teams working together, which he refers to as a social brain network. He found when connections are strong, team members' "brains go into synchrony" and "patterns of neuronal activity are aligned" (Platt, 2020, p. 15). After the team members' brain activity is synchronized, physiological synchrony follows, such as heart rates (Platt, 2020). This level of synchrony can allow teams to improve communication and levels of understanding, which lead to an overall improvement in the team's ability to work well together (Platt, 2020).

In regards to the application of leadership, Eisenberger and Lieberman (2013) gave an example of two employees, one struggling with a physical ailment and the other a social pain. Based on the given research, leaders should move past the opinion employees should "simply 'get over' their hurt feelings, despite the fact we would never think someone should 'get over' their broken leg" (Eisenberger & Lieberman, 2013, p. 304). Furthermore, it is suggested employees who feel valued and respected have activated areas of the brain fostering future desired behavior in order to repeat the feeling of being appreciated by those in supervisory positions (Eisenberger & Lieberman, 2013). In a school setting, Modoono (2017) added:

> Trusting teachers communicates that you value them and believe in them. Teachers who are trusted take risks and collaborate with their colleagues. They work longer hours. They are committed to maintaining a healthy culture—a place where everyone looks forward to coming to work. Most important, they build on this foundation of trust and collaboration to create engaging, rigorous learning opportunities for their students. (para. 3)

Psychological Safety

Research has found a correlation between positive relationships between team members and leaders and psychological safety, outlining the importance of creating a psychologically safe environment among teams (Frazier et al., 2017). Edmondson (2012) described psychological safety as a concept grounded in trust and respect, fostering a collaborative environment in which equal voice and experiences are shared more freely. Edmondson (2018) stated, "simply put, psychological safety makes it possible to give tough feedback and have difficult conversations without the need to tiptoe around the

truth" because of the foundation of trust and respect (as cited in Brown, p. 36). Mistakes will not be ridiculed, and asking for help is not seen as a weakness within a psychologically safe environment (Edmondson, 2012, 2018).

Continuing with the concept of social neuroscience, Rock (2013) provided insights and applications toward the improvement of people working together. He suggested two themes stemming from the research conducted within social neuroscience (Rock, 2013). First is "much of our motivation driving social behavior is governed by an overarching organizing principle of minimizing threat and maximizing reward" (Gordon, 2000, as cited in Rock, 2013, p. 311). Second is the reiteration of the brain treating physical and social needs similarly (Rock, 2013).

To both summarize and provide a framework for these two emerging themes within recent neuroscience studies, Rock (2013) created the SCARF model, which can be applied in collaborative groups in all settings. This model includes the following five categories, describing the social needs of people: status, certainty, autonomy, relatedness, and fairness (2013).

The first domain of the SCARF model is status. Status refers to a person's "relative importance to others" (Rock, 2013, p. 312). Clark (2020) related the concept of status to what he referred to as inclusion safety, which highlights the need people have to be accepted by others. Even in conversations with others, humans have a perceived status of ranking with another person. Within the brain, similar areas are activated with status as with areas utilized for math and working with numbers (Rock, 2013). If one person perceives themselves as higher than the other, their perceived status increases (Rock, 2013). When this occurs, dopamine levels increase. Haynes (2018) stated the chemical

dopamine comes into play with the concept of status as a major player in motivation and aiding in social success.

The opposite reaction can occur when one feels lower in status than another (Eisenberger & Lieberman, 2013). In the previously discussed research of Eisenberger and Lieberman (2013), when one experiences the feeling of being left out, or treated as a lowered status, the brain perceives the reaction in similar ways as it does to physical pain. As leaders, an application can be made to reduce the team members' status threats while increasing status rewards (Eisenberger & Lieberman, 2013). Unfortunately, Rock (2013) also pointed out decreasing someone's status accidentally can happen with even the best of intentions, for example, someone receiving advice from a colleague or boss. This can affect workplace interactions, from simple conversations to faculty evaluations (Rock, 2013). One suggestion Rock (2013) gives for this is to encourage self-evaluation from faculty members as a way to proactively lower a status threat. Other suggestions include those increasing status through social rewards, such as giving attention to improvement, which can often be accomplished through goal-setting and self-competition, as well as giving positive praise to people socially (Rock, 2013). An important reminder for leaders is to increase the status of team members by avoiding decreasing the status of others simultaneously (Rock, 2013). The status of the group can be increased negatively, thereby affecting relationships among team members (Rock, 2013).

The next domain, certainty, refers to one's ability to be able to "predict the future" (Rock, 2013, p. 312). The sensory system plays a large role in this process, as it recognizes patterns creating memories of previous experiences to predict future experiences, which is an experience humans desire (Rock, 2013). Without the ability to

make predictions, the brain has to rely on other resources to react to stimuli, such as the prefrontal cortex, which causes more intensity in the human experience, potentially causing stress (Rock, 2013). Familiar situations providing certainty are included in the SCARF theory due to the automatic pilot level of comfortability certainty brings (Reiche, 2016; Rock, 2009). Stress occurs if a person encounters a situation providing the opposite experience of unfamiliarity, which, in turn, affects one's working memory and triggers a threat response in the brain, creating a situation that must be dealt with before a person can feel right again, (Rock, 2009).

When errors are made in predictability, the reaction in the orbital frontal cortex, or OFC, is then a potential distraction from one's work tasks, as well as providing a way for people to focus on the mistake (Rock, 2013). This, in turn, makes it difficult to focus on the task at hand without a solution to the error (Rock, 2013). The opposite of this reaction occurs when a sense of certainty is created (Rock, 2013). The threat to one's feelings of certainty can be affected by any change and can be decreased in many ways by leaders, such as breaking tasks into manageable chunks, describing the desired outcome of a task, and even the clear communication of expectations (Rock, 2013).

Trust comes into play with the concept of certainty, described by Brown (2018) as "the glue that holds teams and organizations together" (p. 222). Trust among team members is a difficult topic of discussion and is often easier to avoid rather than invest the needed time to develop (Brown, 2018). Avoiding the topic of trust, however, is even worse than the difficulty of discussing trust within a team, often causing colleagues to avoid talking with each other, or even talk about one another with other team members (Brown, 2018). Authors Zimmerman et al. (2020) described interpersonal trust as a

concept developed through social situations, such as those occurring throughout a child's school career. The concepts of "confidence, vulnerability, benevolence, reliability, competence, honesty, and openness" are associated with interpersonal trust (Zimmerman et al., 2020, p. 15). According to Causton et al. (2021), "there are no shortcuts to forming and fostering relationships that allow humans to trust one another" (p. 22).

The third domain, autonomy, "provides a sense of control over events" (Rock, 2013, p. 312). In other words, autonomy allows people the feeling of having a choice in day-to-day tasks (Rock, 2013). Studies conducted with rats even demonstrated the significance of the perception of a stressful event as being labeled uncontrollable versus escapable was the difference between life and death (as cited in Rock, 2013). Other studies show correlations among those who have retired from corporate life to a position with lower income to an increased sense of autonomy, as well as with their perception of control and health (Rock, 2013).

One of the most common leadership mistakes discussed by Rock (2013) regarding a team member's autonomy is micromanaging, which creates a threat response due to a lack of control in the situation. Micromanagement is a threatening situation for people, triggering stress as well as directly affecting one's certainty (Rock, 2009). A collaborative environment does encourage less autonomy among individual team members; however, leaders can still create a sense of autonomy in teams by offering choices rather than an ultimatum, for example.

The fourth domain of relatedness refers to one's "sense of safety with others" (Rock, 2013, p. 312), often related to the feeling of belonging within a group or social situation (Rock, 2013). Within brain research, one learns the production of oxytocin,

which is a naturally-produced hormone, occurs when one feels more comfortable with people in social situations (Rock, 2013). Oxytocin can be produced by beginning collaborative groups with team members getting to know one another before tackling the group's tasks (Rock, 2013). This production of oxytocin creates improved relatedness, which ties closely to the concept of trust (Rock, 2013). According to Rock (2009), "each time a person meets someone new, the brain automatically makes quick friend-or-foe distinctions and then experiences the friends and foes in ways colored by those distinctions" (p. 56). School leaders who are attuned to this can steer situations socially to improve neurological reactions and productivity within a team (Rock, 2009).

The opposite of closeness is group withdrawal, which can occur when a group member is found to be untrustworthy (Rock, 2013). Therefore, the more groups trust their members, the better the collaborative capacity will be within the organization (Rock, 2013). According to Rock (2013), the positive connections deriving from group trust is vital; however, overall trust within a team is a slow process, occurring over a period of time (Brown, 2018).

Tangible applications for leaders to reduce the threat response associated from a lack of relatedness would be forming mentor relationships and encouraging team members to spend time and share life stories with one another, which can increase a group's productivity (Rock, 2013). Cultivating an environment embedded in mutual trust can help team members recover and learn from failure (Brown, 2018). Brown (2018) pointed out with the millennial generation "making up thirty-five percent of the American labor force (the largest represented generation), teaching how to embrace failure as a learning opportunity is even more important" (p. 242). According to Pasquariello (2017):

> The reality of our overachieving culture is to avoid admitting failure at all costs. So, when you have staked your career and reputation on a particular policy or theory, it takes a certain kind of bravery and confidence to take a stand and acknowledge failure. (p. 22)

The fifth and final domain of fairness "is a perception of fair exchanges between people" (Rock, 2013, p. 312). The response related to this concept is largely seen in the limbic system, which is the control center for emotional responses in the brain (Coon et al., 2019). The perception of fair versus unfair social situations among people can trigger a threat response with colleagues in which an employee does not already have established trust, which is often referred to as "the old boys' network" (Rock, 2009, p. 56). Fairness is highly related to trust, once again, and the collaborative efforts of a team are centered around the existence of this concept among team members (Reiche, 2016; Rock, 2009).

Opportunities surrounding fairness can create intrinsic motivation for team members. Unfair exchanges, however, can at times include an area of the brain called the insula, which is related to feelings such as disgust (Rock, 2013). An extremely damaging product of an unfair exchange between team members can be a lack of empathy team members can feel for each other if they perceive the interactions as unfair; even feeling better, so to speak, when coworkers do not perform as well or are reprimanded by supervisors (Rock, 2013). To decrease this perception, leaders can increase communication among team members, be honest about organizational issues, and set group norms for team collaboration (Rock, 2013).

These five domains as a whole can activate the areas of the brain which react to a reward or threat and can provide a connection between a social pain and a physical pain

(Rock, 2013). Rock (2013) gave the example of "a perceived threat to one's status activates brain networks similar to those activated by a threat to one's life" (p. 312).

For leaders of any type, an application to this model would be to create a collaborative environment encompassing the "approach-avoid response" (Rock, 2013, p. 312), which refers to the preferred stimuli people experience when working together as one, which will maximize reward and minimize threat (Rock, 2013). According to Rock (2013), this response is a survival instinct, as people label experiences as positive or negative as they maneuver through life experiences. The portion of the brain playing a large role in this coding of experiences is the amygdala, which is highly tied to emotion within responses (Rock, 2013). This can quickly become a reflex, which is significant considering the effects these reactions can have on "perception and problem solving, and the implications of this effect on decision-making, stress-management, collaboration, and motivation" (Rock, 2013, p. 314).

Research has found a correlation between positive relationships between team members and leaders and psychological safety, outlining the importance of creating a psychologically safe environment among teams (Frazier et al., 2017). For leaders who question the amount of time it might take to build a psychologically safe environment, fostering trust and vulnerability, Brown (2018) suggested job performance will decrease if adequate time is not given. She went on to say, "Leaders must either invest a reasonable amount of time attending to fears and feelings or squander an unreasonable amount of time trying to manage ineffective and unproductive behavior" (Brown, 2018, p. 67).

Within the brain, similar areas are activated with status as with areas utilized for math and working with numbers (Rock, 2013). If one person perceives themselves as higher than the other, their perceived status increases (Rock, 2013). When this occurs, dopamine levels increase (Rock, 2013). Bringing in neuroscience, Haynes (2018) stated the chemical dopamine comes into play with the concept of status as a major player in motivation and aiding in social success. According to Cunningham and Pfleging (2021), school leaders should first focus on their well-being, followed by modeling self-care and balance for their employees, leading to faculty members feeling valued by their school leaders.

Collaborative Capacity

Edmondson (2011) pointed out that in current workplaces, collaboration plays a vital role in productivity. DeWitt (2018) discussed the importance of collaborative capacity, also referred to as collective efficacy, in the relationship of its effect size in the classroom (Hattie, 2017) and stated:

> We need to bring all teachers to a more collaborative mindset, which means that we need to raise their level of self-efficacy through elevating their teacher voice, co-constructing goals with them, focusing on the positive practices they display in the classroom, and listening to their needs. (p. 50)

Hattie's effect sizes list 0.40 as the hinge point, indicating a "year's worth of growth for a year's input" (DeWitt, 2018, p. 10). Collective teacher efficacy's effect size is listed as 1.57, which is comparable to four years of growth for one year's input (DeWitt, 2018).

Fostering collaborative capacity in a school faculty, including collaborative conversation, is tied to team members feeling comfortable in a positive environment, not punishing someone for trying something new (DeWitt, 2018). These collaborative conversations can occur when team members feel valued, heard, and trust their collaborative leaders (DeWitt, 2018). Regarding collaborative conversations, Zimmerman et al. (2020) stated:

> When teams begin to ask questions, they let go of certainty and begin to consider divergent ideas. They seek connections between what they know and what they are learning. And they find delight in discovering an unexpected understanding. When questions are asked as part of the collaborative process, everyone grows. (p. 179)

Collaborative efforts of teams are encouraged when results are seen in student achievement, along with the realization of the increase in achievement, correlated to work put in by collaborative teams (Donohoo and Katz, 2019). Garmston and Wellman (2013), in their work with the Adaptive Schools program, have compiled research with experiences to foster collaborative capacity in organizations. The authors stated, “when beliefs, values, and assumptions lie below the surface and are not illuminated by the light of inquiry, the system defaults to established patterns and predictable outcomes” (Garmston & Wellman, 2013, p. 2). To combat habits of existing systemic organization, seven norms of collaboration were created to allow for increased, productive group communication (Garmston & Wellman, 2013, including:

1. Pausing, which allows for listeners to engage thinking and processing of information, as well as group members’ voices (p. 32)

2. Paraphrasing, which allows the listener to communicate value for a team member's voice, as well as understanding (p. 33)
3. Posing questions to "explore thinking" (p. 36)
4. Putting ideas on the table to encourage productivity, as well as "knowing when to pull ideas off the table" (p. 38)
5. Providing data, which acquires "meaning" as a "result of human interaction" (p. 38)
6. Paying attention to self and others to allow for "meaningful dialogue and discussion" (p. 39)
7. Presuming positive intentions, which the authors described as a way to encourage "honest conversations about important matters" (p. 39)

Authors Zimmerman et al. (2020) further described the use of questioning as a part of the collaborative process through the lens of collaborative inquiry. According to the authors, "persistent use of inquiry transforms school cultures; it strengthens collaboration and expands team capacity" (Zimmerman et al., p. 179).

The COVID-19 pandemic has brought about many changes in education, including the need for collaborative efforts (Ark, 2021). Online learning, blended learning, and new teacher hires require an increased need for collaboration, team teaching, and the development of skills needed to effectively educate students who are returning to in-person learning after experiencing a loss of instructional time with teachers (Ark, 2021). To further the capacity for effective collaboration among faculty, it is vital to foster leadership at the team level (Boren, 2017). School leaders fostering leadership qualities among faculty leaders, as well as taking the time to plan effective

meetings can increase a group's capacity to collaborate (Boren, 2017). School leaders can increase personal, collaborative capacity by increased participation in effective professional development, creating group norms for collaborative settings, as well as visiting successful schools and team leaders offering support to each other (Boren, 2017).

School Climate/Leadership

School climate is listed by DeWitt (2018) as of the main components of twenty-first-century learning, along with communication, creativity, collaboration, and critical thinking. The National School Climate Council (2012) defined this concept as the "character of school life" (p. 2), furthering the definition as follows:

> School climate is a multidimensional concept that reflects the norms, goals, values, interpersonal relationships, teaching and learning practices, safety, and organizational structures of a school community. In a school with a positive school climate, students, families, and educators work together to contribute to a shared school vision. Educators model and nurture prosocial behavior. Everyone contributes to the operations of the school and care of the physical environment. Students, families, and school personnel feel respected, valued, and engaged in the life of the school. (p. 1)

Research indicates a positive school climate encourages student success in school in many ways, including academic, social-emotional, behavioral, and overall attendance, to name a few (DeWitt, 2017; National School Climate Center, 2012). According to DeWitt (2017), "in schools that care about fostering a supportive and inclusive school climate, in which all really does mean all, understand that our students need an emotional connection to school in order to be fully engaged" (para. 13). Lasting change cannot take

place without a leadership focus on fostering a positive school climate (Stronge & Xu (2021). Stronge and Xu (2021) offered suggestions for school leaders, such as using an awareness of the school's overall culture to foster the everyday climate and bringing all school stakeholders together to positively impact the wellness of the school community.

Research conducted by Brown (2018) around the concepts of leadership and what she refers to as courageous cultures found over 80% of leaders could "immediately and passionately talk about problematic behaviors and cultural norms that corrode trust and courage;" however, "[they] couldn't identify the specific skills" of what it looks like to have trust and courage (pp. 6–7). Brown (2018) identified ten "behaviors and cultural issues" leaders identified as obstacles in organizations across the world (p. 7).

1. Resisting hard conversations with employees, "including giving honest, productive feedback" (p. 7)
2. Focusing a large amount of time on negative habits and behaviors, rather than "spending a reasonable amount of time proactively acknowledging and addressing the fears and feelings that show up during change and upheaval" (p. 8)
3. "Diminishing trust caused by a lack of connection and empathy" (p. 8)
4. Employees and leaders playing it safe, avoiding "taking smart risks or creating and sharing bold ideas to meet changing demands and the insatiable need for innovation" (p. 8)
5. Getting "stuck and defined by setbacks, disappointments, and failures" (p. 8)
6. Placing "too much shame and blame," and "not enough accountability and learning" (p. 9)

7. Team members “opting out of vital conversations about diversity and inclusivity because they fear looking wrong, saying something wrong, or being wrong” (p. 9)
8. Teams and team members “rushing into ineffective or unsustainable solutions rather than staying with problem identification and solving” (p. 9)
9. The values of the organization being “assessed in terms of aspirations rather than actual behaviors that can be taught, measured, and evaluated” (p. 9)
10. Team members being kept “from learning and growing” by “perfectionism and fear” (p. 9)

Other elements of toxic school cultures and climate are described as one without direction, negative relationships, a decrease in communication, rule-oriented, a lack of honesty and collaboration, and even unsafe (Epitropoulos, 2019). In their study, Mousena and Raptis (2021) investigated the school community as part of the solution to the negative impact outside forces can do to today’s school environment. According to Mousena and Raptis (2021), “it is a fact that conditions in education are becoming increasingly difficult, as a result of the broader, rapidly changing, and increasingly complex environment (p. 98). Mousena and Raptis (2021) found effective school leadership and communication could come together to foster the following attributes leading to a positive school climate:

- Covering the biological, emotional, and exploratory needs of participants;
- A surrounding space which is pleasant and provides stimuli for action;
- The ability of neutralizing negative factors;
- Possibilities for verbal, non-verbal, and symbolic communication;

- Teacher-centered leadership;
- Educators' ability to communicate and self-regulate emotions;
- Collaboration between school workforce and external agents. (p. 108)

Cultivating a positive school climate is not just a concept for leaders to consider for educators but for students, as well (Pennsylvania State University & Robert Wood Johnson Foundation, 2018). Research conducted in the Pittsburgh public school system yielded a significant decrease in suspension in comparison with other schools, even more so at the elementary grade-level buildings, after implementation of "a restorative practices program oriented around effective communication, conveying understanding of responsibility, and separating the 'deed' from the 'doer'" (as cited in Rebora, 2019, paras. 3–4). According to Sawchuk (2020), the stresses of pressing social and political issues, as well as the COVID-19 pandemic, including pushing a lot of learning to virtual platforms has made the need for a positive school climate even greater than before.

Summary

In Chapter Two, literature related to psychological safety, collaborative capacity, and school culture were reviewed and summarized. In Chapter Three, the methodology of the study is explained. The explanation includes information about the problem statement and an overview of the purpose, as well as the research questions, hypotheses, research design, population and sample, instrumentation, data collection and analysis, and ethical consideration.

Chapter Three: Methodology

Included in this chapter are the problem and purpose overview, research questions, hypotheses, research design, population and sample information, and instrumentation. Data collection and analysis descriptions, as well as ethical considerations, are described. Methods used to study the relationships among the research variables will be discussed. The variables of status, certainty, autonomy, relatedness, fairness, overall psychological safety, collaborative capacity, and school climate were examined in the quantitative study.

Problem and Purpose Overview

A connection between collective efficacy and student learning is seen in previous research (Berg, 2020; Donohoo et al., 2018; Hattie as cited in Waack, 2018). The knowledge of this connection is not enough to create and sustain change (Donohoo & Katz, 2019; Parrett & Budge, 2020). School leaders have an impact on the culture and climate of faculty members; therefore, bringing a focus to specific leadership behaviors designed to possibly develop increased collective efficacy of faculty members can possibly, in turn, positively impact student learning (Donohoo & Katz, 2019, 2020; Donohoo et al., 2018; Jenkins et al., 2018; Parrett & Budge, 2020). The purpose of this study is to investigate the relationships among psychological safety, school climate, and collaborative capacity among middle-level educators to discover the specific leadership behaviors to increase collective efficacy and student learning

Research Questions and Hypotheses

The following research questions and hypotheses guided this study:

1. What is the relationship between each element of psychological safety and collaborative capacity in middle-level schools?

$H1_0$: There is no relationship between each element of psychological safety and collaborative capacity in middle-level schools.

$H1_a$: There is a relationship between each element of psychological safety and collaborative capacity in middle-level schools.

2. What is the relationship between each element of psychological safety and school climate in middle-level schools?

$H2_0$: There is no relationship between each element of psychological safety and school climate in middle-level schools.

$H2_a$: There is a relationship between each element of psychological safety and school climate in middle-level schools.

3. What is the relationship between overall psychological safety and collaborative capacity in middle-level schools?

$H3_0$: There is no relationship between overall psychological safety and collaborative

capacity in middle-level schools.

$H3_a$: There is a relationship between overall psychological safety and collaborative capacity in middle-level schools.

4. What is the relationship between overall psychological safety and school climate in middle-level schools?

$H4_0$: There is no relationship between overall psychological safety and school climate in middle-level schools.

$H4_a$: There is a relationship between overall psychological safety and school climate in middle-level schools.

5. What is the relationship between collaborative capacity and school climate in middle-level schools?

$H5_0$: There is no relationship between collaborative capacity and school climate in middle-level schools.

$H5_a$: There is a relationship between collaborative capacity and school climate in middle-level schools.

Research Design

A quantitative research design was selected for this study to explore the relationship among the research variables. A two-part faculty survey was developed to gain the information needed to quantify these relationships. Part One included demographical questions. Part Two included items related to psychological safety, collaborative capacity, and school climate.

A case study was used to gain the information needed to investigate possible relationships among the research variables. Two middle-level school buildings were purposely selected in a school district located in Southwest Missouri. Approval was granted by the superintendent of the school district. The survey was distributed electronically to certified faculty members of both middle-level schools via email, and data were collected, organized, and analyzed from completed surveys. Relationships between research variables were analyzed using the Pearson Product Moment Correlation Coefficient, with the value of *r* indicating the relationship.

Population and Sample

A population for the purposes of research is described as a group of individuals in which research findings can be applied, and the sample is a subset of the group (Siegle, 2019). The population chosen for this study included certified faculty members at two school buildings containing fifth through eighth grades within a school district in Southwest Missouri. According to the Missouri Department of Secondary and Elementary Education (MODESE) Missouri School Directory (2020), the district housed over 4,600 students with approximately 370 certified faculty members at the time of this study.

Fifth through eighth grades within this district are housed in two different buildings. The fifth and sixth grade building housed over 50 certified faculty members and approximately 735 students (MODESE, 2020). The seventh and eighth grade building included over 50 certified faculty members and approximately 725 students (MODESE, 2020).

The survey was distributed to the entire population of certified faculty members in both middle-level school buildings. Bluman (2018) stated, "according to the central limit theorem, approximately 95% of the sample means fall within 1.96 standard deviations of the population mean if the sample size is 30 or more" (p. 374). A sample size of at least 30 is supported by the ideas within the Central Limit Theorem (Diez et al., 2020).

Instrumentation

The survey used for this study was created by the researcher (see Appendix A) based on the review of literature. The survey began with an identifying question to determine if the research participants were certified faculty members of the middle-level

schools chosen for the case study, followed by demographical questions. The next section included Likert scale items to determine possible relationships among the research variables. Psychological safety items were based on the works of Edmondson (2003) and Rock (2009). Collaborative capacity items were derived from the works of DeWitt et al. (2013, 2014). School climate items were based on the works of DeWitt (2017), Whitaker and Gruenert (2015, 2017), and the National School Climate Center (2007).

The survey consisted of a five-point Likert scale, with one representing "Strongly Disagree," two representing "Disagree," three representing "Somewhat Agree," four representing "Agree," a five representing "Strongly Disagree." Items 10, 12, 21, 22, 24, and 32 measured perceptions of status. Items 5 and 16 measured perceptions of certainty. Items 14 and 26 measured perceptions of autonomy. Items 7, 19, 25, and 28 measured perceptions of relatedness, and items 29 and 30 measured perceptions of fairness, all measuring the perceptions of total psychological safety. Items 9, 11, 15, 18, 20, 23, 27, and 31 measured perceptions of collaborative capacity, and items 6, 8, 13, 17, and 33 measured perceptions of school climate.

Table 1

Survey Subgroups

Survey Questions and Variables Measured	Relevant Items
Demographics	Questions 1,2,3,4
Status	Items 10,12,21,22,24
Certainty	Items 5,16
Autonomy	Items 14,26
Relatedness	Items 7,19,25,28
Fairness	Items 29,30
Overall Psychological Safety	Items Above
Collaborative Capacity	Items 9,11,15,18,20,23,27,31
School Climate	Items 6,8,13,17,33

In order to assess survey validity, a pilot group was selected to complete the survey, including instructional coaches, counselors, a teacher leadership team, and administrators (Li, 2016). Feedback given by this small group of certified educators, including clarity and length of time to complete the survey was considered before the survey was finalized.

Validity

The survey was completed based on human perception of each item. Human perception can alter for a number of reasons, including outside factors possibly altering one's well-being possibly during the time frame in which the survey is completed (Ramanathan, 2018). According to Rock (2013), one's brain health can be affected unless the presence of a "mental health diet" exists (p. 128). This is referred to as a healthy mind platter, which includes "the neuro-cognitive benefits of seven key activities: sleep time, playtime, time-in, downtime, connecting time, physical time, and focus time" (Rock, 2013, p. 130). Without a balance of these variables, a person's responses could be affected. These threats to a study's validity, as referred to by Campbell and Stanley (1963), include the concepts of "maturation" and "history" (p. 5), described as affecting the validity of pretest/posttest research, but could apply to single survey research, as well. According to the authors, "history" refers to "specific events" occurring in a research subject's life, possibly altering responses and "maturation" to functional concepts possibly altering responses, such as hunger and fatigue (1963, p. 5).

Data Collection

After obtaining IRB approval from Lindenwood University in May, 2021, the superintendent of the selected school buildings was contacted to obtain consent for

participation in the research study (see Appendix B). Following superintendent approval, email addresses of potential participants were obtained through school district websites or from school district personnel. The letter of participation (see Appendix C) and consent form (see Appendix D) were distributed to faculty members via email using Lindenwood University's *Qualtrics* account, including a link to the survey (Fraenkel et al., 2019). The *Qualtrics* software program was used to distribute the survey and collect participant responses.

Data Analysis

Once collected by the *Qualtrics* software program, the data were analyzed for the purpose of understanding the results and then investigating the relationships among the research variables (Bluman, 2018; Fraenkel et al., 2019; Walker, 2017). Descriptive statistics provide a summary of the data "by describing what the data looks like" (Oh & Pyrczak, 2018, p. 49). The Pearson Product Moment Correlation Coefficient was used in this quantitative study to identify the correlation coefficient from the data collected on the selected research variables. The Pearson Product Moment Correlation Coefficient was selected to give the researcher a proven, common data analysis method to study the relationship between the quantified research variables (Fraenkel et al., 2019; Walker, 2017). The alpha level is set at .05, meaning there is at least a 95% chance the results are valid and not due to chance (Bluman, 2018; Fraenkel et al., 2019).

Ethical Considerations

Participants in research studies "are entitled for four types of rights, to be secured by the researcher: (a) right to maintain privacy (b) guaranteed anonymity (c) guaranteed confidentially and (d) avoiding harm, betrayal or deception" (Govil, 2013, p. 18). The following steps were taken to ensure the protection of research participants:

1. The use of safeguards will be used to protect the anonymity and confidentiality of research participants.
2. Housing all data and documentation regarding the study on a password protected device.
3. Reporting all data in sub-groups rather than individual responses.
4. The use of Lindenwood's *Qualtrics* account to gather all responses to ensure anonymity. Furthermore, responses will be destroyed three years after the research and dissertation are complete. Research participants will receive a link to the survey within the consent form.

The researcher was not a supervisor of any research participants, and a conflict of interest between the researcher and research participants was not expected.

Summary

Details regarding the methodology of the research study were presented in Chapter Three. The problem and purpose of the research study were reviewed, and the research questions were presented. The research design, population and sample, and instrumentation were described. Also explained were the processes for data collection and data analysis. Ethical considerations were offered. Chapter Four includes an analysis of the data.

Chapter Four: Analysis of Data

An introduction to the study was presented in Chapter One. Relevant literature was presented and discussed in Chapter Two. Chapter Three included a description of the methodology, leading to the analysis included in the current chapter.

Previous research shows a correlation between student learning and collective efficacy in schools (Berg, 2020; Donohoo et al., 2018; Hattie as cited in Waack, 2018). Specific leadership behaviors designed to possibly increase the collective efficacy of faculty members can facilitate a positive culture and climate in the school environment, as well as an increase in student learning, bringing needed action to the knowledge of previous research (Donohoo & Katz, 2019, 2020; Donohoo et al., 2018; Jenkins et al., 2018; Parrett & Budge, 2020).

There is a lack of previous research showing specific connections between the research variables of psychological safety, collaborative capacity, and school climate, which independently have been connected to collective efficacy and student learning (Bandura, 2000, 2012; DeWitt, 2017; Donohoo & Katz, 2019; Garmston & Wellman, 2013; Gruenert & Whitaker, 2015, 2017; Harvey et al., 2019; Hattie, 2017, 2018; Parrett & Budge, 2020). The purpose of this study is to investigate the relationships among psychological safety, school climate, and collaborative capacity among middle-level educators in order to discover specific leadership behaviors that could increase collective efficacy and student learning.

A quantitative research design was used for this study to investigate possible relationships among the research variables (Creswell, 2018; Ponce et al., 2020). A three-part faculty survey was developed by the researcher to gain the information needed to

quantify these relationships. The first section of the survey included demographical information. The second section included statements related to overall psychological safety, as well as the individual components of psychological safety, including status, certainty, autonomy, relatedness, and fairness, followed by statements regarding collaborative capacity and school climate. A case study was used to gain the information needed to investigate possible relationships between the research variables (Fraenkel et al., 2019).

Chapter Four includes an overall summary of the data discovered, including an analysis of the connections discovered between the research variables and data to support each research question. Scatterplots and box-and-whisker charts are also included to provide a visual representation of the survey data (Bluman, 2018; Fraenkel et al., 2019).

Survey Instrument Design

A 33-item survey was developed and administered via *Qualtrics* and distributed by Lindenwood University to certified faculty members employed by a middle school and junior high school containing fifth through eighth grade students. The survey included two sections. The first section contained questions regarding demographic information. The second section was designed to gather specific data pertaining to the research variables and included statements pertaining to psychological safety, collaborative capacity, and school climate. Each statement included in the second section gathered Likert-type answers to help answer the research questions.

The first four questions were designed to obtain demographic information used to identify certified faculty members, grade level and content areas taught, and years of experience in education as well as in the current teaching assignment. A required

question to begin the survey was used to identify certified faculty. Those who answered "no" to this identifying question were excluded from answering the rest of the survey questions and items. Question one in the first section was used to identify which survey participants are faculty members working with fifth, sixth, seventh, or eighth grades, as well as the possibility of identifying participants who work with multiple middle-level grades. This question helped identify faculty members from the same school building, as well as those who possibly work in both school buildings. Question two was used to identify the content area taught or position in the school. This question identified participants teaching core content areas, elective courses, as well as certified faculty members in specialty positions, such as school counselors (Sawchuk, 2020). Questions three and four were used to determine the years of experience in education as a whole, as well as the years of experience in the current position held during the time of the survey (Jacobs, 2018).

Survey items five through 33 contained Likert-scale statements developed by the researcher. Psychological safety items were based on the works of Edmondson (2003) and Rock (2009). Collaborative capacity items were derived from the works of DeWitt et al. (2013, 2014). School climate items were based on the works of DeWitt (2017), Whitaker and Gruenert (2015, 2017), and the National School Climate Center (2007).

Survey items related to psychological safety were designed to gather data relating to possible correlations among the research variables of overall psychological safety, as well as the individual psychological safety components of status, certainty, autonomy, relatedness, and fairness (Edmondson, 2003; Rock, 2009).

Collaborative capacity survey items were designed to gather information regarding faculty member's perspectives on sharing opportunities, working together to meet student needs, and team functionality (DeWitt et al., 2013, 2014).

Items regarding school climate were designed to gather information regarding the associated concepts of the existence of a shared purpose and goals, feelings toward the work environment, and perceptions of character values held among faculty members (DeWitt, 2017; National School Climate Center, 2007; Whitaker and Gruenert 2015, 2017).

Collection of Data

Once survey items were created and field-tested, the researcher obtained permission to conduct research at a specific school district in southwest Missouri in two school buildings housing fifth through eighth grades. Once permission was granted, a letter of participation and survey consent form were emailed to certified faculty members at each building.

A minimum sample size of 30 teachers for the purpose of this study was necessary to meet a confidence interval of 95%. According to Bluman (2018), "approximately 95% of the sample means fall within 1.96 standard deviations of the population mean if the sample size is 30 or more, or if σ is known when n is less than 30 and the population is normally distributed" (p. 374). A case study was conducted among two school buildings housing grades fifth through eighth in a southwest Missouri school district. The fifth and sixth-grade building housed over 50 certified faculty members and approximately 735 fifth and sixth-grade students (MODESE, 2020). The seventh and eighth-grade building included over 50 certified faculty members and approximately 725

students (MODESE, 2020). Thirty surveys were collected out of the approximate 100 certified faculty members, therefore indicating a response rate of 30%.

Survey Data

The survey data were analyzed from both sections of the survey to address the research questions. A numerical value was given to each Likert scale answer: 1 = strongly disagree, 2 = disagree, 3 = somewhat agree, 4 = agree, 5 = strongly agree (Fraenkel et al., 2019). A composite score was calculated for each variable for each participant, as well as for each survey item by calculating the sum score of the Likert scale responses (Fraenkel et al., 2019). Scores were inverted for survey items stated in the negative (Fraenkel et al., 2019).

Data Analysis

Descriptive statistics were used for the purpose of understanding the results and investigating relationships among the research variables (Bluman, 2018; Fraenkel et al., 2019; Walker, 2017). Descriptive statistics provide a summary of the data "by describing what the data looks like" (Oh & Pyrczak, 2018, p. 49).

To quantify the participants' answers to each Likert scale item, a total score was calculated for each variable for each certified faculty member (Fraenkel et al., 2019). (Fraenkel et al., 2019). The sum of items 10, 12, 21, 22, 24, and 32 was calculated to present a total score for status. Items 5 and 16 were calculated to represent certainty. Items 14 and 26 were calculated to represent autonomy. Items 7, 19, 25, and 28 were added together to create a score for relatedness. Items 29 and 30 were added to create a score for fairness. A grand total of the items for each of the previous concepts was added together for a score representing overall psychological safety. Items 9, 11, 15, 18, 20, 23,

27, and 31 were calculated to generate a score for collaborative capacity. Finally, items 6, 8, 13, 17, 33 were calculated for a score representing school climate.

Possible patterns existing between the research variables were investigated by organizing and analyzing the survey scores, including the average of the mean, the average of the median, the mode, and standard deviation (Bluman, 2018; Fraenkel et al., 2019). An interquartile range was calculated to measure the variability of the data (Bluman, 2018; Fraenkel et al., 2019). Data were put into four equal groups, or quartiles, then the range was calculated by finding the difference between the third and first quartiles, providing the interquartile range, or IQR (Bluman, 2018; Fraenkel et al., 2019). Data outliers were also determined by examining scores extremely higher or lower than the rest of the score values, possibly skewing the mean and standard deviation of a particular research variable or data set (Bluman, 2018; Fraenkel et al., 2019).

A boxplot was created as a visual representation of the data. Five values represented as averages are included in the boxplot, including the lowest score of the data set, or the minimum, quartile 1, the median of the data set, quartile three, and the highest data score, or the maximum, creating a five-number summary (Bluman, 2018; Fraenkel et al., 2019). A boxplot was created to represent each subgroup in the research, providing information regarding the data of each subgroup and how it compares to the data of other subgroups included in the research. The use of a boxplot to provide a graphical representation of data has remained "relevant due to its simplicity, ease of interpretation, and relative effectiveness" (Walker et al., 2018, p. 352).

Inferential statistics were used to determine the relationships among the research variables. The Pearson Product Moment Correlation Coefficient was used to identify the

correlation coefficient from the data collected on the selected research variables. The Pearson Product Moment Correlation Coefficient was selected to give the researcher a proven, common data analysis method to study the relationship between the quantified research variables (Fraenkel et al., 2019; Walker, 2017).

Descriptive Statistics

The first four questions on the survey gathered information regarding the demographic data of the research participants. The data were organized based on categories of answers given for each question, as well as responses given for each demographic setting. First, data were organized based on the grade level in which each participant works as follows: values, percentage of sample, five-number summary, measures of central tendency, and standard deviation. Fifth through eighth grade faculty member values were depicted. The percentages of the sample were as follows: 13% of faculty members completing the survey worked with fifth grade, 13% worked with sixth grade, 20% worked with seventh grade, 7% worked with eighth grade, 20% worked with both fifth and sixth grades, 23% worked with both seventh and eighth grades, and 3% worked in both middle-level school buildings with part of all grades depicted.

Additionally, a five-number summary was created to depict the data represented by grade levels in which participants worked (see Table 2). Quartiles representing the concept of status for fifth grade faculty participants were calculated as Quartile 1 = 3.33, Quartile 2 = 3.83, Quartile 3 = 4.21, and Quartile 4 = 4.33. The minimum was 2.83, and the maximum was 4.33. Quartiles representing the concept of status for sixth grade faculty participants were calculated as Quartile 1 = 3.79, Quartile 2 = 4.08, Quartile 3 = 4.50, and Quartile 4 = 5.00. The minimum was 3.67, and the maximum was 5.00.

Quartiles representing the concept of status for seventh grade faculty participants were calculated as Quartile 1 = 3.04, Quartile 2 = 3.67, Quartile 3 = 4.17, and Quartile 4 = 4.50. The minimum was 2.83, and the maximum was 4.50. Quartiles representing the concept of status for eighth grade faculty participants were calculated as Quartile 1 = 3.21, Quartile 2 = 3.42, Quartile 3 = 3.63, and Quartile 4 = 3.83. The minimum was 3.00, and the maximum was 3.83. Quartiles representing the concept of status for faculty participants working with both fifth and sixth grades (middle) were calculated as Quartile 1 = 2.92, Quartile 2 = 3.83, Quartile 3 = 4.00, and Quartile 4 = 4.33. The minimum was 2.50, and the maximum was 4.33. Quartiles representing the concept of status for participants working with both seventh and eighth grades (junior high) were calculated as Quartile 1 = 3.42, Quartile 2 = 3.67, Quartile 3 = 3.67, and Quartile 4 = 5.00. The minimum was 3.00, and the maximum was 5.00. Finally, quartiles representing the concept of status for fifth through eighth grade faculty participants were calculated as Quartile 1 = 3.50, Quartile 2 = 3.50, Quartile 3 = 3.50, and Quartile 4 = 3.50. The minimum was 3.50, and the maximum was 3.50.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 2

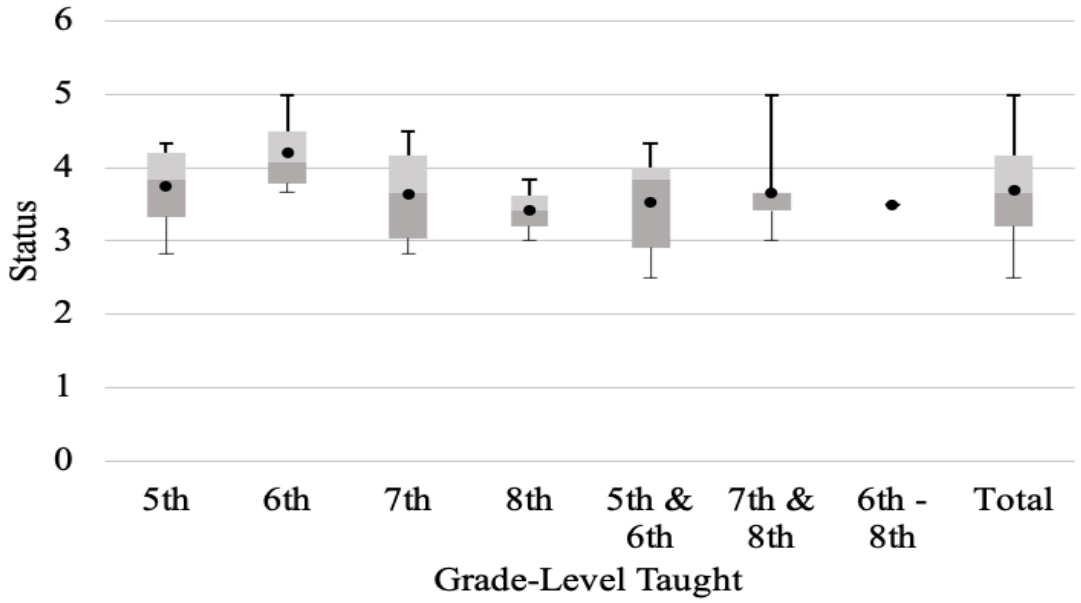
Status for Grade-Level Taught

Values	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Middle School	Jr. High	MS/JH Mixed	Total
Percentage Of Sample	13	13	20	7	20	23	3	100
Five-Number Summary								
Minimum	2.83	3.67	2.83	3.00	2.50	3.00	3.50	2.50
Quartile 1	3.33	3.79	3.04	3.21	2.92	3.42	3.50	3.21
Quartile 2	3.83	4.08	3.67	3.42	3.83	3.67	3.50	3.67
Quartile 3	4.21	4.50	4.17	3.63	4.00	3.67	3.50	4.17
Maximum	4.33	5.00	4.50	3.83	4.33	5.00	3.50	5.00
Measures of Central Tendency								
M	3.75	4.21	3.64	3.42	3.53	3.67	3.50	3.69
MD	3.83	4.08	3.67	3.42	3.83	3.67	3.50	3.67
Mode	NA	NA	25.00	NA	24.00	21.00	NA	21.00
SD	4.11	3.59	4.31	3.54	4.58	3.83	NA	3.89

Data were utilized to create a box plot (see Figure 1). The figure displays seven series of data for each grade level in which survey participants work: fifth grade, sixth grade, seventh grade, eighth grade, middle (both fifth and sixth), junior high (both seventh and eighth), and total participants. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 1

Status for Grade-Level Taught



Next, data related to status were organized and calculated per content taught or worked within. The percentages were as follows: 43% taught core content subjects, 17% taught elective subjects, 33% taught special education, and 7% worked as school counselors.

Additionally, a five-number summary was created to depict the data represented by content taught (see Table 3). Quartiles representing the concept of status for faculty members teaching core subjects were calculated as Quartile 1 = 3, Quartile 2 = 3.75, Quartile 3 = 4.17, and Quartile 4 = 5. The minimum was 2.83, and the maximum was 5. Quartiles representing the concept of status for faculty members teaching elective subjects were calculated as Quartile 1 = 3.5, Quartile 2 = 3.5, Quartile 3 = 4, and Quartile 4 = 5. The minimum was 3.5, and the maximum was 5. Quartiles representing the concept of status for faculty members teaching special education were calculated as

Quartile 1 = 3.38, Quartile 2 = 3.62, Quartile 3 = 3.96, and Quartile 4 = 4.33. The minimum was 2.5, and the maximum was 4.33. Quartiles representing the concept of status for faculty members working as school counselors were calculated as Quartile 1 = 3.08, Quartile 2 = 3.75, Quartile 3 = 3.92, and Quartile 4 = 4.33. The minimum was 2.67, and the maximum was 4.33.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode, were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 3

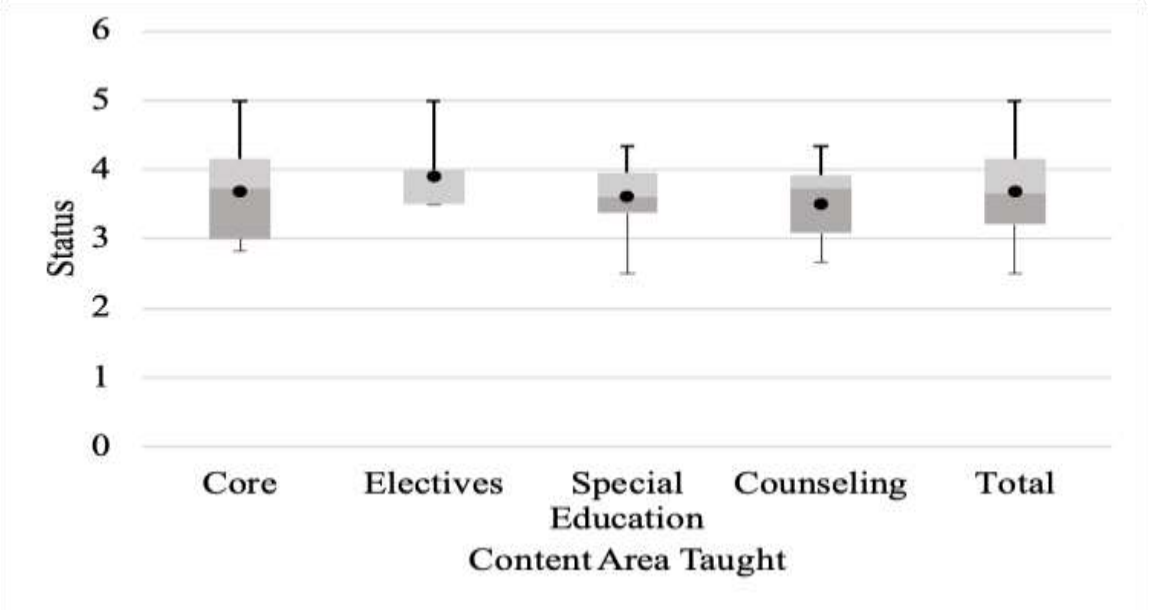
Status for Content Taught

Values	Core Subjects	Elective Subjects	Special Education	School Counseling	Total
Percentage of Sample	43	17	33	7	100
Five-Number Summary					
Minimum	2.83	3.50	2.50	2.67	2.50
Quartile 1	3.00	3.50	3.38	3.08	3.21
Quartile 2	3.75	3.50	3.62	3.75	3.67
Quartile 3	4.17	4.00	3.96	3.92	4.17
Maximum	5.00	5.00	4.33	4.33	5.00
Measures of Central Tendency					
M	3.69	3.90	3.62	3.50	3.69
MD	3.75	3.50	3.62	3.75	3.67
Mode	17.00	21.00	23.00	NA	21.00
SD	4.24	3.91	3.33	7.07	3.89

Data were utilized to create a box plot (see Figure 2). The figure displays seven series of data for each content in which survey participants work: core subjects, elective subjects, special education, and school counseling. The boxes in the figure depict data clusters, and the tails depict the variances among the data (Bluman, 2018).

Figure 2

Status for Content Taught



Next, data related to status were organized and calculated based on the total number of years in which each survey participant has worked in education. Values were depicted as follows: one through five years, six through 10 years, 11 through 15 years, 16 through 20 years, 21 through 25 years, 26 through 30 years, and 30 plus years. The percentages of the sample for total years in education were as follows: 17% had worked in education for one to five years; 33% of participants had worked in education for six to 10 years, 27% for 11 to 15 years, 7% 16 to 20 years, 7% for 21 to 25 years, 3% 26 to 30 years, and 7% for 30 plus years.

Additionally, data were organized in a five-number summary for total years in education (see Table 4). Status quartiles for one through five years in education were calculated as Quartile 1 = 3.33, Quartile 2 = 4, Quartile 3 = 4.5, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Status quartiles for participants working in

education for six through 10 years in education were calculated as Quartile 1 = 2.88, Quartile 2 = 3.58, Quartile 3 = 3.79, and Quartile 4 = 4.33. The minimum was 2.67, and the maximum was 4.33. Status quartiles for 11 through 15 years in education were calculated as Quartile 1 = 3.42, Quartile 2 = 3.75, Quartile 3 = 4.21, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Status quartiles for 16 through 20 years in education were calculated as Quartile 1 = 3.92, Quartile 2 = 4, Quartile 3 = 4.08, and Quartile 4 = 4.17. The minimum was 3.83, and the maximum was 4.17. Status quartiles for 21 through 25 years in education were calculated as Quartile 1 = 2.75, Quartile 2 = 3, Quartile 3 = 3.25, and Quartile 4 = 3.25. The minimum was 2.5, and the maximum was 3.25. Status quartiles for 26 through 30 years in education were calculated as Quartile 1 = 3.5, Quartile 2 = 3.5, Quartile 3 = 3.5, and Quartile 4 = 3.5. The minimum was 3.5, and the maximum was 3.5. Status quartiles for participants working in education for 30 plus years were calculated as Quartile 1 = 3.96, Quartile 2 = 4.08, Quartile 3 = 4.21, and Quartile 4 = 4.33. The minimum was 3.83, and the maximum was 4.33. Finally, measures of central tendency and the standard deviation were calculated for total years in education.

Table 4

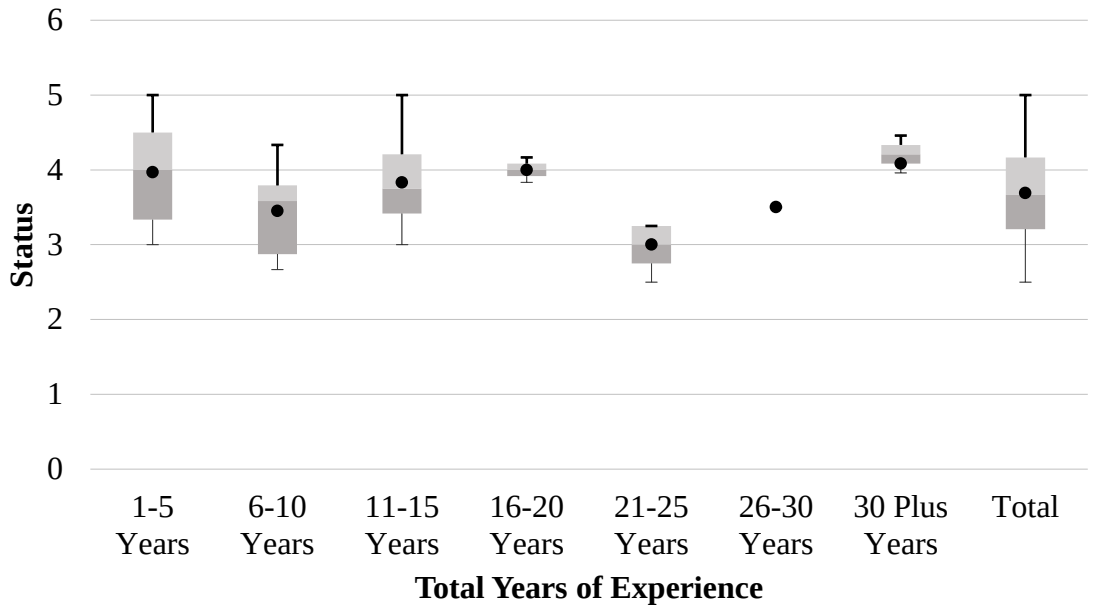
Status for Total Years in Education

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	17	33	27	7	7	3	7	100
Five-Number Summary								
Minimum	3.00	2.67	3.00	3.83	2.50	3.50	3.83	2.50
Quartile 1	3.33	2.88	3.42	3.92	2.75	3.50	3.96	3.21
Quartile 2	4.00	3.58	3.75	4.00	3.00	3.50	4.08	3.67
Quartile 3	4.50	3.79	4.21	4.08	3.25	3.50	4.21	4.17
Maximum	5.00	4.33	5.00	4.17	3.25	3.50	4.33	5.00
Measures of Central Tendency								
M	3.97	3.45	3.83	4.00	3.00	3.50	4.08	3.69
MD	4.00	3.58	3.75	4.00	3.00	3.50	4.08	3.67
Mode	NA	17.00	21.00	NA	NA	21.00	NA	21.00
SD	4.92	3.53	4.00	1.41	4.24	NA	2.12	3.89

The data were utilized to create a box plot (see Figure 3) for total years in education. The figure depicts seven series of data: one to five years in education, two to six years in education, six to 10 years in education, 11 to 15 years in education, 16 to 20 years in education, 21-25 years in education, 26 to 30 years in education, and 30 plus years in education.

Figure 3

Status for Total Years in Education



Next, data were organized and calculated based on numbers of years in current position. Values were depicted as follows: one to five years in current position, six to 10 years in current position, 11 to 15 years in current position, 16 to 20 years in current position, 21 to 25 years in current position, 26 to 30 years in current position, and 30 plus years in current position. The percentages of the sample for number of years in the current position were as follows: 33% of participants had been in the current position for one to five years, 40% for six to 10 years, 13% for 11 to 15 years, 7% for 16 to 20 years, 7% for 21 to 25 years, 0% for 26 to 30 years, and 0% for 30 plus years.

Additionally, a five-number summary was created utilizing the data for the number of years in the current position (see Table 5). Status quartiles for participants in the current position for one to five years were as follows: Quartile 1 = 3.08, Quartile 2 =

3.83, Quartile 3 = 4.46 and Quartile 4 = 5. The minimum was 2.83 and the maximum was 5. Status quartiles for participants in the current position for six to 10 years were as follows: Quartile 1 = 3.08, Quartile 2 = 3.75, Quartile 3 = 4.04, and Quartile 4 = 4.33. The minimum was 2.67 and the maximum was 4.33. Status quartiles for participants in the current position for 11 to 15 years were as follows: Quartile 1 = 3.13, Quartile 2 = 3.5, Quartile 3 = 3.92, and Quartile 4 = 4.17. The minimum was 3 and the maximum was 4.17. Status quartiles for participants in the current position for 16 to 20 years were as follows: Quartile 1 = 3.67, Quartile 2 = 3.83, Quartile 3 = 4, and Quartile 4 = 4.17. The minimum was 3.5 and the maximum was 4.17. Status quartiles for participants in the current position for 21 to 25 years were as follows: Quartile 1 = 2.75, Quartile 2 = 3, Quartile 3 = 3.25, and Quartile 4 = 3.5. The minimum was 2.5 and the maximum was 3.5. No survey participants had been in their current position for the last two categories of 26 to 30 years, or 30 plus years. Finally, measures of central tendency and the standard deviation were calculated for the total number of years in the current position in education.

Table 5

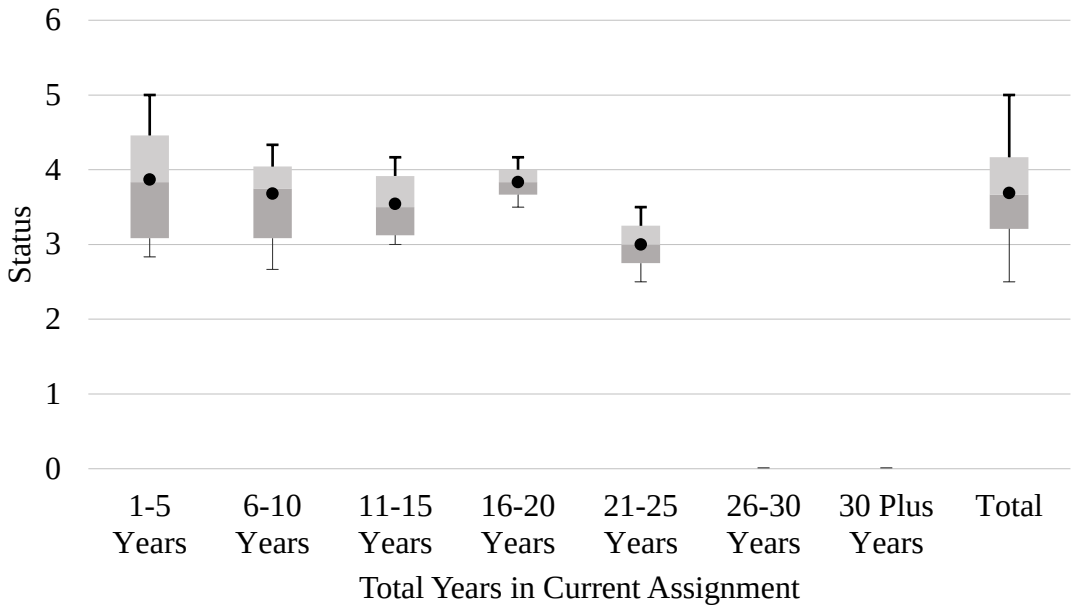
Status for Number of Years in Current Position

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	33	40	13	7	7	0	0	100
Five-Number Summary								
Minimum	2.83	2.67	3.00	3.50	2.50	NA	NA	2.50
Quartile 1	3.08	3.08	3.13	3.67	2.75	NA	NA	3.21
Quartile 2	3.83	3.75	3.50	3.83	3.00	NA	NA	3.67
Quartile 3	4.46	4.04	3.92	4.00	3.25	NA	NA	4.17
Maximum	5.00	4.33	4.17	4.17	3.50	NA	NA	5.00
Measures of Central Tendency								
M	3.87	3.68	3.54	3.83	18.00	NA	NA	3.69
MD	3.83	3.75	3.50	3.83	18.00	NA	NA	3.67
Mode	30.00	21.00	NA	NA	NA	NA	NA	21.00
SD	4.94	3.17	3.30	2.83	4.24	NA	NA	3.89

Data were used to create a box plot (see Figure 3) for the number of years in the current educational position. The figure depicts seven series of data: one through five years in the current position; six through 10 years in the current position; 11 to 15 years in the current position; 16 to 20 years in the current position; 21-25 years in the current position; 26-30 years in the current position; and 30 plus years in the current position.

Figure 4

Status for Number of Years in Current Position



Next, a five-number summary was created to depict the data represented by grade levels in which participants worked (see Table 6). Quartiles representing the concept of certainty for fifth grade faculty participants were calculated as Quartile 1 = 3, Quartile 2 = 3.5, Quartile 3 = 4.25, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Quartiles representing the concept of certainty for sixth grade faculty participants were calculated as Quartile 1 = 3.88, Quartile 2 = 4.25, Quartile 3 = 4.63, and Quartile 4 = 5. The minimum was 3.5, and the maximum was 5. Quartiles representing the concept of certainty for seventh grade faculty participants were calculated as Quartile 1 = 3.25, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 4. The minimum was 3, and the maximum was 4. Quartiles representing the concept of certainty for eighth grade faculty participants were calculated as Quartile 1 = 4, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 4. The

minimum was 4, and the maximum was 4. Quartiles representing the concept of certainty for faculty participants working with both fifth and sixth grades (middle) were calculated as Quartile 1 = 3.63, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 4.5. The minimum was 3, and the maximum was 4.5. Quartiles representing the concept of certainty for participants working with both seventh and eighth grades (junior high) were calculated as Quartile 1 = 3.5, Quartile 2 = 4, Quartile 3 = 4.25, and Quartile 4 = 4.5. The minimum was 3.5, and the maximum was 4.5. Finally, totals for the concept of certainty for fifth through eighth grade faculty participants were calculated as Quartile 1 = 3, Quartile 2 = 3, Quartile 3 = 3, and Quartile 4 = 3. The minimum was 3, and the maximum was 3.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 6

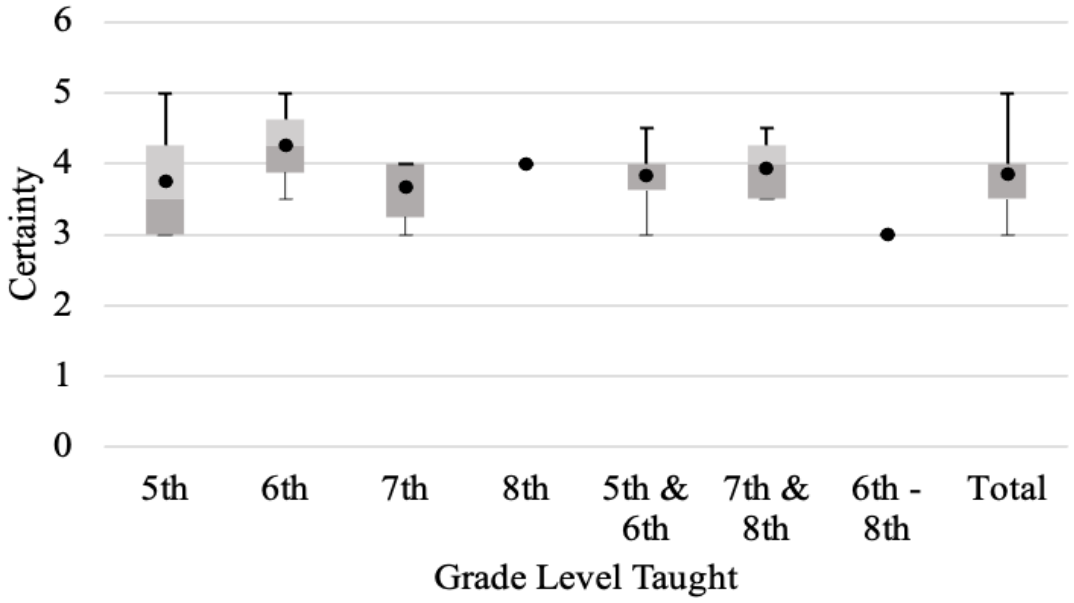
Certainty for Grade Level Taught

Values	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Middle School	Jr. High	MS/JH Mixed	Total
Percentage Of Sample	13	13	20	7	20	23	3	100
Five-Number Summary								
Minimum	3.00	3.50	3.00	4.00	3.00	3.50	3.00	3.00
Quartile 1	3.00	3.88	3.25	4.00	3.63	3.50	3.00	3.50
Quartile 2	3.50	4.25	4.00	4.00	4.00	4.00	3.00	4.00
Quartile 3	4.25	4.63	4.00	4.00	4.00	4.25	3.00	4.00
Maximum	5.00	5.00	4.00	4.00	4.50	4.50	3.00	5.00
Measures of Central Tendency								
M	3.75	4.25	3.67	4.00	3.84	3.93	3.00	3.85
MD	3.50	4.25	4.00	4.00	4.00	4.00	3.00	4.00
Mode	6.00	NA	8.00	8.00	8.00	7.00	6.00	8.00
SD	1.91	1.29	1.03	0.00	1.03	.90	NA	1.15

Data were utilized to create a box plot (see Figure 5). The figure displays seven series of data for each grade level in which survey participants work: fifth grade, sixth grade, seventh grade, eighth grade, middle (both fifth and sixth), junior high (both seventh and eighth), and total participants. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 5

Certainty for Grade Level Taught



Additionally, a five-number summary was created to depict the data represented by content taught (see Table 7). Quartiles representing the concept of certainty for faculty members teaching core subjects were calculated as Quartile 1 = 3, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Quartiles representing the concept of certainty for faculty members teaching elective subjects were calculated as Quartile 1 = 3.5, Quartile 2 = 4, Quartile 3 = 4.5, and Quartile 4 = 4.5. The minimum was 3, and the maximum was 4.5. Quartiles representing the concept of certainty for faculty members teaching special education were calculated as Quartile 1 = 3.63, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 5. The minimum was 3.5, and the maximum was 5. Quartiles representing the concept of certainty for faculty members working as school counselors were calculated as Quartile 1 = 3.25, Quartile 2 =

3.50, Quartile 3 = 3.75, and Quartile 4 = 4. The minimum was 3, and the maximum was 4.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 7

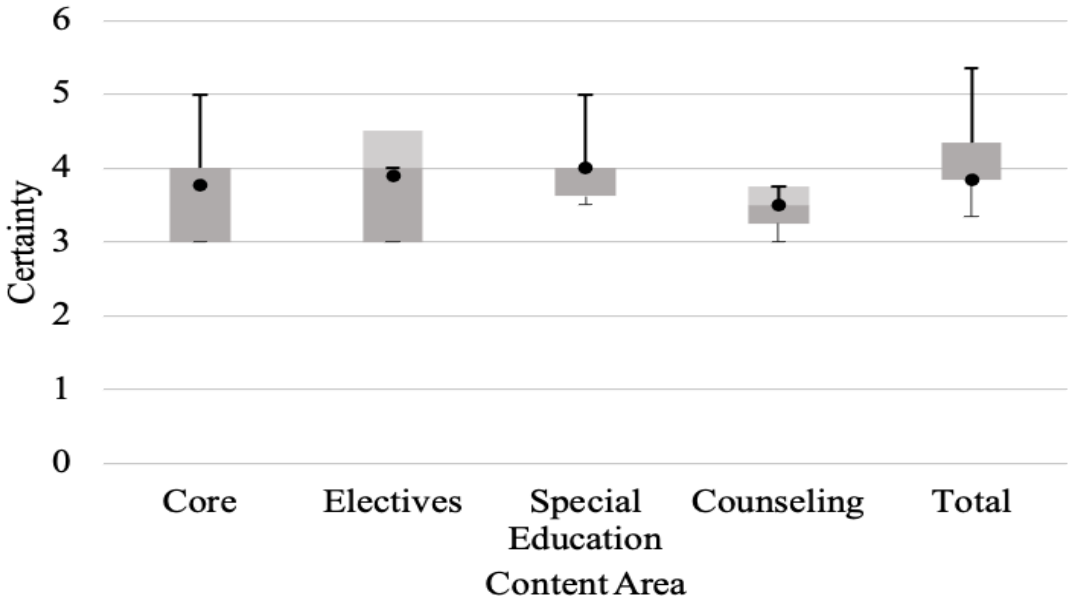
Certainty for Content Taught

Values	Core Subjects	Elective Subjects	Special Education	School Counseling	Total
Percentage of Sample	43	17	33	7	100
Five-Number Summary					
Minimum	3.00	3.00	3.50	3.00	3.00
Quartile 1	3.00	3.50	3.63	3.25	3.50
Quartile 2	4.00	4.00	4.00	3.50	4.00
Quartile 3	4.00	4.50	4.00	3.25	4.00
Maximum	5.00	4.50	5.00	4.00	5.00
Measures of Central Tendency					
M	3.77	3.90	8.00	3.50	3.85
MD	4.00	4.00	8.00	3.50	4.00
Mode	8.00	9.00	8.00	NA	8.00
SD	1.27	1.30	.94	1.41	1.15

Data were utilized to create a box plot (see Figure 6). The figure displays seven series of data for each content in which survey participants work: core subjects, elective subjects, special education, and school counseling. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 6

Certainty for Content Taught



Additionally, data were organized in a five-number summary for total years in education (see Table 8). Certainty quartiles for one through five years in education were calculated as Quartile 1 = 3.5, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 4.5. The minimum was 3.5 and the maximum was 4.5. Certainty quartiles for participants working in education for six through 10 years in education were calculated as Quartile 1 = 3, Quartile 2 = 3.25, Quartile 3 = 4, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Certainty quartiles for 11 through 15 years in education were calculated as Quartile 1 = 4, Quartile 2 = 4, Quartile 3 = 4.5, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Certainty quartiles for 16 through 20 years in education were calculated as Quartile 1 = 4, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 4. The minimum was 4, and the maximum was 4. Certainty quartiles for 21 through 25 years in education were calculated as Quartile 1 = 3.50, Quartile 2 = 3.50, Quartile 3 = 3.50, and

Quartile 4 = 3.50. The minimum was 3.50, and the maximum was 3.50. Certainty quartiles for 26 through 30 years in education were calculated as Quartile 1 = 4.50, Quartile 2 = 4.50, Quartile 3 = 4.50, and Quartile 4 = 4.50. The minimum was 4.50, and the maximum was 4.50. Certainty quartiles for participants working in education for 30 plus years were calculated as Quartile 1 = 4, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 4. The minimum was 4, and the maximum was 4. Finally, measures of central tendency and the standard deviation were calculated for total years in education.

Table 8

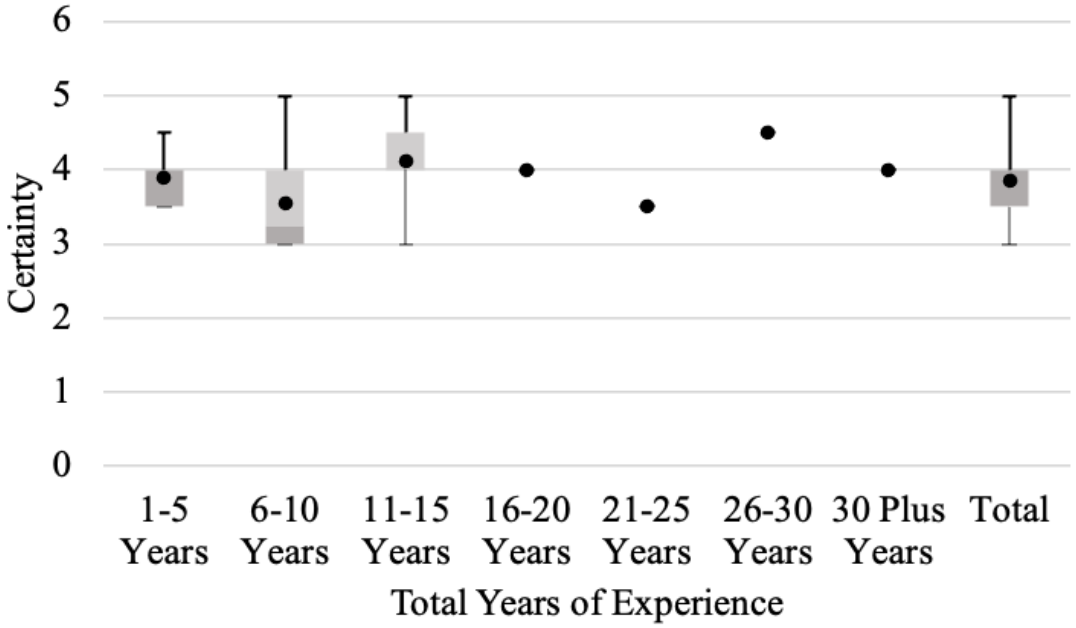
Certainty for Total Years in Education

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	17	33	27	7	7	3	7	100
Five-Number Summary								
Minimum	3.50	3.00	3.00	4.00	3.50	4.50	4.00	3.00
Quartile 1	3.50	3.00	4.00	4.00	3.50	4.50	4.00	3.50
Quartile 2	4.00	3.25	4.00	4.00	3.50	4.50	4.00	4.00
Quartile 3	4.00	4.00	4.50	4.00	3.50	4.50	4.00	8400
Maximum	4.50	5.00	5.00	4.00	3.50	4.50	4.00	5.00
Measures of Central Tendency								
M	3.90	3.55	4.13	4.00	3.50	4.50	4.00	3.85
MD	4.00	3.25	4.00	4.00	3.50	4.50	4.00	4.00
Mode	7.00	6.00	8.00	8.00	7.00	9.00	8.00	8.00
SD	.84	1.37	1.16	0.00	0.00	NA	NA	1.15

The data were utilized to create a box plot (see Figure 7) for total years in education. The figure depicts seven series of data: one to five years in education, two to six years in education, six to 10 years in education, 11 to 15 years in education, 16 to 20 years in education, 21-25 years in education, 26 to 30 years in education, and 30 plus years in education.

Figure 7

Certainty for Total Years in Education



Additionally, a five-number summary was created utilizing the data for the number of years in the current position (see Table 9). Certainty quartiles for participants in the current position for one to five years were as follows: Quartile 1 = 3.5, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 4.5. The minimum was 3, and the maximum was 4.5. Certainty quartiles for participants in the current position for six to 10 years were as follows: Quartile 1 = 3, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Certainty quartiles for participants in the current position for 11 to 15 years were as follows: Quartile 1 = 4, Quartile 2 = 4, Quartile 3 = 4.25, and Quartile 4 = 5. The minimum was 4, and the maximum was 5. Certainty quartiles for participants in the current position for 16 to 20 years were as follows: Quartile 1 = 3.63, Quartile 2 = 3.25, Quartile 3 = 3.88, and Quartile 4 = 4. The minimum was 3.5, and the

maximum was 4. Certainty quartiles for participants in the current position for 21 to 25 years were as follows: Quartile 1 = 3.75, Quartile 2 = 4, Quartile 3 = 4.25, and Quartile 4 = 4.5. The minimum was 3.5, and the maximum was 4.5. No survey participants had been in their current position for the last two categories of 26 to 30 years, or 30 plus years. Finally, measures of central tendency and the standard deviation were calculated for the total number of years in the current position in education.

Table 9

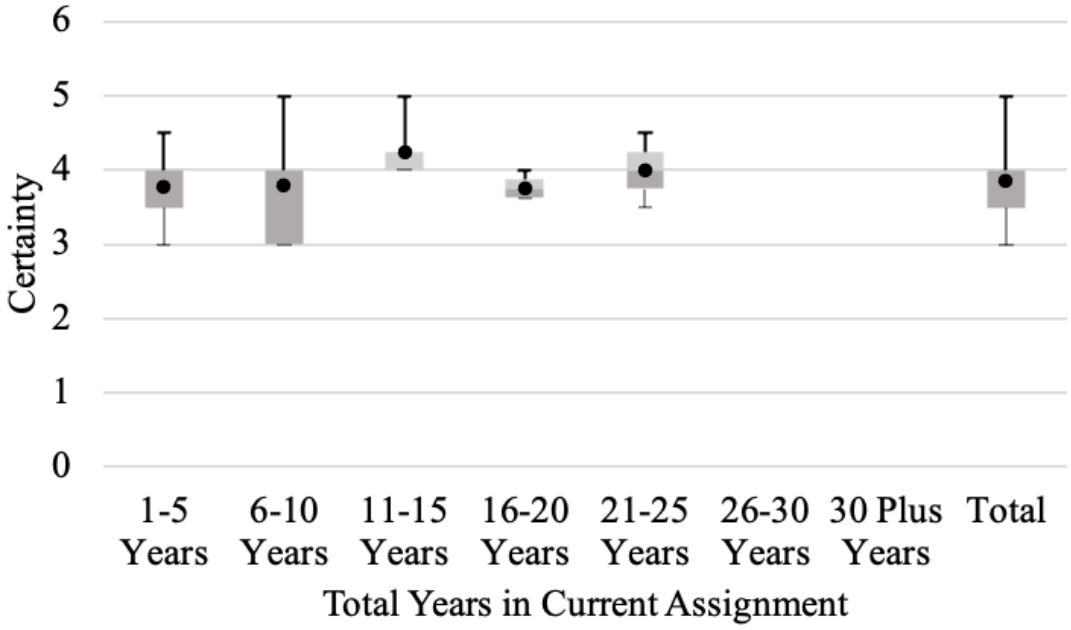
Certainty for Number of Years in Current Position

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	33	40	13	7	7	0	0	100
Five-Number Summary								
Minimum	3.00	3.00	4.00	3.50	3.50	NA	NA	3.00
Quartile 1	3.50	3.00	4.00	3.63	3.75	NA	NA	3.50
Quartile 2	4.00	4.00	4.00	3.25	4.00	NA	NA	4.00
Quartile 3	4.00	4.00	4.25	3.88	4.25	NA	NA	4.00
Maximum	4.50	5.00	5.00	4.00	4.50	NA	NA	5.00
Measures of Central Tendency								
M	3.78	3.79	4.25	3.75	4.00	00.00	00.00	3.85
MD	4.00	4.00	4.00	3.75	4.00	00.00	00.00	4.00
Mode	7.00	8.00	8.00	NA	NA	00.00	00.00	8.00
SD	1.08	1.31	1.00	.71	1.41	00.00	00.00	1.15

Data were used to create a box plot (see Figure 8) for the number of years in the current educational position. The figure depicts seven series of data: one through five years in the current position; six through 10 years in the current position; 11 to 15 years in the current position; 16 to 20 years in the current position; 21-25 years in the current position; 26-30 years in the current position; and 30 plus years in the current position.

Figure 8

Certainty for Number of Years in Current Position



Next, a five-number summary was created to depict the data represented by grade levels in which participants worked (see Table 10). Quartiles representing the concept of autonomy for fifth grade faculty participants were calculated as Quartile 1 = 4, Quartile 2 = 4.5, Quartile 3 = 5, and Quartile 4 = 5. The minimum was 4, and the maximum was 5. Quartiles representing the concept of autonomy for sixth grade faculty participants were

calculated as Quartile 1 = 3.88, Quartile 2 = 4.25, Quartile 3 = 4.5, and Quartile 4 = 4.5. The minimum was 3.5, and the maximum was 4.5. Quartiles representing the concept of autonomy for seventh grade faculty participants were calculated as Quartile 1 = 3.63, Quartile 2 = 4.25, Quartile 3 = 4.5, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Quartiles representing the concept of autonomy for eighth grade faculty participants were calculated as Quartile 1 = 3.25, Quartile 2 = 3.5, Quartile 3 = 3.75, and Quartile 4 = 4. The minimum was 3, and the maximum was 4. Quartiles representing the concept of autonomy for faculty participants working with both fifth and sixth grades (middle) were calculated as Quartile 1 = 3.63, Quartile 2 = 4.25, Quartile 3 = 4.5, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Quartiles representing the concept of autonomy for participants working with both seventh and eighth grades (junior high) were calculated as Quartile 1 = 4.25, Quartile 2 = 4.5, Quartile 3 = 5, and Quartile 4 = 5. The minimum was 3.5, and the maximum was 5. Finally, totals for the concept of autonomy for fifth through eighth grade faculty participants were calculated as Quartile 1 = 4, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 4. The minimum was 4, and the maximum was 4.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al.,

2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 10

Autonomy for Grade Level Taught

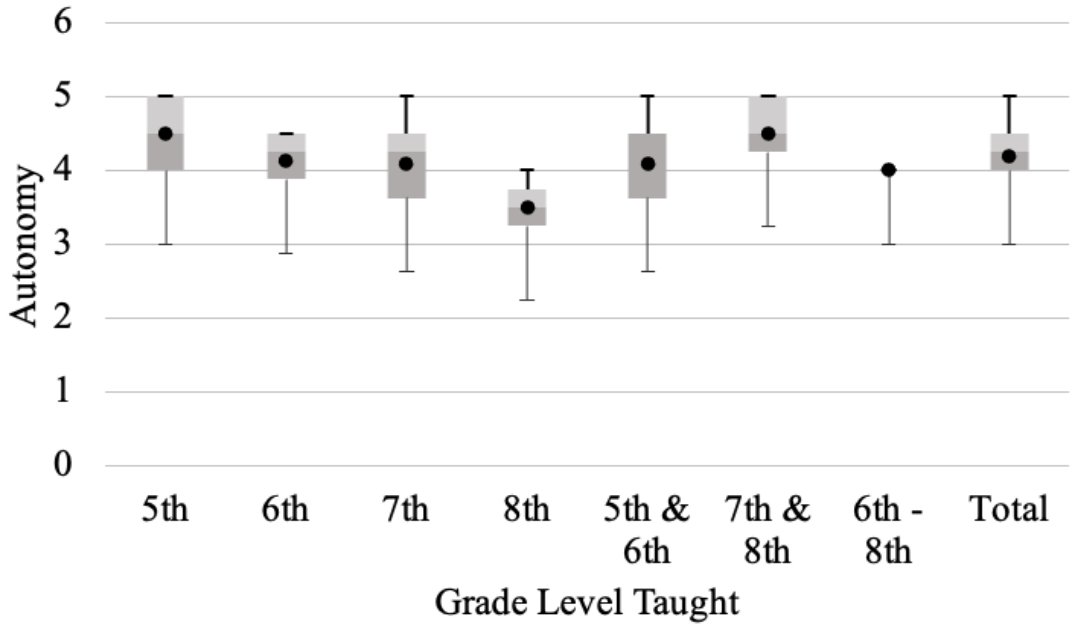
Values	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	All Middle	All JH	MS/JH Mixed	Total
Percentage Of Sample	13	13	20	7	20	23	3	100
Five-Number Summary								
Minimum	4.00	3.50	3.00	3.00	3.00	3.50	4.00	3.00
Quartile 1	4.00	3.88	3.63	3.25	3.63	4.25	4.00	4.00
Quartile 2	4.50	4.25	4.25	3.50	4.25	4.50	4.00	4.25
Quartile 3	5.00	4.50	4.50	3.75	4.50	5.00	4.00	4.50
Maximum	5.00	4.50	5.00	4.00	5.00	5.00	4.00	5.00
Measures of Central Tendency								
M	4.50	4.13	4.09	3.50	4.09	4.50	4.00	4.20
MD	4.50	4.25	4.25	3.50	4.50	4.50	4.00	4.25
Mode	10.00	9.00	9.00	NA	9.00	10.00	8.00	9.00
SD	1.15	.96	1.48	1.41	1.47	1.15	NA	1.28

Data were utilized to create a box plot (see Figure 9). The figure displays seven series of data for each grade level in which survey participants work: fifth grade, sixth grade, seventh grade, eighth grade, middle (both fifth and sixth), junior high (both

seventh and eighth), and total participants. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 9

Autonomy for Grade Level Taught



Additionally, a five-number summary was created to depict the data represented by content taught (see Table 11). Quartiles representing the concept of autonomy for faculty members teaching core subjects were calculated as Quartile 1 = 4, Quartile 2 = 4, Quartile 3 = 4.5, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Quartiles representing the concept of autonomy for faculty members teaching elective subjects were calculated as Quartile 1 = 4, Quartile 2 = 4.5, Quartile 3 = 5, and Quartile 4 = 5. The minimum was 3.5, and the maximum was 5. Quartiles representing the concept of autonomy for faculty members teaching special education were calculated as Quartile 1 = 3.63, Quartile 2 = 4, Quartile 3 = 4.88, and Quartile 4 = 5. The minimum was 3, and

the maximum was 5. Quartiles representing the concept of autonomy for faculty members working as school counselors were calculated as Quartile 1 = 4.5, Quartile 2 = 4.5, Quartile 3 = 4.5, and Quartile 4 = 4.5. The minimum was 4.5, and the maximum was 4.5.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 11

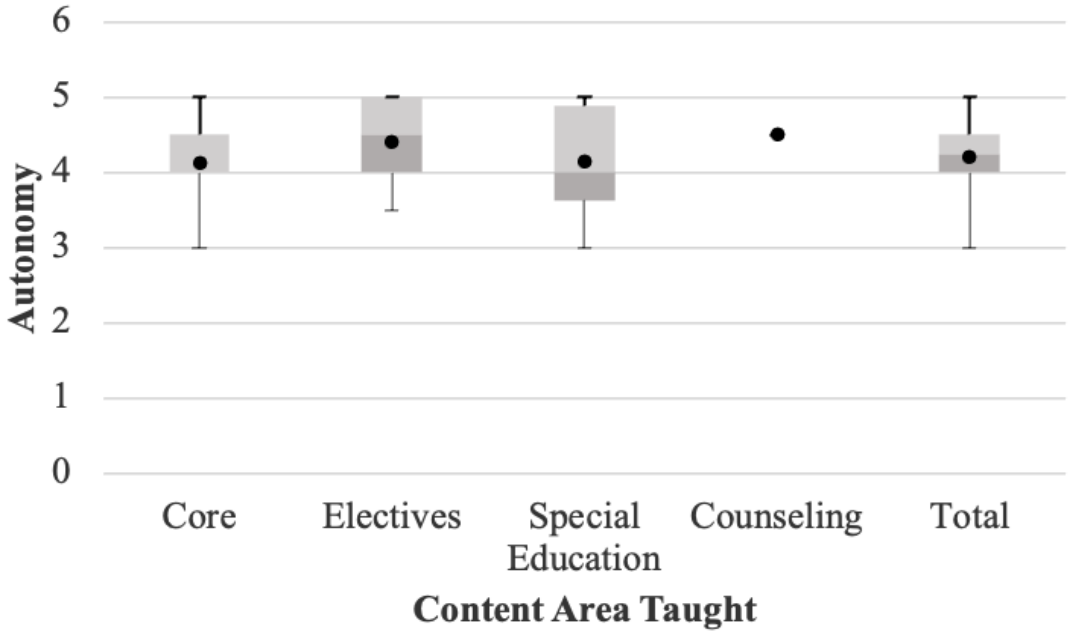
Autonomy for Content in Which Participants Work

Values	Core Subjects	Elective Subjects	Special Education	School Counseling
Percentage of Sample	43	17	33	7
Five-Number Summary				
Minimum	3.00	3.50	3.00	4.50
Quartile 1	4.00	4.00	3.63	4.50
Quartile 2	4.00	4.50	4.00	4.50
Quartile 3	4.50	5.00	4.88	4.50
Maximum	5.00	5.00	5.00	4.50
Measures of Central Tendency				
M	4.12	4.40	4.15	4.50
MD	4.00	4.50	4.00	4.50
Mode	8.00	10.00	8.00	9.00
SD	1.30	1.30	1.42	0.00

Data were utilized to create a box plot (see Figure 10). The figure displays seven series of data for each content in which survey participants work: core subjects, elective subjects, special education, and school counseling. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 10

Autonomy for Content Taught



Additionally, data were organized in a five-number summary for total years in education (see Table 12). Autonomy quartiles for one through five years in education were calculated as Quartile 1 = 4, Quartile 2 = 4.5, Quartile 3 = 5, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Autonomy quartiles for participants working in education for six through 10 years in education were calculated as Quartile 1 = 3.63, Quartile 2 = 4, Quartile 3 = 4.5, and Quartile 4 = 4.5. The minimum was 3, and the maximum was 4.5. Autonomy quartiles for 11 through 15 years in education were calculated as Quartile 1 = 3.5, Quartile 2 = 4, Quartile 3 = 5, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Autonomy quartiles for 16 through 20 years in education were calculated as Quartile 1 = 4.5, Quartile 2 = 4.5, Quartile 3 = 4.5 and Quartile 4 = 4.5. The minimum was 4.5, and the maximum was 4.5. Autonomy quartiles

for 21 through 25 years in education were calculated as Quartile 1 = 4.13, Quartile 2 = 4.24, Quartile 3 = 4.38, and Quartile 4 = 4.5. The minimum was 4, and the maximum was 4.5. Autonomy quartiles for 26 through 30 years in education were calculated as Quartile 1 = 5, Quartile 2 = 5, Quartile 3 = 5, and Quartile 4 = 5. The minimum was 5, and the maximum was 5. Autonomy quartiles for participants working in education for 30 plus years were calculated as Quartile 1 = 4.13, Quartile 2 = 4.25, Quartile 3 = 4.38, and Quartile 4 = 4.5. The minimum was 4, and the maximum was 4.5. Finally, measures of central tendency and the standard deviation were calculated for total years in education.

Table 12

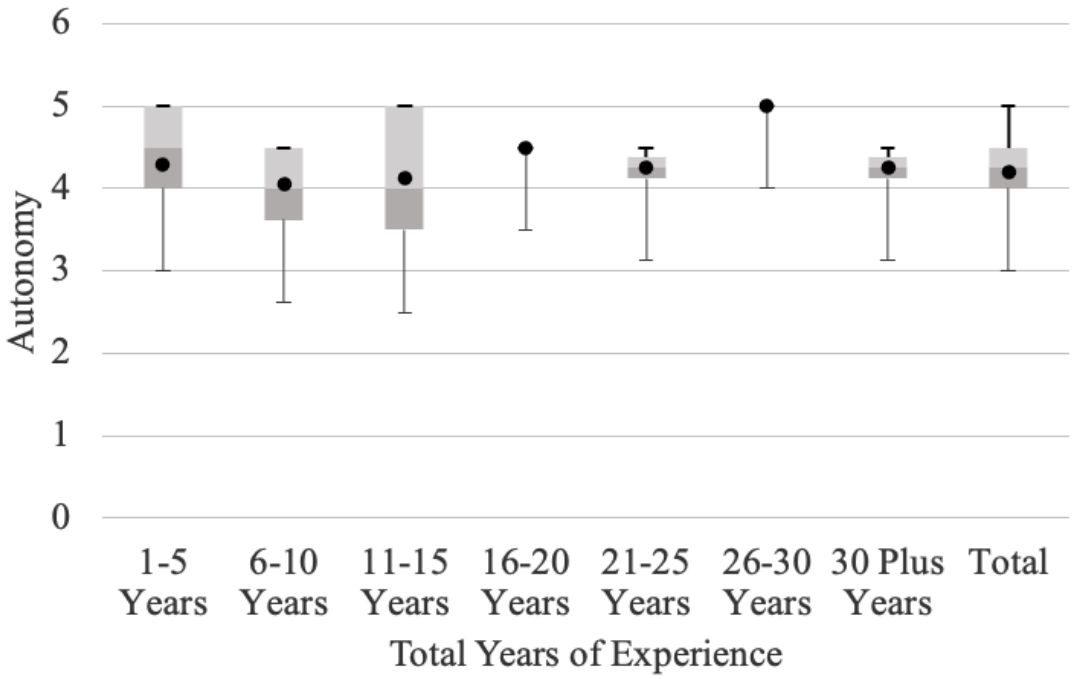
Autonomy for Total Years in Education

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	17	33	27	7	7	3	7	100
Five-Number Summary								
Minimum	3.00	3.00	3.00	4.50	4.00	5.00	4.00	3.00
Quartile 1	4.00	3.63	3.50	4.50	4.13	5.00	4.13	4.00
Quartile 2	4.50	4.00	4.00	4.50	4.25	5.00	4.25	4.25
Quartile 3	5.00	4.50	5.00	4.50	4.38	5.00	4.38	4.50
Maximum	5.00	4.50	5.00	4.50	4.50	5.00	4.50	5.00
Measures of Central Tendency								
M	4.30	4.05	4.13	4.50	4.25	5.00	4.25	4.20
MD	4.50	4.00	4.00	4.50	4.25	5.00	4.25	4.25
Mode	10.00	8.00	10.00	9.00	NA	10.00	NA	9.00
SD	1.67	1.20	1.58	0.00	.71	NA	.71	1.28

The data were utilized to create a box plot (see Figure 11) for total years in education. The figure depicts seven series of data: one to five years in education, two to six years in education, six to 10 years in education, 11 to 15 years in education, 16 to 20 years in education, 21-25 years in education, 26 to 30 years in education, and 30 plus years in education.

Figure 11

Autonomy for Total Years in Education



Additionally, a five-number summary was created utilizing the data for the number of years in the current position (see Table 13). Autonomy quartiles for participants in the current position for one to five years were as follows: Quartile 1 = 3.63, Quartile 2 = 4.25, Quartile 3 = 4.5, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Autonomy quartiles for participants in the current position for six to 10 years were as follows: Quartile 1 = 4, Quartile 2 = 4.5, Quartile 3 = 5, and Quartile 4 = 5. The minimum was 3.5, and the maximum was 5. Autonomy quartiles for participants in the current position for 11 to 15 years were as follows: Quartile 1 = 3.38, Quartile 2 = 3.75, Quartile 3 = 4, and Quartile 4 = 4. The minimum was 3, and the maximum was 4. Autonomy quartiles for participants in the current position for 16 to 20 years were as

follows: Quartile 1 = 4.5, Quartile 2 = 4.5, Quartile 3 = 4.5, and Quartile 4 = 4.5. The minimum was 4.5, and the maximum was 4.5. Autonomy quartiles for participants in the current position for 21 to 25 years were as follows: Quartile 1 = 4.5, Quartile 2 = 4.5, Quartile 3 = 4.75, and Quartile 4 = 5. The minimum was 4, and the maximum was 5. No survey participants had been in their current position for the last two categories of 26 to 30 years, or 30 plus years. Finally, measures of central tendency and the standard deviation were calculated for the total number of years in the current position in education.

Table 13

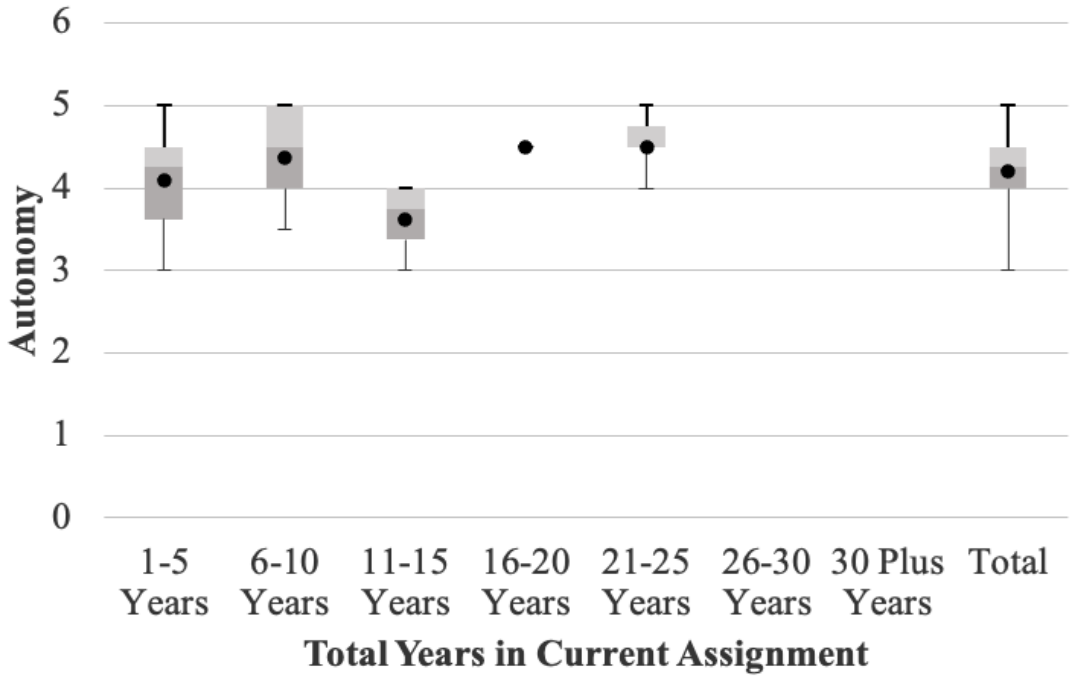
Autonomy for Number of Years in Current Position

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	33	40	13	7	7	0	0	100
Five-Number Summary								
Minimum	3.00	3.50	3.00	4.50	4.00	NA	NA	3.00
Quartile 1	3.63	4.00	3.38	4.50	4.50	NA	NA	4.00
Quartile 2	4.25	4.50	3.75	4.50	4.50	NA	NA	4.25
Quartile 3	4.50	5.00	4.00	4.50	4.75	NA	NA	4.50
Maximum	5.00	5.00	4.00	4.50	5.00	NA	NA	5.00
Measures of Central Tendency								
M	4.10	4.38	3.63	4.50	4.50	NA	NA	4.20
MD	4.25	4.50	3.75	4.50	4.50	NA	NA	4.25
Mode	9.00	10.00	8.00	4.50	NA	NA	NA	9.00
SD	1.48	1.14	.96	0.00	1.41	NA	NA	1.28

Data were used to create a box plot (see Figure 12) for the number of years in the current educational position. The figure depicts seven series of data: one through five years in the current position; six through 10 years in the current position; 11 to 15 years in the current position, 16 to 20 years in the current position, 21-25 years in the current position, 26-30 years in the current position, and 30 plus years in the current position.

Figure 12

Autonomy for Number of Years in Current Position



Next, a five-number summary was created to depict the data represented by grade levels in which participants worked (see Table 14). Quartiles representing the concept of relatedness for fifth grade faculty participants were calculated as Quartile 1 = 3.31, Quartile 2 = 4, Quartile 3 = 4.63, and Quartile 4 = 5. The minimum was 2.75, and the maximum was 5. Quartiles representing the concept of relatedness for sixth grade faculty participants were calculated as Quartile 1 = 3.94, Quartile 2 = 4, Quartile 3 = 4.25, and Quartile 4 = 5. The minimum was 3.75, and the maximum was 5. Quartiles representing the concept of relatedness for seventh grade faculty participants were calculated as Quartile 1 = 3.06, Quartile 2 = 3.25, Quartile 3 = 3.44, and Quartile 4 = 3.75. The minimum was 2.5, and the maximum was 3.75. Quartiles representing the concept of

relatedness for eighth grade faculty participants were calculated as Quartile 1 = 4.06, Quartile 2 = 4.13, Quartile 3 = 4.19, and Quartile 4 = 4.25. The minimum was 4, and the maximum was 4.25. Quartiles representing the concept of relatedness for faculty participants working with both fifth and sixth grades (middle) were calculated as Quartile 1 = 3.69, Quartile 2 = 4.25, Quartile 3 = 4.25, and Quartile 4 = 4.5. The minimum was 2.25, and the maximum was 4.5. Quartiles representing the concept of relatedness for participants working with both seventh and eighth grades (junior high) were calculated as Quartile 1 = 3.5, Quartile 2 = 3.75, Quartile 3 = 3.88, and Quartile 4 = 4.25. The minimum was 3.5, and the maximum was 4.25. Finally, totals for the concept of relatedness for fifth through eighth grade faculty participants were calculated as Quartile 1 = 3.5, Quartile 2 = 3.5, Quartile 3 = 3.5, and Quartile 4 = 3.5. The minimum was 3.5, and the maximum was 3.5.

Additionally, demographic data were analyzed to create a representation of the sample. The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics. The mean was calculated to find the midpoint of the data set. Additional measures of central tendency, including the median and mode were calculated to further summarize the data. The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 14

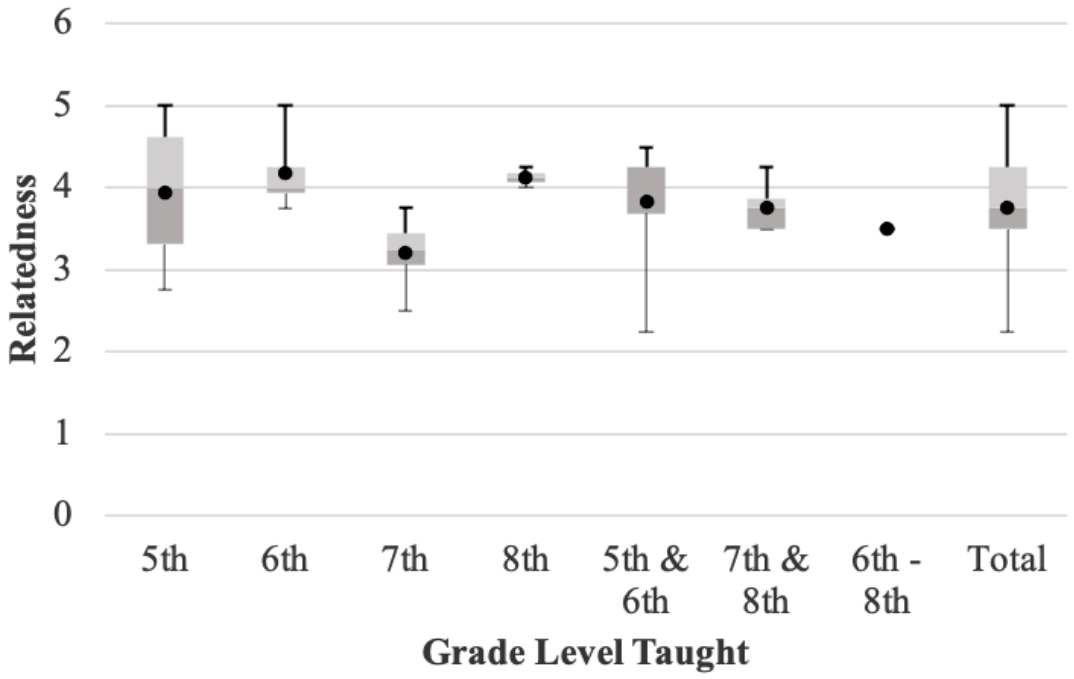
Relatedness for Grade Level Taught

Values	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	All Middle	All JH	MS/JH Mixed	Total
Percentage Of Sample	13	13	20	7	20	23	3	100
Five-Number Summary								
Minimum	2.75	3.75	2.50	4.00	2.25	3.50	3.50	2.25
Quartile 1	3.31	3.94	3.06	4.06	3.69	3.50	3.50	3.50
Quartile 2	4.00	4.00	3.25	4.13	4.25	3.75	3.50	3.75
Quartile 3	4.63	4.25	3.44	4.19	4.25	3.88	3.50	4.25
Maximum	5.00	5.00	3.75	4.25	4.50	4.25	3.50	5.00
Measures of Central Tendency								
M	3.94	4.19	3.21	4.13	3.83	3.75	3.50	3.76
MD	4.00	4.00	3.25	4.13	4.25	3.75	3.50	3.75
Mode	NA	16.00	13.00	NA	17.00	15.00	14.00	14.00
SD	4.03	2.22	1.72	.71	3.39	1.15	NA	2.58

Data were utilized to create a box plot (see Figure 13). The figure displays seven series of data for each grade level in which survey participants work: fifth grade, sixth grade, seventh grade, eighth grade, middle (both fifth and sixth), junior high (both seventh and eighth), and total participants. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 13

Relatedness for Grade Level Taught



Additionally, a five-number summary was created to depict the data represented by content taught (see Table 15). Quartiles representing the concept of relatedness for faculty members teaching core subjects were calculated as Quartile 1 = 3.25, Quartile 2 = 3.5, Quartile 3 = 4, and Quartile 4 = 5. The minimum was 2.5, and the maximum was 5. Quartiles representing the concept of relatedness for faculty members teaching elective subjects were calculated as Quartile 1 = 3.5, Quartile 2 = 3.75, Quartile 3 = 4.25, and Quartile 4 = 4.25. The minimum was 3.5, and the maximum was 4.25. Quartiles representing the concept of relatedness for faculty members teaching special education were calculated as Quartile 1 = 3.56, Quartile 2 = 3.88, Quartile 3 = 4.44, and Quartile 4 = 5. The minimum was 2.25, and the maximum was 5. Quartiles representing the concept

of relatedness for faculty members working as school counselors were calculated as Quartile 1 = 3.69, Quartile 2 = 3.88, Quartile 3 = 4.06, and Quartile 4 = 4.5. The minimum was 3.5, and the maximum was 4.5.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 15

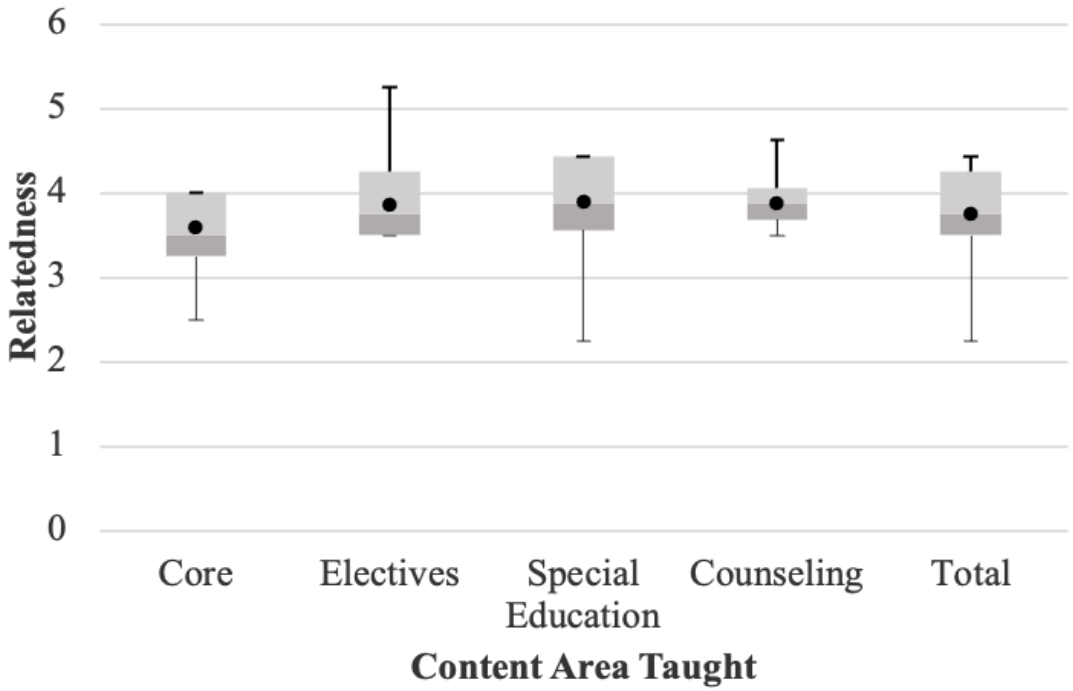
Relatedness for Content Taught

Values	Core Subjects	Elective Subjects	Special Education	School Counseling	Total
Percentage of Sample	43	17	33	7	100
Five-Number Summary					
Minimum	2.50	3.50	2.25	3.50	2.25
Quartile 1	3.25	3.50	3.56	3.69	3.50
Quartile 2	3.50	3.75	3.88	3.88	3.75
Quartile 3	4.00	4.25	4.44	4.06	4.25
Maximum	5.00	4.25	5.00	4.50	5.00
Measures of Central Tendency					
M	3.60	3.85	3.90	3.88	3.76
MD	3.50	3.75	3.88	3.88	3.75
Mode	16.00	14.00	14.00	NA	14.00
SD	2.69	1.52	3.03	2.12	2.60

Data were utilized to create a box plot (see Figure 14). The figure displays seven series of data for each content in which survey participants work: core subjects, elective subjects, special education, and school counseling. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 14

Relatedness for Content Taught



Additionally, data were organized in a five-number summary for total years in education (see Table 16). Relatedness quartiles for one through five years in education were calculated as Quartile 1 = 3.5, Quartile 2 = 4, Quartile 3 = 4.5, and Quartile 4 = 5. The minimum was 3, and the maximum was 5. Relatedness quartiles for participants working in education for six through 10 years in education were calculated as Quartile 1 = 3.25, Quartile 2 = 3.5, Quartile 3 = 3.94, and Quartile 4 = 4.5. The minimum was 2.5, and the maximum was 4.5. Relatedness quartiles for 11 through 15 years in education were calculated as Quartile 1 = 3.5, Quartile 2 = 4.13, Quartile 3 = 4.31, and Quartile 4 = 5. The minimum was 3.5, and the maximum was 5. Relatedness quartiles for 16 through 20 years in education were calculated as Quartile 1 = 3.75, Quartile 2 = 3.75, Quartile 3 =

3.75, and Quartile 4 = 3.75. The minimum was 3.75 and the maximum was 3.75. Relatedness quartiles for 21 through 25 years in education were calculated as Quartile 1 = 2.63, Quartile 2 = 3, Quartile 3 = 3.38, and Quartile 4 = 3.75. The minimum was 2.25, and the maximum was 3.75. Relatedness quartiles for 26 through 30 years in education were calculated as Quartile 1 = 3.5, Quartile 2 = 3.5, Quartile 3 = 3.5, and Quartile 4 = 3.5. The minimum was 3.5, and the maximum was 3.5. Relatedness quartiles for participants working in education for 30 plus years were calculated as Quartile 1 = 4.25, Quartile 2 = 4.25, Quartile 3 = 4.25, and Quartile 4 = 4.25. The minimum was 4.25, and the maximum was 4.25. Finally, measures of central tendency and the standard deviation were calculated for total years in education.

Table 16

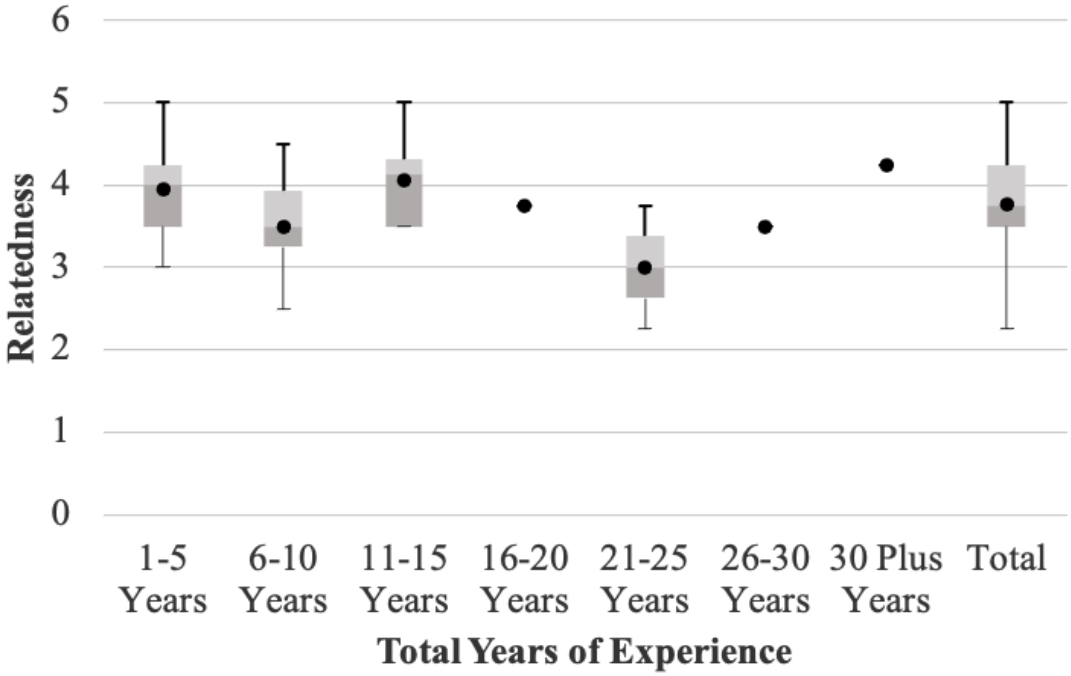
Relatedness for Total Years in Education

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	17	33	27	7	7	3	7	100
Five-Number Summary								
Minimum	3.00	2.50	3.50	3.75	2.25	3.50	4.25	2.25
Quartile 1	3.50	3.25	3.50	3.75	2.63	3.50	4.25	3.50
Quartile 2	4.00	3.50	4.13	3.75	3.00	3.50	4.25	3.75
Quartile 3	4.50	3.94	4.31	3.75	3.38	3.50	4.25	4.25
Maximum	5.00	4.50	5.00	3.75	3.75	3.50	4.25	5.00
Measures of Central Tendency								
M	3.95	3.50	4.06	3.75	3.00	3.50	4.25	3.76
MD	4.00	3.50	4.13	3.75	3.00	3.50	4.25	3.75
Mode	NA	13.00	14.00	15.00	NA	14.00	17.00	14.00
SD	3.03	2.40	2.19	0.00	4.24	14.00	NA	2.58

The data were utilized to create a box plot (see Figure 15) for total years in education. The figure depicts seven series of data: one to five years in education, two to six years in education, six to 10 years in education, 11 to 15 years in education, 16 to 20 years in education, 21-25 years in education, 26 to 30 years in education, and 30 plus years in education.

Figure 15

Relatedness for Total Years in Education



Additionally, a five-number summary was created utilizing the data for the number of years in the current position (see Table 17). Relatedness quartiles for participants in the current position for one to five years were as follows: Quartile 1 = 3.31, Quartile 2 = 4, Quartile 3 = 4.25, and Quartile 4 = 5. The minimum was 2.5, and the maximum was 5. Relatedness quartiles for participants in the current position for six to 10 years were as follows: Quartile 1 = 3.5, Quartile 2 = 3.63, Quartile 3 = 4.06, and Quartile 4 = 5. The minimum was 2.75, and the maximum was 5. Relatedness quartiles for participants in the current position for 11 to 15 years were as follows: Quartile 1 = 3.88, Quartile 2 = 4.13, Quartile 3 = 4.31, and Quartile 4 = 4.2. The minimum was 3.5, and the maximum was 4.5. Relatedness quartiles for participants in the current position

for 16 to 20 years were as follows: Quartile 1 = 3.75, Quartile 2 = 3.75, Quartile 3 = 3.75, and Quartile 4 = 3.75. The minimum was 3.75, and the maximum was 3.75. Relatedness quartiles for participants in the current position for 21 to 25 years were as follows: Quartile 1 = 2.25, Quartile 2 = 2.88, Quartile 3 = 3.19, and Quartile 4 = 3.5. The minimum was 2.25, and the maximum was 3.5. No survey participants had been in their current position for the last two categories of 26 to 30 years, or 30 plus years. Finally, measures of central tendency and the standard deviation were calculated for the total number of years in the current position in education.

Table 17

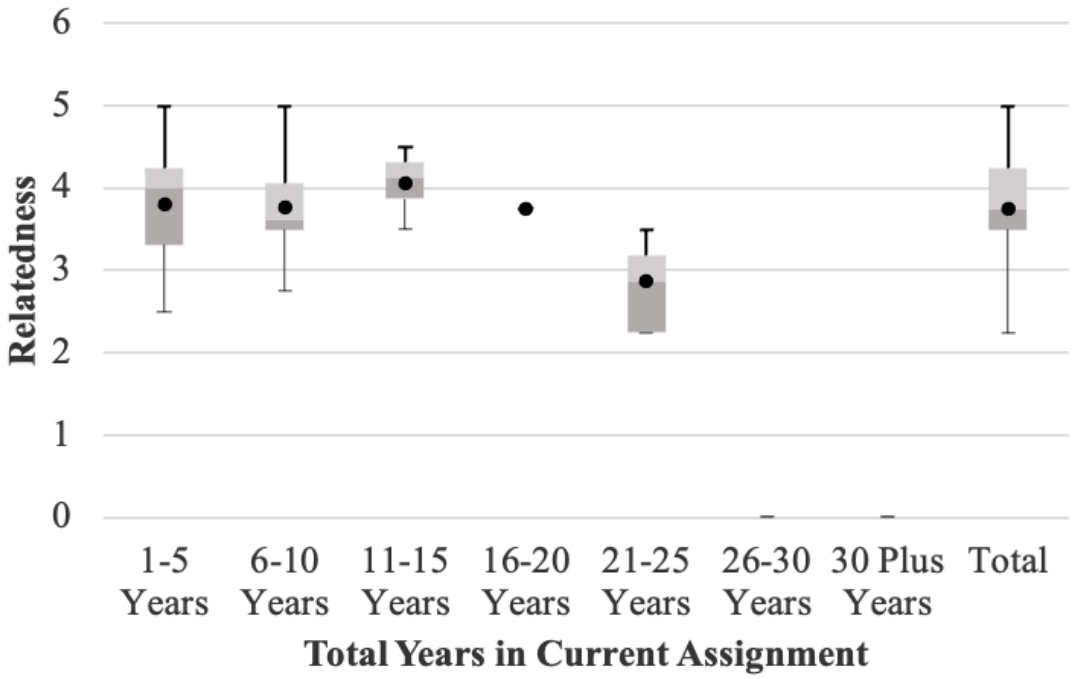
Relatedness for Number of Years in Current Position

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	33	40	13	7	7	0	0	100
Five-Number Summary								
Minimum	2.50	2.75	3.50	3.75	2.25	NA	NA	2.25
Quartile 1	3.31	3.50	3.88	3.75	2.25	NA	NA	3.50
Quartile 2	4.00	3.63	4.13	3.75	2.88	NA	NA	3.75
Quartile 3	4.25	4.06	4.31	3.75	3.19	NA	NA	4.50
Maximum	5.00	5.00	4.50	3.75	3.5	NA	NA	5.00
Measures of Central Tendency								
M	3.80	3.77	16.25	3.75	2.88	NA	NA	3.76
MD	4.00	3.63	16.50	3.75	2.88	NA	NA	3.75
Mode	17.00	14.00	NA	15.00	NA	NA	NA	14.00
SD	2.94	2.39	1.71	00.00	3.54	NA	NA	2.58

Data were used to create a box plot (see Figure 16) for the number of years in the current educational position. The figure depicts seven series of data: one through five years in the current position; six through 10 years in the current position; 11 to 15 years in the current position; 16 to 20 years in the current position; 21-25 years in the current position; 26-30 years in the current position; and 30 plus years in the current position.

Figure 16

Relatedness for Number of Years in Current Position



Next, a five-number summary was created to depict the data represented by grade levels in which participants worked (see Table 18). Quartiles representing the concept of fairness for fifth grade faculty participants were calculated as Quartile 1 = 3.25, Quartile 2 = 4, Quartile 3 = 4.63, and Quartile 4 = 5. The minimum was 2.5, and the maximum was 5. Quartiles representing the concept of fairness for sixth grade faculty participants were calculated as Quartile 1 = 3.5, Quartile 2 = 3.75, Quartile 3 = 4.13, and Quartile 4 = 4.5. The minimum was 3.5, and the maximum was 4.5. Quartiles representing the concept of fairness for seventh grade faculty participants were calculated as Quartile 1 = 3, Quartile 2 = 3.25, Quartile 3 = 3.5, and Quartile 4 = 3.5. The minimum was 3, and the maximum was 3.5. Quartiles representing the concept of fairness for eighth grade faculty

participants were calculated as Quartile 1 = 2.5, Quartile 2 = 2.5, Quartile 3 = 2.5, and Quartile 4 = 2.5. The minimum was 2.5, and the maximum was 2.5. Quartiles representing the concept of fairness for faculty participants working with both fifth and sixth grades (middle) were calculated as Quartile 1 = 3, Quartile 2 = 3.25, Quartile 3 = 3.88, and Quartile 4 = 4. The minimum was 2, and the maximum was 4. Quartiles representing the concept of fairness for participants working with both seventh and eighth grades (junior high) were calculated as Quartile 1 = 3.25, Quartile 2 = 3.5, Quartile 3 = 4, and Quartile 4 = 4.5. The minimum was 3, and the maximum was 4.5. Finally, totals for the concept of fairness for fifth through eighth grade faculty participants were calculated as Quartile 1 = 3.5, Quartile 2 = 3.5, Quartile 3 = 3.5, and Quartile 4 = 3.5. The minimum was 3.5, and the maximum was 3.5.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 18

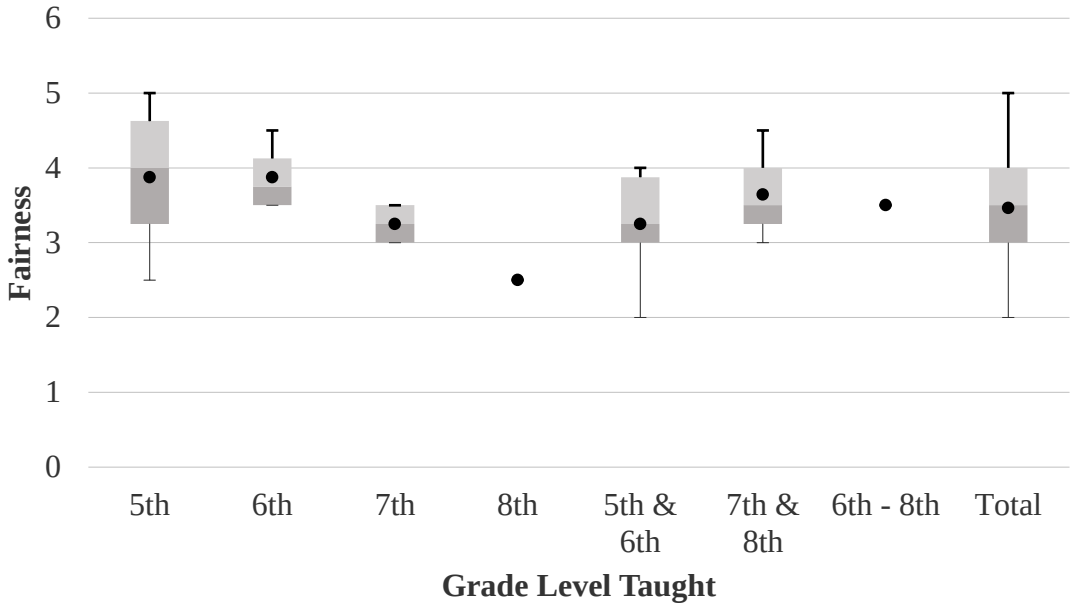
Fairness for Grade Level Taught

Values	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	All Middle	All JH	MS/JH Mix	Total
Percentage Of Sample	13	13	20	7	20	23	3	100
Five-Number Summary								
Minimum	2.50	3.50	3.00	2.50	2.00	3.00	3.50	2.00
Quartile 1	3.25	3.50	3.00	2.50	3.00	3.25	3.50	3.00
Quartile 2	4.00	3.75	3.25	2.50	3.25	3.50	3.50	3.50
Quartile 3	4.63	4.13	3.50	2.50	3.88	4.00	3.50	4.00
Maximum	5.00	4.50	3.50	2.50	4.00	4.50	3.50	5.00
Measures of Central Tendency								
M	3.88	3.88	3.25	2.50	3.25	3.65	3.50	3.47
MD	4.00	3.75	3.25	2.50	3.25	3.50	3.50	3.50
Mode	NA	7.00	6.00	5.00	6.00	6.00	3.50	7.00
SD	2.22	.96	.55	00.00	1.52	1.11	0.00	1.36

Data were utilized to create a box plot (see Figure 17). The figure displays seven series of data for each grade level in which survey participants work: fifth grade, sixth grade, seventh grade, eighth grade, middle (both fifth and sixth), junior high (both seventh and eighth), and total participants. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 17

Fairness for Grade Level Taught



Additionally, a five-number summary was created to depict the data represented by content taught (see Table 19). Quartiles representing the concept of fairness for faculty members teaching core subjects were calculated as Quartile 1 = 3, Quartile 2 = 3.5, Quartile 3 = 3.5, and Quartile 4 = 4.5. The minimum was 2.5, and the maximum was 4.5. Quartiles representing the concept of fairness for faculty members teaching elective subjects were calculated as Quartile 1 = 3.5, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 4.5. The minimum was 3, and the maximum was 4.5. Quartiles representing the concept of fairness for faculty members teaching special education were calculated as Quartile 1 = 3.13, Quartile 2 = 3.5 Quartile 3 = 3.88, and Quartile 4 = 5. The minimum was 2, and the maximum was 5. Quartiles representing the concept of fairness for faculty members working as school counselors were calculated as Quartile 1 = 3.25, Quartile 2 = 3.5, Quartile 3 = 3.75, and Quartile 4 = 4. The minimum was 3, and the maximum was 4.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 19

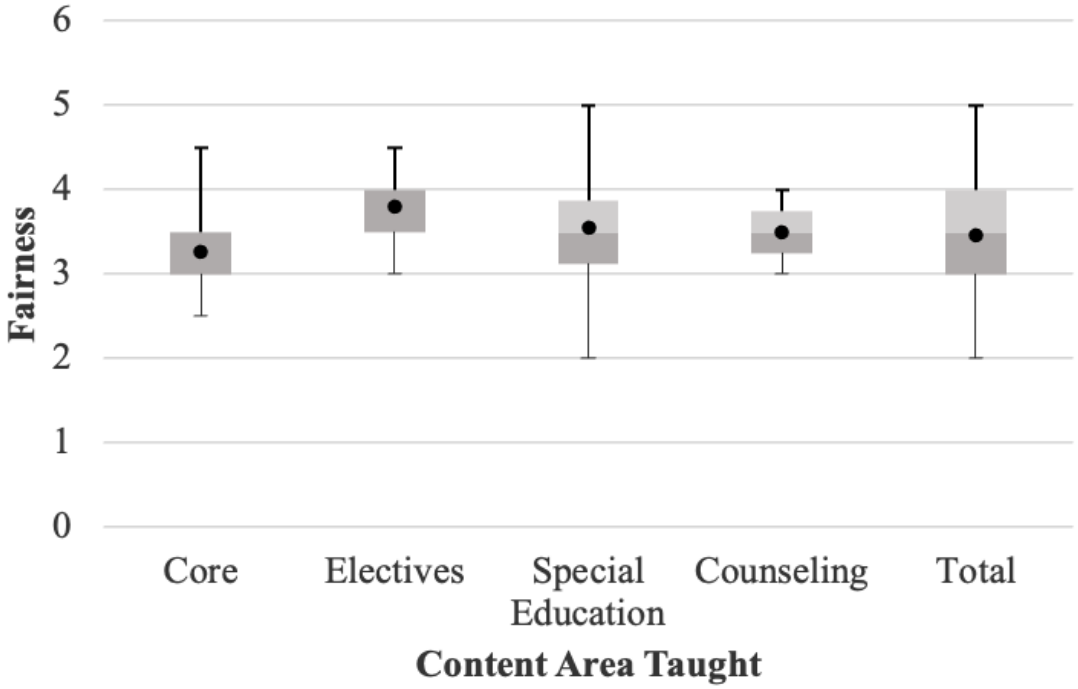
Fairness for Content Taught

Values	Core Subjects	Elective Subjects	Special Education	School Counseling	Total
Percentage of Sample	43	17	33	7	100
Five-Number Summary					
Minimum	2.50	3.00	2.00	3.00	2.00
Quartile 1	3.00	3.50	3.13	3.25	3.00
Quartile 2	3.50	4.00	3.50	3.50	3.50
Quartile 3	3.50	4.00	3.88	3.75	4.00
Maximum	4.50	4.50	5.00	4.00	5.00
Measures of Central Tendency					
M	3.27	3.80	3.55	3.50	3.47
MD	3.50	4.00	3.50	3.50	3.50
Mode	7.00	8.00	7.00	NA	
SD	1.20	1.14	1.66	1.41	1.36

Data were utilized to create a box plot (see Figure 18). The figure displays seven series of data for each content in which survey participants work: core subjects, elective subjects, special education, and school counseling. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 18

Fairness for Content Taught



Additionally, data were organized in a five-number summary for total years in education (see Table 20). Fairness quartiles for one through five years in education were calculated as Quartile 1 = 3.5, Quartile 2 = 73.5 Quartile 3 = 3.5, and Quartile 4 = 4.5. The minimum was 3, and the maximum was 4.5. Fairness quartiles for participants working in education for six through 10 years in education were calculated as Quartile 1 = 3, Quartile 2 = 3.25, Quartile 3 = 3.5, and Quartile 4 = 4. The minimum was 2.5, and the maximum was 4. Fairness quartiles for 11 through 15 years in education were calculated as Quartile 1 = 3, Quartile 2 = 3.75, Quartile 3 = 4.5, and Quartile 4 = 5. The minimum was 2.5, and the maximum was 5. Fairness quartiles for 16 through 20 years in education were calculated as Quartile 1 = 3.5, Quartile 2 = 3.5, Quartile 3 = 3.5, and

Quartile 4 = 3.5. The minimum was 3.5, and the maximum was 3.5. Fairness quartiles for 21 through 25 years in education were calculated as Quartile 1 = 2.5, Quartile 2 = 3, Quartile 3 = 3.5, and Quartile 4 = 4. The minimum was 2, and the maximum was 4. Fairness quartiles for 26 through 30 years in education were calculated as Quartile 1 = 4, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 4. The minimum was 4, and the maximum was 4. Fairness quartiles for participants working in education for 30 plus years were calculated as Quartile 1 = 2.88, Quartile 2 = 3.25, Quartile 3 = 3.63, and Quartile 4 = 4. The minimum was 2.5, and the maximum was 4. Finally, measures of central tendency and the standard deviation were calculated for total years in education.

Table 20

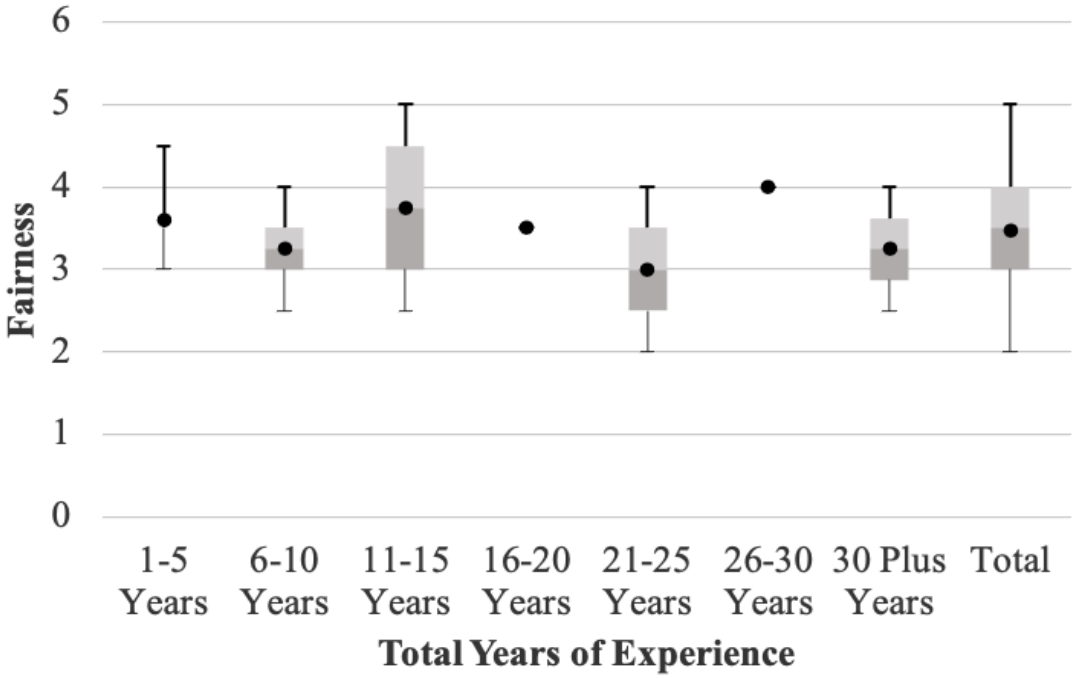
Fairness for Total Years in Education

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	17	33	27	7	7	3	7	100
Five-Number Summary								
Minimum	3.00	2.50	2.50	3.50	2.00	4.00	2.50	2.00
Quartile 1	3.50	3.00	3.00	3.50	2.50	4.00	2.88	3.00
Quartile 2	3.50	3.25	3.75	3.50	3.00	4.00	3.25	3.50
Quartile 3	3.50	3.50	4.50	3.50	3.50	4.00	3.63	4.00
Maximum	4.50	4.00	5.00	3.50	4.00	4.00	4.00	5.00
Measures of Central Tendency								
M	3.60	3.25	3.75	3.50	3.00	4.00	3.25	3.47
MD	3.50	3.25	3.75	3.50	3.00	4.00	3.25	3.50
Mode	7.00	7.00	6.00	7.00	NA	8.00	NA	7.00
SD	1.10	00.85	1.77	00.00	2.83	NA	2.12	1.36

The data were utilized to create a box plot (see Figure 19) for total years in education. The figure depicts seven series of data: one to five years in education, two to six years in education, six to 10 years in education, 11 to 15 years in education, 16 to 20 years in education, 21-25 years in education, 26 to 30 years in education, and 30 plus years in education.

Figure 19

Fairness for Total Years in Education



Additionally, a five-number summary was created utilizing the data for the number of years in the current position (see Table 21). Fairness quartiles for participants in the current position for one to five years were as follows: Quartile 1 = 3.13, Quartile 2 = 3.5, Quartile 3 = 3.88, and Quartile 4 = 4.5. The minimum was 3, and the maximum was 4.5. Fairness quartiles for participants in the current position for six to 10 years were as follows: Quartile 1 = 3, Quartile 2 = 3.5, Quartile 3 = 3.63, and Quartile 4 = 5. The minimum was 2.5, and the maximum was 5. Fairness quartiles for participants in the current position for 11 to 15 years were as follows: Quartile 1 = 2.5, Quartile 2 = 2.75, Quartile 3 = 3.38, and Quartile 4 = 4.5 The minimum was 2.5, and the maximum was 4.5. Fairness quartiles for participants in the current position for 16 to 20 years were as

follows: Quartile 1 = 3.63, Quartile 2 = 3.75, Quartile 3 = 3.88, and Quartile 4 = 4. The minimum was 3.5, and the maximum was 4. Fairness quartiles for participants in the current position for 21 to 25 years were as follows: Quartile 1 = 2.5, Quartile 2 = 3, Quartile 3 = 3.5, and Quartile 4 = 4. The minimum was 2, and the maximum was 4. No survey participants had been in their current position for the last two categories of 26 to 30 years, or 30 plus years. Finally, measures of central tendency and the standard deviation were calculated for the total number of years in the current position in education.

Table 21

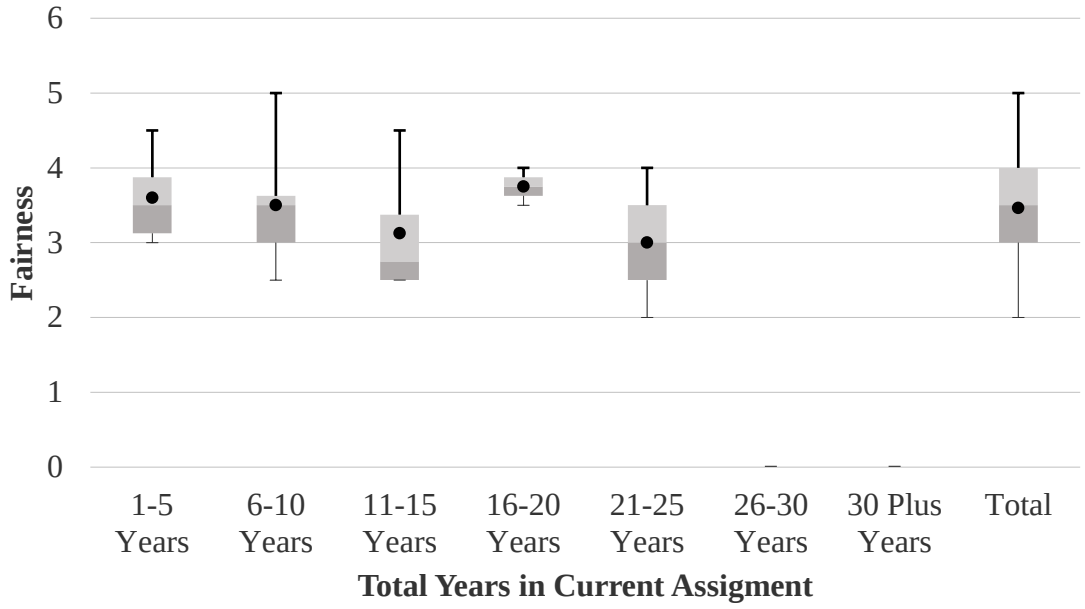
Fairness for Number of Years in Current Position

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	33	40	13	7	7	0	0	100
Five-Number Summary								
Minimum	3.00	2.50	2.50	3.50	2.00	NA	NA	2.00
Quartile 1	3.13	3.00	2.50	3.63	2.50	NA	NA	3.00
Quartile 2	3.50	3.50	2.75	3.75	3.00	NA	NA	3.50
Quartile 3	3.88	3.63	3.38	3.88	3.50	NA	NA	4.00
Maximum	4.50	5.00	4.50	4.00	4.00	NA	NA	5.00
Measures of Central Tendency								
M	3.60	3.50	3.13	3.75	3.00	NA	NA	3.47
MD	3.50	3.50	2.75	3.75	3.00	NA	NA	3.50
Mode	7.00	7.00	5.00	NA	NA	NA	NA	7.00
SD	1.14	1.28	1.83	.71	2.83	NA	NA	1.36

Data were used to create a box plot (see Figure 20) for the number of years in the current educational position. The figure depicts seven series of data: one through five years in the current position; six through 10 years in the current position; 11 to 15 years in the current position, 16 to 20 years in the current position, 21-25 years in the current position, 26-30 years in the current position, and 30 plus years in the current position.

Figure 20

Fairness for Number of Years in Current Position



Next, a five-number summary was created to depict the data represented by grade levels in which participants worked (see Table 22). Quartiles representing overall psychological safety for fifth grade faculty participants were calculated as Quartile 1 = 3.39, Quartile 2 = 3.94, Quartile 3 = 4.44, and Quartile 4 = 4.63. The minimum was 3.06, and the maximum was 4.63. Quartiles representing overall psychological safety for sixth grade faculty participants were calculated as Quartile 1 = 3.75, Quartile 2 = 4.03, Quartile 3 = 4.44, and Quartile 4 = 4.81. The minimum was 3.75, and the maximum was 4.81. Quartiles representing overall psychological safety for seventh grade faculty participants were calculated as Quartile 1 = 3.14, Quartile 2 = 3.59, Quartile 3 = 3.95, and Quartile 4 = 4. The minimum was 3, and the maximum was 4. Quartiles representing overall psychological safety for eighth grade faculty participants were calculated as Quartile 1 =

3.44, Quartile 2 = 3.56, Quartile 3 = 3.69, and Quartile 4 = 3.81. The minimum was 3.31, and the maximum was 3.81. Quartiles representing overall psychological safety for faculty participants working with both fifth and sixth grades (middle) were calculated as Quartile 1 = 3.34, Quartile 2 = 3.84, Quartile 3 = 4.16, and Quartile 4 = 4.25. The minimum was 2.69, and the maximum was 4.25. Quartiles representing overall psychological safety for participants working with both seventh and eighth grades (junior high) were calculated as Quartile 1 = 3.72, Quartile 2 = 3.75, Quartile 3 = 3.88, and Quartile 4 = 4.5. The minimum was 3.31, and the maximum was 4.5. Finally, totals for overall psychological safety for fifth through eighth grade faculty participants were calculated as Quartile 1 = 3.5, Quartile 2 = 3.5, Quartile 3 = 3.5, and Quartile 4 = 3.5. The minimum was 3.5, and the maximum was 3.5.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 22

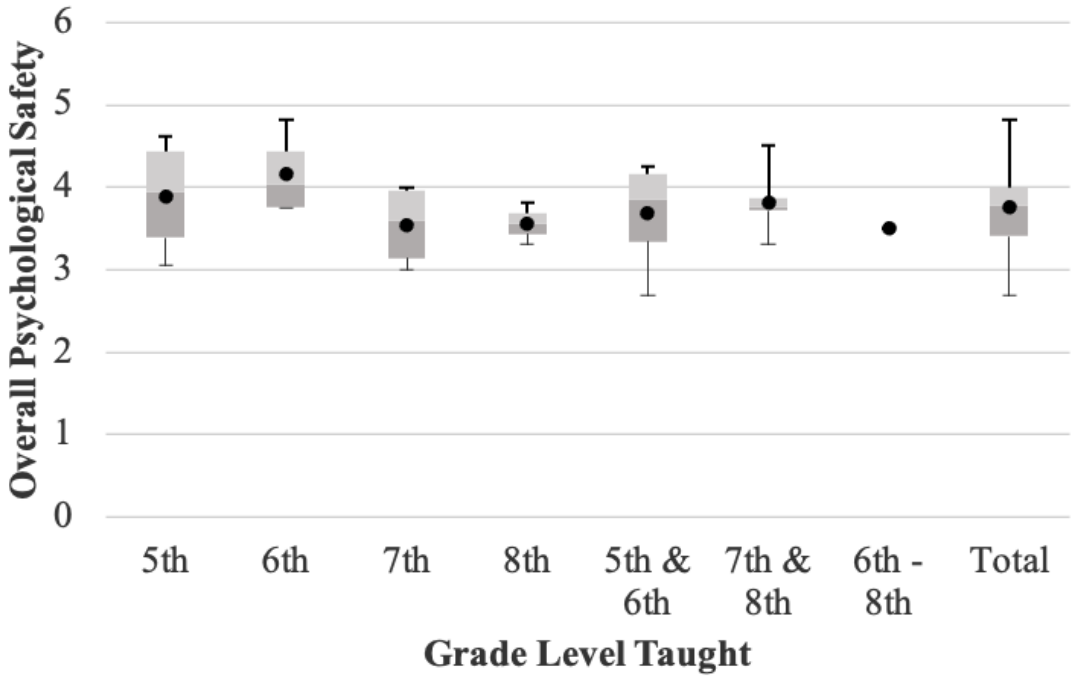
Overall Psychological Safety for Grade-Level Taught

Values	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	All Middle	All JH	MS/JH Mixed	Total
Percentage Of Sample	13	13	20	7	20	23	3	100
Five-Number Summary								
Minimum	3.06	3.75	3.00	3.31	2.69	3.31	3.50	2.69
Quartile 1	3.39	3.75	3.14	3.44	3.34	3.72	3.50	3.41
Quartile 2	3.94	4.03	3.59	3.56	3.84	3.75	3.50	3.78
Quartile 3	4.44	4.44	3.95	3.69	4.16	3.88	3.50	4.00
Maximum	4.63	4.81	4.00	3.81	4.25	4.50	3.50	4.81
Measures of Central Tendency								
M	3.89	4.16	3.54	3.56	3.68	3.82	3.50	3.76
MD	3.93	4.03	3.59	3.56	3.84	3.75	3.50	3.78
Mode	NA	60.00	64.00	NA	68.00	60.00	56.00	60.00
SD	11.73	8.19	7.31	5.66	9.95	5.67	NA	8.11

Data were utilized to create a box plot (see Figure 21). The figure displays seven series of data for each grade level in which survey participants work: fifth grade, sixth grade, seventh grade, eighth grade, middle (both fifth and sixth), junior high (both seventh and eighth), and total participants. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 21

Overall Psychological Safety for Grade-Level Taught



Additionally, a five-number summary was created to depict the data represented by content taught (see Table 23). Quartiles representing overall psychological safety for faculty members teaching core subjects were calculated as Quartile 1 = 3.31, Quartile 2 = 3.75, Quartile 3 = 4, and Quartile 4 = 4.81. The minimum was 3, and the maximum was 4.81. Quartiles representing overall psychological safety for faculty members teaching elective subjects were calculated as Quartile 1 = 3.69, Quartile 2 = 3.75, Quartile 3 = 4.25, and Quartile 4 = 4.5. The minimum was 3.5, and the maximum was 4.5. Quartiles representing overall psychological safety for faculty members teaching special education were calculated as Quartile 1 = 3.75, Quartile 2 = 3.84, Quartile 3 = 3.88 and Quartile 4 = 4.63. The minimum was 2.69, and the maximum was 4.63. Quartiles representing overall

psychological safety for faculty members working as school counselors were calculated as Quartile 1 = 3.45, Quartile 2 = 3.72, Quartile 3 = 3.99, and Quartile 4 = 4.81. The minimum was 3.19, and the maximum was 4.25.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 23

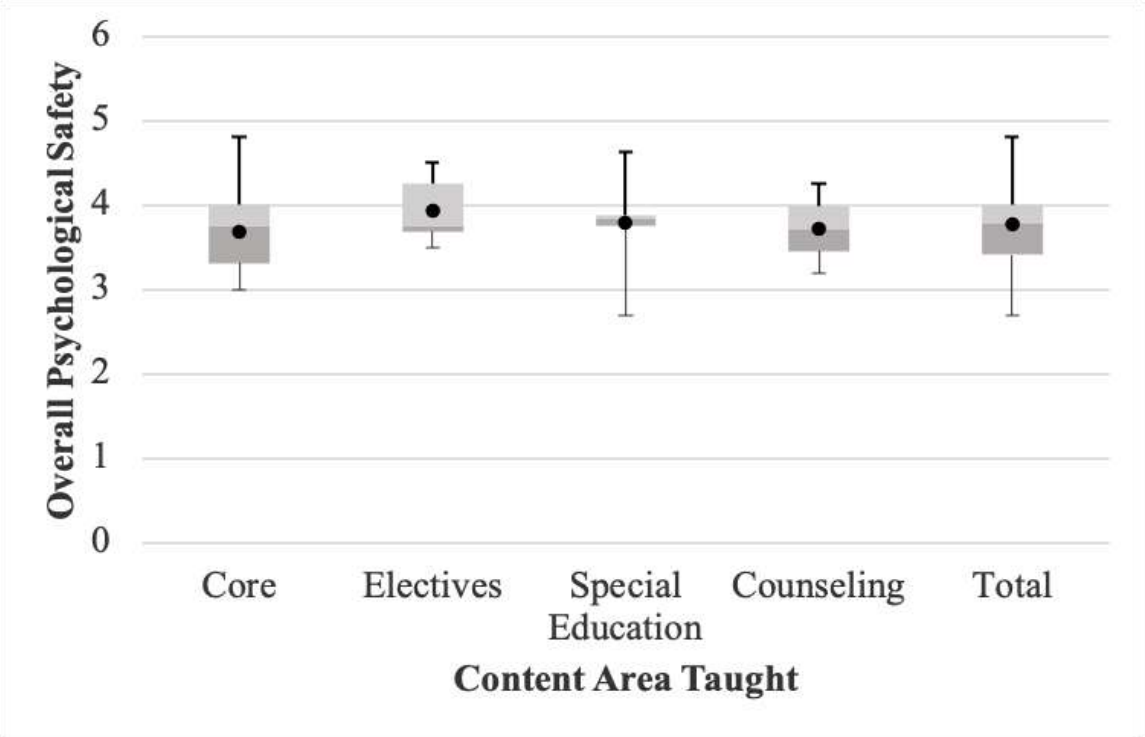
Overall Psychological Safety for Content Taught

Values	Core Subjects	Elective Subjects	Special Education	School Counseling	Total
Percentage of Sample	43	17	33	7	100
Five-Number Summary					
Minimum	3.00	3.50	2.69	3.19	2.69
Quartile 1	3.31	3.69	3.75	3.45	3.41
Quartile 2	3.75	3.75	3.84	3.72	3.78
Quartile 3	4.00	4.25	3.88	3.99	4.00
Maximum	4.81	4.50	4.63	4.25	4.81
Measures of Central Tendency					
M	3.68	63.00	60.70	3.72	3.76
MD	3.75	60.00	61.50	3.72	3.78
Mode	49.00	NA	62.00	NA	60
SD	8.53	6.71	8.45	12.02	8.11

Data were utilized to create a box plot (see Figure 22). The figure displays seven series of data for each content in which survey participants work: core subjects, elective subjects, special education, and school counseling. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 22

Overall Psychological Safety for Content Taught



Additionally, data were organized in a five-number summary for total years in education (see Table 24). Overall psychological safety quartiles for one through five years in education were calculated as Quartile 1 = 3.75, Quartile 2 = 3.88, Quartile 3 = 4, and Quartile 4 = 4.81. The minimum was 3.31, and the maximum was 4.81. Overall psychological safety quartiles for participants working in education for six through 10 years in education were calculated as Quartile 1 = 3.09, Quartile 2 = 3.63, Quartile 3 = 3.80, and Quartile 4 = 4.31. The minimum was 3, and the maximum was 4.31. Overall psychological safety quartiles for 11 through 15 years in education were calculated as Quartile 1 = 3.47, Quartile 2 = 3.97, Quartile 3 = 4.41, and Quartile 4 = 4.63. The minimum was 3.31, and the maximum was 4.63. Overall psychological safety quartiles

for 16 through 20 years in education were calculated as Quartile 1 = 3.91, Quartile 2 = 3.94, Quartile 3 = 3.97, and Quartile 4 = 4. The minimum was 3.88, and the maximum was 4. Overall psychological safety quartiles for 21 through 25 years in education were calculated as Quartile 1 = 2.95, Quartile 2 = 3.22, Quartile 3 = 3.48, and Quartile 4 = 3.75. The minimum was 2.69, and the maximum was 3.75. Overall psychological safety quartiles for 26 through 30 years in education were calculated as Quartile 1 = 3.88, Quartile 2 = 3.88, Quartile 3 = 3.88, and Quartile 4 = 3.88. The minimum was 3.88, and the maximum was 3.88. Overall psychological safety quartiles for participants working in education for 30 plus years were calculated as Quartile 1 = 3.92, Quartile 2 = 4.03, Quartile 3 = 4.14, and Quartile 4 = 4.25. The minimum was 3.81, and the maximum was 4.25. Finally, measures of central tendency and the standard deviation were calculated for total years in education.

Table 24

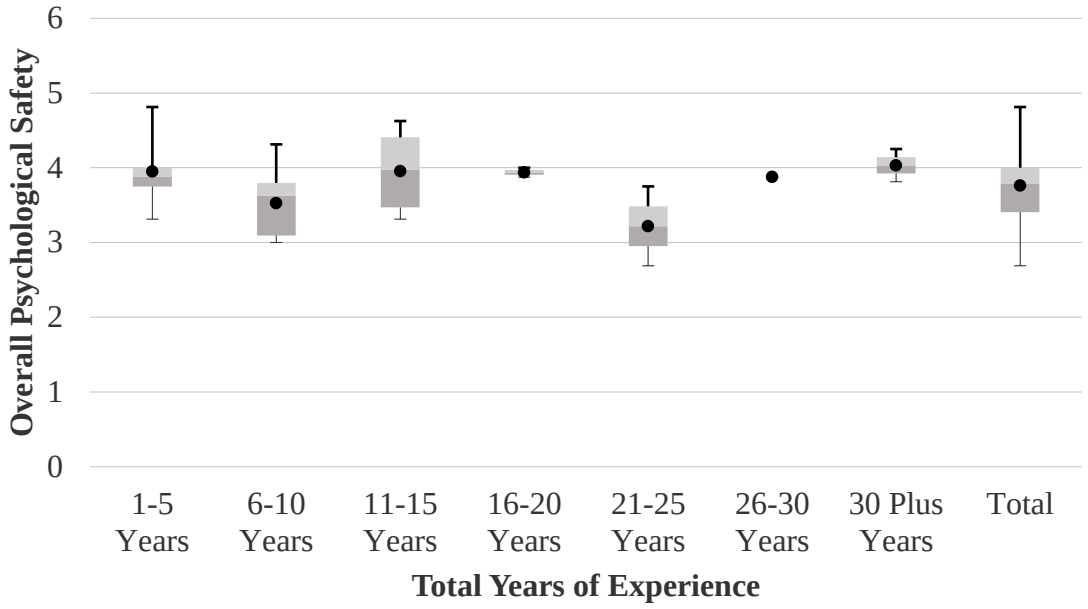
Overall Psychological Safety for Total Years in Education

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	17	33	27	7	7	3	7	100
Five-Number Summary								
Minimum	3.31	3.00	3.31	3.88	2.69	3.88	3.81	2.69
Quartile 1	3.75	3.09	3.47	3.91	2.95	3.88	3.92	3.41
Quartile 2	3.88	3.63	3.97	3.94	3.22	3.88	4.03	3.78
Quartile 3	4.00	3.80	4.41	3.97	3.48	3.88	4.14	4.00
Maximum	4.81	4.31	4.63	4.00	3.75	3.88	4.25	4.81
Measures of Central Tendency								
M	3.95	3.53	3.95	3.94	3.22	3.88	4.03	3.76
MD	3.88	3.63	3.63	3.94	3.22	3.88	4.03	3.78
Mode	NA	61.00	NA	NA	NA	62.00	NA	60.00
SD	8.76	6.96	8.61	1.41	12.02	NA	4.95	8.12

The data were utilized to create a box plot (see Figure 23) for total years in education. The figure depicts seven series of data: one to five years in education, two to six years in education, six to 10 years in education, 11 to 15 years in education, 16 to 20 years in education, 21-25 years in education, 26 to 30 years in education, and 30 plus years in education.

Figure 23

Overall Psychological Safety for Total Years in Education



Additionally, a five-number summary was created utilizing the data for the number of years in the current position (see Table 25). Overall psychological safety quartiles for participants in the current position for one to five years were as follows: Quartile 1 = 3.42, Quartile 2 = 3.81, Quartile 3 = 4.19, and Quartile 4 = 4.81. The minimum was 3, and the maximum was 4.81. Overall psychological safety quartiles for participants in the current position for six to 10 years were as follows: Quartile 1 = 3.5, Quartile 2 = 3.78, Quartile 3 = 3.97, and Quartile 4 = 4.63. The minimum was 3.06, and the maximum was 4.63. Overall psychological safety quartiles for participants in the current position for 11 to 15 years were as follows: Quartile 1 = 3.36, Quartile 2 = 3.59, Quartile 3 = 3.95, and Quartile 4 = 4.38. The minimum was 3.31, and the maximum was 4.38. Overall psychological safety quartiles for participants in the current position for 16 to 20 years were as follows: Quartile 1 = 3.81, Quartile 2 = 3.88, Quartile 3 = 3.94, and

Quartile 4 = 4. The minimum was 3.75, and the maximum was 4. Overall psychological safety quartiles for participants in the current position for 21 to 25 years were as follows: Quartile 1 = 2.98, Quartile 2 = 3.28, Quartile 3 = 3.58, and Quartile 4 = 3.88. The minimum was 2.69, and the maximum was 3.88. No survey participants had been in their current position for the last two categories of 26 to 30 years, or 30 plus years. Finally, measures of central tendency and the standard deviation were calculated for the total number of years in the current position in education.

Table 25

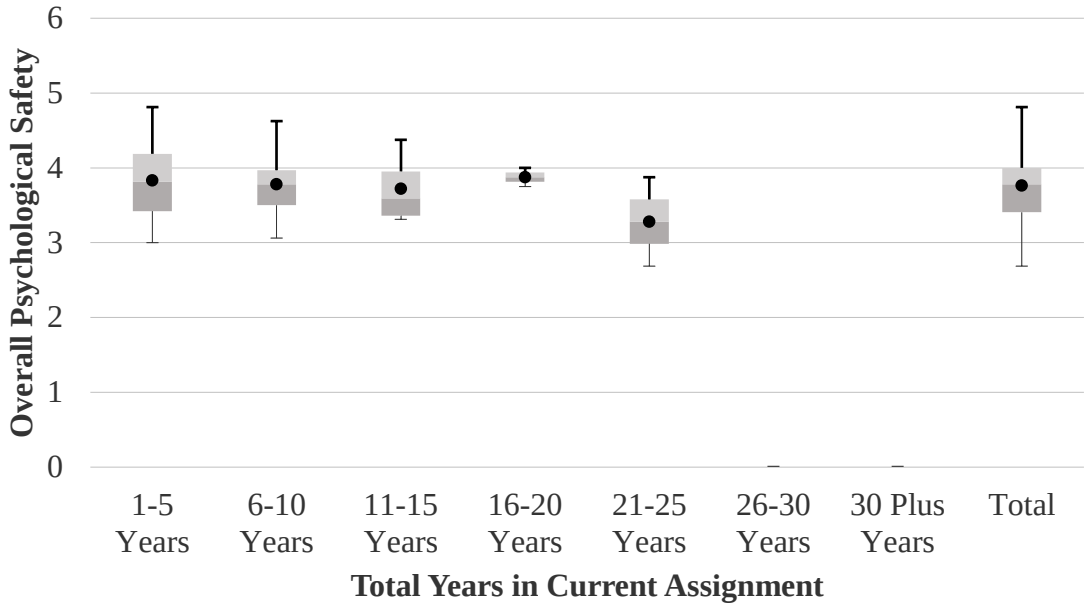
Overall Psychological Safety for Number of Years in Current Position

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	33	40	13	7	7	0	0	100
Five-Number Summary								
Minimum	3.00	3.06	3.31	3.75	2.69	NA	NA	2.69
Quartile 1	3.42	3.50	3.36	3.81	2.98	NA	NA	3.41
Quartile 2	3.81	3.78	3.59	3.88	3.28	NA	NA	3.78
Quartile 3	4.19	3.97	3.95	3.94	3.58	NA	NA	4.00
Maximum	4.81	4.63	4.38	4.00	3.88	NA	NA	4.81
Measures of Central Tendency								
M	3.83	3.78	59.50	3.88	3.28	NA	NA	3.76
MD	3.81	3.78	57.50	3.88	3.28	NA	NA	3.78
Mode	60.00	61.00	NA	NA	NA	NA	NA	60.00
SD	9.51	7.26	7.85	2.83	13.44	NA	NA	8.11

Data were used to create a box plot (see Figure 24) for the number of years in the current educational position. The figure depicts seven series of data: one through five years in the current position; six through 10 years in the current position; 11 to 15 years in the current position; 16 to 20 years in the current position; 21-25 years in the current position; 26-30 years in the current position; and 30 plus years in the current position.

Figure 24

Overall Psychological Safety for Number of Years in Current Position



Next, a five-number summary was created to depict the data represented by grade levels in which participants worked (see Table 26). Quartiles representing the concept of collaborative capacity for fifth grade faculty participants were calculated as Quartile 1 = 3.5, Quartile 2 = 3.94, Quartile 3 = 4.38, and Quartile 4 = 4.38. The minimum was 2.75, and the maximum was 4.38. Quartiles representing the concept of collaborative capacity for sixth grade faculty participants were calculated as Quartile 1 = 3.69, Quartile 2 = 4.06, Quartile 3 = 4.5, and Quartile 4 = 4.88. The minimum was 3.5, and the maximum was 4.88. Quartiles representing the concept of collaborative capacity for seventh grade faculty participants were calculated as Quartile 1 = 3, Quartile 2 = 3.5, Quartile 3 = 3.63, and Quartile 4 = 3.88. The minimum was 2.5, and the maximum was 3.88. Quartiles representing the concept of collaborative capacity for eighth grade faculty participants

were calculated as Quartile 1 = 3.03, Quartile 2 = 3.06, Quartile 3 = 3.09, and Quartile 4 = 3.13. The minimum was 3, and the maximum was 3.13. Quartiles representing the concept of collaborative capacity for faculty participants working with both fifth and sixth grades (middle) were calculated as Quartile 1 = 2.88, Quartile 2 = 3.81, Quartile 3 = 4.19, and Quartile 4 = 4.5. The minimum was 2, and the maximum was 4.5. Quartiles representing the concept of collaborative capacity for participants working with both seventh and eighth grades (junior high) were calculated as Quartile 1 = 3.5, Quartile 2 = 3.63, Quartile 3 = 3.94, and Quartile 4 = 4.63. The minimum was 3, and the maximum was 4.63. Finally, totals for the concept of collaborative capacity for fifth through eighth grade faculty participants were calculated as Quartile 1 = 2.75, Quartile 2 = 2.75, Quartile 3 = 2.75, and Quartile 4 = 2.75. The minimum was 2.75, and the maximum was 2.75.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 26

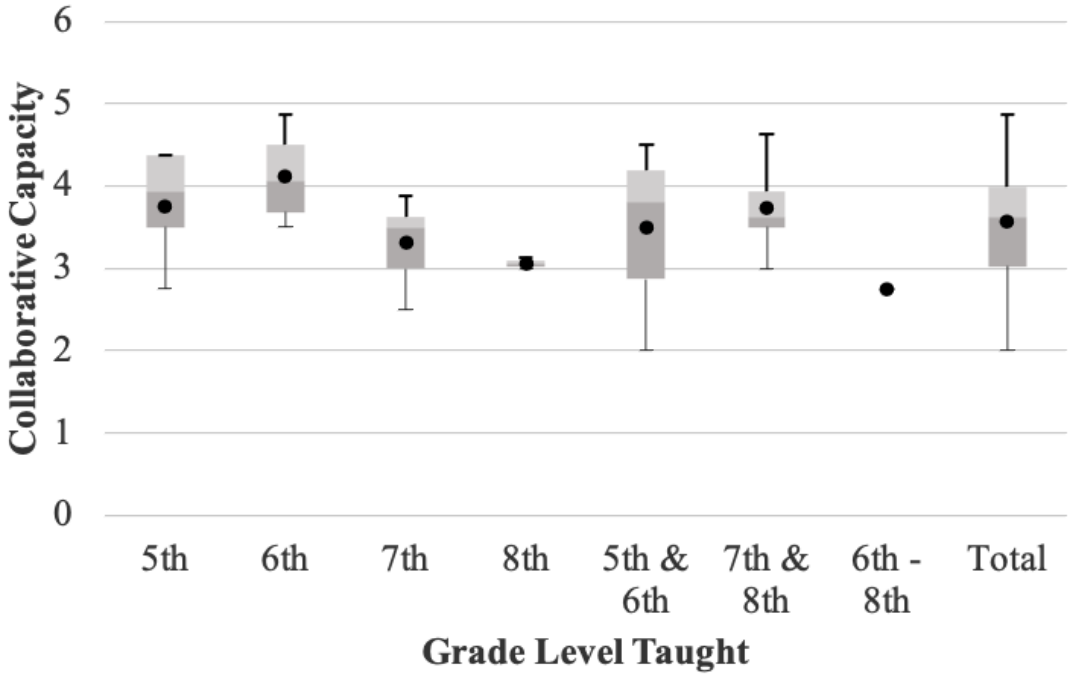
Collaborative Capacity for Grade-Level Taught

Values	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	All Middle	All JH	MS/JH Mixed	Total
Percentage Of Sample	13	13	20	7	20	23	3	100
Five-Number Summary								
Minimum	2.75	3.50	2.50	3.00	2.00	3.00	2.75	2.00
Quartile 1	3.50	3.69	3.00	3.03	2.88	3.50	2.75	3.03
Quartile 2	3.94	4.06	3.50	3.06	3.81	3.63	2.75	3.63
Quartile 3	4.38	4.50	3.63	3.09	4.19	3.94	2.75	4.00
Maximum	4.38	4.88	3.88	3.13	4.63	4.63	2.75	4.88
Measures of Central Tendency								
M	3.75	4.13	3.31	3.06	3.50	3.73	2.75	3.58
MD	3.94	4.06	3.50	3.06	3.81	3.63	2.75	3.63
Mode	NA	NA	29.00	NA	NA	28.00	22.00	29.00
SD	5.72	4.97	4.18	.71	7.88	4.06	NA	5.48

Data were utilized to create a box plot (see Figure 25). The figure displays seven series of data for each grade level in which survey participants work: fifth grade, sixth grade, seventh grade, eighth grade, middle (both fifth and sixth), junior high (both seventh and eighth), and total participants. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 25

Collaborative Capacity for Grade-Level Taught



Additionally, a five-number summary was created to depict the data represented by content taught (see Table 27). Quartiles representing the concept of collaborative capacity for faculty members teaching core subjects were calculated as Quartile 1 = 3, Quartile 2 = 3.5, Quartile 3 = 3.75, and Quartile 4 = 4.88. The minimum was 2.5, and the maximum was 4.88. Quartiles representing the concept of collaborative capacity for faculty members teaching elective subjects were calculated as Quartile 1 = 3.5, Quartile 2 = 3.63, Quartile 3 = 3.63, and Quartile 4 = 4.63. The minimum was 2.75, and the maximum was 4.63. Quartiles representing the concept of collaborative capacity for faculty members teaching special education were calculated as Quartile 1 = 3.56, Quartile 2 = 3.94, Quartile 3 = 4.09, and Quartile 4 = 4.38. The minimum was 2, and the

maximum was 4.38. Quartiles representing the concept of collaborative capacity for faculty members working as school counselors were calculated as Quartile 1 = 3.09, Quartile 2 = 3.56, Quartile 3 = 4.03, and Quartile 4 = 4.50. The minimum was 2.63, and the maximum was 4.50.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 27

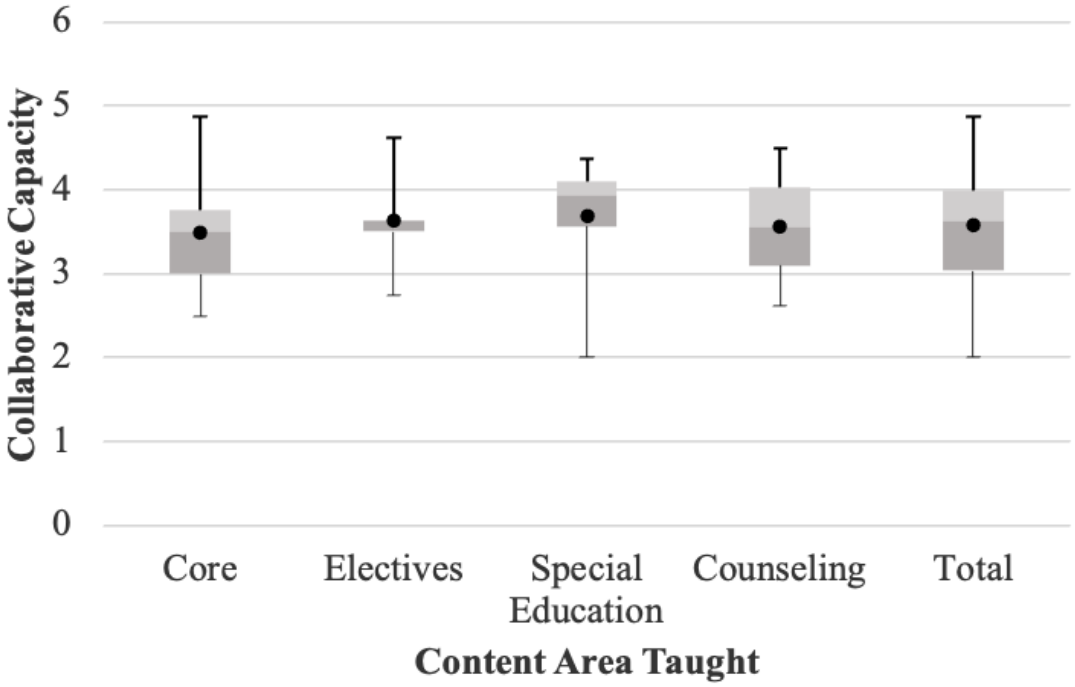
Collaborative Capacity for Content Area Taught

Values	Core Subjects	Elective Subjects	Special Education	School Counseling	Total
Percentage of Sample	43	17	33	7	100
Five-Number Summary					
Minimum	2.50	2.75	2.00	2.63	2.00
Quartile 1	3.00	3.50	3.56	3.09	3.03
Quartile 2	3.50	3.63	3.94	3.56	3.63
Quartile 3	3.75	3.63	4.09	4.03	4.00
Maximum	4.88	4.63	4.38	4.50	4.88
Measures of Central Tendency					
M	3.48	3.63	3.69	3.56	3.58
MD	3.50	3.63	3.94	3.56	3.63
Mode	29.00	29.00	32.00	NA	29.00
SD	5.29	5.34	5.71	10.61	5.48

Data were utilized to create a box plot (see Figure 26). The figure displays seven series of data for each content in which survey participants work: core subjects, elective subjects, special education, and school counseling. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 26

Collaborative Capacity for Content Area Taught



Additionally, data were organized in a five-number summary for total years in education (see Table 28). Collaborative capacity quartiles for one through five years in education were calculated as Quartile 1 = 3.63, Quartile 2 = 3.88, Quartile 3 = 4, and Quartile 4 = 4.88. The minimum was 3, and the maximum was 4.88. Collaborative capacity quartiles for participants working in education for six through 10 years in education were calculated as Quartile 1 = 2.75, Quartile 2 = 3.19, Quartile 3 = 3.72, and Quartile 4 = 4.38. The minimum was 2.5, and the maximum was 4.38. Collaborative capacity quartiles for 11 through 15 years in education were calculated as Quartile 1 = 3.59, Quartile 2 = 3.81, Quartile 3 = 4.19, and Quartile 4 = 4.63. The minimum was 3.13, and the maximum was 4.63. Collaborative capacity quartiles for 16 through 20 years in

education were calculated as Quartile 1 = 3.41, Quartile 2 = 3.44, Quartile 3 = 3.47, and Quartile 4 = 3.50. The minimum was 3.38, and the maximum was 3.63. Collaborative capacity quartiles for 21 through 25 years in education were calculated as Quartile 1 = 2.41, Quartile 2 = 2.81, Quartile 3 = 3.22, and Quartile 4 = 3.63. The minimum was 2, and the maximum was 3.63. Collaborative capacity quartiles for 26 through 30 years in education were calculated as Quartile 1 = 4, Quartile 2 = 4, Quartile 3 = 4, and Quartile 4 = 4. The minimum was 4, and the maximum was 4. Collaborative capacity quartiles for participants working in education for 30 plus years were calculated as Quartile 1 = 3.38, Quartile 2 = 3.75, Quartile 3 = 4.13, and Quartile 4 = 4.5. The minimum was 3, and the maximum was 4.5. Finally, measures of central tendency and the standard deviation were calculated for total years in education.

Table 28

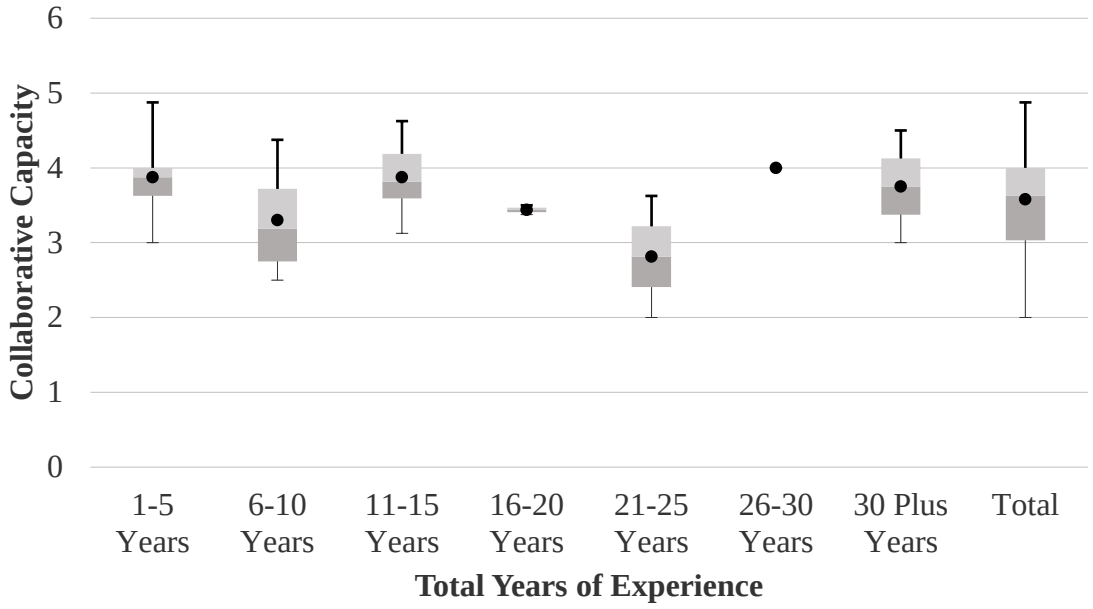
Collaborative Capacity for Total Years in Education

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	17	33	27	7	7	3	7	100
Five-Number Summary								
Minimum	3.00	2.50	3.13	3.38	2.00	4.00	3.00	2.00
Quartile 1	3.63	2.75	3.59	3.41	2.41	4.00	3.38	3.03
Quartile 2	3.88	3.19	3.81	3.44	2.81	4.00	3.75	3.63
Quartile 3	4.00	3.72	4.19	3.47	3.22	4.00	4.13	4.00
Maximum	4.88	4.38	4.63	3.50	3.63	4.00	4.50	4.88
Measures of Central Tendency								
M	3.88	3.30	3.88	3.44	2.81	4.00	3.75	3.58
MD	3.88	3.19	3.81	3.44	2.81	4.00	3.75	3.63
Mode	NA	22.00	NA	NA	NA	32.00	NA	29.00
SD	5.43	5.52	3.89	00.71	9.19	NA	8.49	5.48

The data were utilized to create a box plot (see Figure 27) for total years in education. The figure depicts seven series of data: one to five years in education, two to six years in education, six to 10 years in education, 11 to 15 years in education, 16 to 20 years in education, 21-25 years in education, 26 to 30 years in education, and 30 plus years in education.

Figure 27

Collaborative Capacity for Total Years in Education



Additionally, a five-number summary was created utilizing the data for the number of years in the current position (see Table 29). Collaborative capacity quartiles for participants in the current position for one to five years were as follows: Quartile 1 = 3.13, Quartile 2 = 3.75, Quartile 3 = 4.38, and Quartile 4 = 4.88. The minimum was 2.5, and the maximum was 4.88. Collaborative capacity quartiles for participants in the current position for six to 10 years were as follows: Quartile 1 = 3.31, Quartile 2 = 3.63, Quartile 3 = 3.84, and Quartile 4 = 4.38. The minimum was 2.63, and the maximum was 4.38. Collaborative capacity quartiles for participants in the current position for 11 to 15 years were as follows: Quartile 1 = 3.09 Quartile 2 = 3.5, Quartile 3 = 4, and Quartile 4 = 4.38. The minimum was 3, and the maximum was 4.38. Collaborative capacity quartiles for participants in the current position for 16 to 20 years were as follows: Quartile 1 =

3.44, Quartile 2 = 3.5, Quartile 3 = 3.56, and Quartile 4 = 3.63. The minimum was 3.38, and the maximum was 3.63. Collaborative capacity quartiles for participants in the current position for 21 to 25 years were as follows: Quartile 1 = 2.5, Quartile 2 = 3, Quartile 3 = 3.5, and Quartile 4 = 4. The minimum was 2, and the maximum was 4. No survey participants had been in their current position for the last two categories of 26 to 30 years, or 30 plus years. Finally, measures of central tendency and the standard deviation were calculated for the total number of years in the current position in education.

Table 29

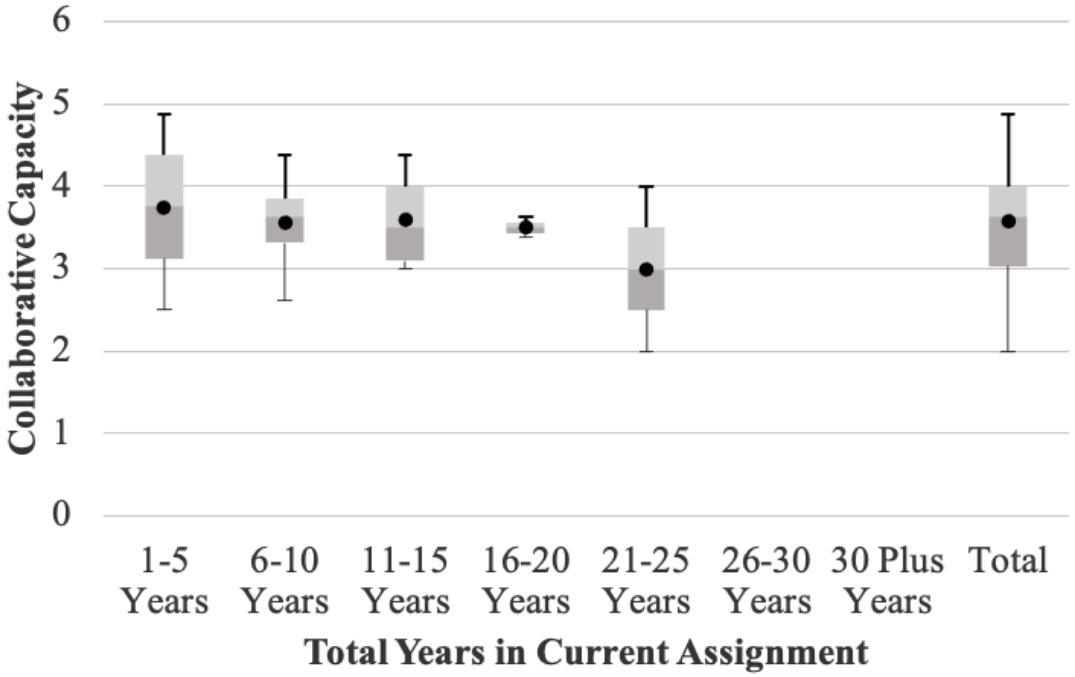
Collaborative Capacity for Number of Years in Current Position

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	33	40	13	7	7	0	0	100
Five-Number Summary								
Minimum	2.50	2.63	3.00	3.38	2.00	NA	NA	2.00
Quartile 1	3.13	3.31	3.09	3.44	2.50	NA	NA	3.03
Quartile 2	3.75	3.63	3.50	3.50	3.00	NA	NA	3.63
Quartile 3	4.38	3.84	4.00	3.56	3.50	NA	NA	4.00
Maximum	4.88	4.38	4.38	3.63	4.00	NA	NA	4.88
Measures of Central Tendency								
M	3.74	3.55	3.59	3.50	3.00	NA	NA	3.58
MD	3.75	3.63	3.50	3.50	3.00	NA	NA	3.63
Mode	NA	28.00	NA	NA	NA	NA	NA	29.00
SD	6.33	4.66	5.19	1.41	11.31	NA	NA	5.48

Data were used to create a box plot (see Figure 28) for the number of years in the current educational position. The figure depicts seven series of data: one through five years in the current position; six through 10 years in the current position; 11 to 15 years in the current position; 16 to 20 years in the current position; 21-25 years in the current position; 26-30 years in the current position; and 30 plus years in the current position.

Figure 28

Collaborative Capacity for Number of Years in Current Position



Next, a five-number summary was created to depict the data represented by grade levels in which participants worked (see Table 30). Quartiles representing the concept of school climate for fifth grade faculty participants were calculated as Quartile 1 = 3.75, Quartile 2 = 4.3, Quartile 3 = 4.8, and Quartile 4 = 4.8. The minimum was 3.6, and the maximum was 4.8. Quartiles representing the concept of school climate for sixth grade faculty participants were calculated as Quartile 1 = 4.25, Quartile 2 = 4.6, Quartile 3 = 4.8, and Quartile 4 = 4.8. The minimum was 3.8, and the maximum was 4.8. Quartiles representing the concept of school climate for seventh grade faculty participants were calculated as Quartile 1 = 3.25, Quartile 2 = 3.7, Quartile 3 = 4, and Quartile 4 = 4.2. The minimum was 3.2, and the maximum was 4.2. Quartiles representing the concept of

school climate for eighth grade faculty participants were calculated as Quartile 1 = 3.45, Quartile 2 = 3.7, Quartile 3 = 3.95, and Quartile 4 = 4.2. The minimum was 3.2, and the maximum was 4.2. Quartiles representing the concept of school climate for faculty participants working with both fifth and sixth grades (middle) were calculated as Quartile 1 = 3.25, Quartile 2 = 4.1, Quartile 3 = 4.35, and Quartile 4 = 4.6. The minimum was 3, and the maximum was 4.6. Quartiles representing the concept of school climate for participants working with both seventh and eighth grades (junior high) were calculated as Quartile 1 = 3.9, Quartile 2 = 4, Quartile 3 = 4.3, and Quartile 4 = 4.8. The minimum was 3.4, and the maximum was 4.8. Finally, totals for the concept of school climate for fifth through eighth grade faculty participants were calculated as Quartile 1 = 3.6, Quartile 2 = 3.6, Quartile 3 = 3.6, and Quartile 4 = 3.6. The minimum was 3.6, and the maximum was 3.6.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 30

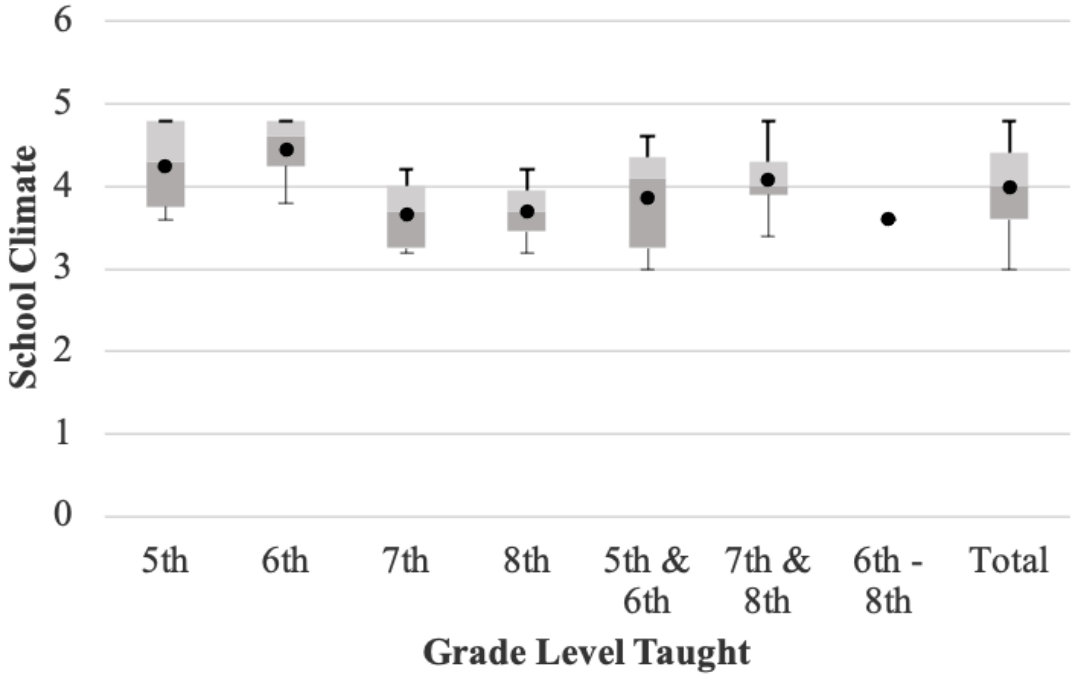
School Climate for Grade Level Taught

Values	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	All Middle	All JH	MS/JH Mix	Total
Percentage Of Sample	13	13	20	7	20	23	3	100
Five-Number Summary								
Minimum	3.60	3.80	3.20	3.20	3.00	3.40	3.60	3.00
Quartile 1	3.75	4.25	3.25	3.45	3.25	3.90	3.60	3.60
Quartile 2	4.30	4.60	3.70	3.70	4.10	4.00	3.60	4.00
Quartile 3	4.80	4.80	4.00	3.95	4.35	4.30	3.60	4.40
Maximum	4.80	4.80	4.20	4.20	4.60	4.80	3.60	4.80
Measures of Central Tendency								
M	4.25	4.45	3.67	3.70	3.87	4.09	3.60	3.98
MD	4.30	4.6	3.70	3.70	4.60	4.00	3.60	4.00
Mode	24.00	24.00	16.00	NA	15.00	20.00	18.00	20.00
SD	3.20	00.00	2.25	3.54	3.50	2.23	NA	2.83

Data were utilized to create a box plot (see Figure 29). The figure displays seven series of data for each grade level in which survey participants work: fifth grade, sixth grade, seventh grade, eighth grade, middle (both fifth and sixth), junior high (both seventh and eighth), and total participants. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 29

School Climate for Grade Level Taught



Additionally, a five-number summary was created to depict the data represented by content taught (see Table 31). Quartiles representing the concept of school climate for faculty members teaching core subjects were calculated as Quartile 1 = 3.4, Quartile 2 = 4, Quartile 3 = 4.2, and Quartile 4 = 4.8. The minimum was 3.2, and the maximum was 4.8. Quartiles representing the concept of school climate for faculty members teaching elective subjects were calculated as Quartile 1 = 3.8, Quartile 2 = 4, Quartile 3 = 4.6, and Quartile 4 = 4.8. The minimum was 3.6, and the maximum was 4.8. Quartiles representing the concept of school climate for faculty members teaching special education were calculated as Quartile 1 = 3.85, Quartile 2 = 4.1, Quartile 3 = 4.35, and Quartile 4 = 4.8. The minimum was 3, and the maximum was 4.8. Quartiles representing

the concept of school climate for faculty members working as school counselors were calculated as Quartile 1 = 3.35, Quartile 2 = 3.7, Quartile 3 = 4.05, and Quartile 4 = 4.4. The minimum was 3, and the maximum was 4.4.

Additionally, demographic data were analyzed to create a representation of the sample (Fraenkel et al., 2019). The average of the arithmetic mean (*M*), the average median (*MD*), mode, and standard deviation (*SD*) were calculated for grade-level demographics (Fraenkel et al., 2019). The mean was calculated to find the midpoint of the data set (Fraenkel et al., 2019). Additional measures of central tendency, including the median and mode were calculated to further summarize the data (Fraenkel et al., 2019). The standard deviation was calculated to understand the variance of the calculated mean (Bluman, 2018; Fraenkel et al., 2019).

Table 31

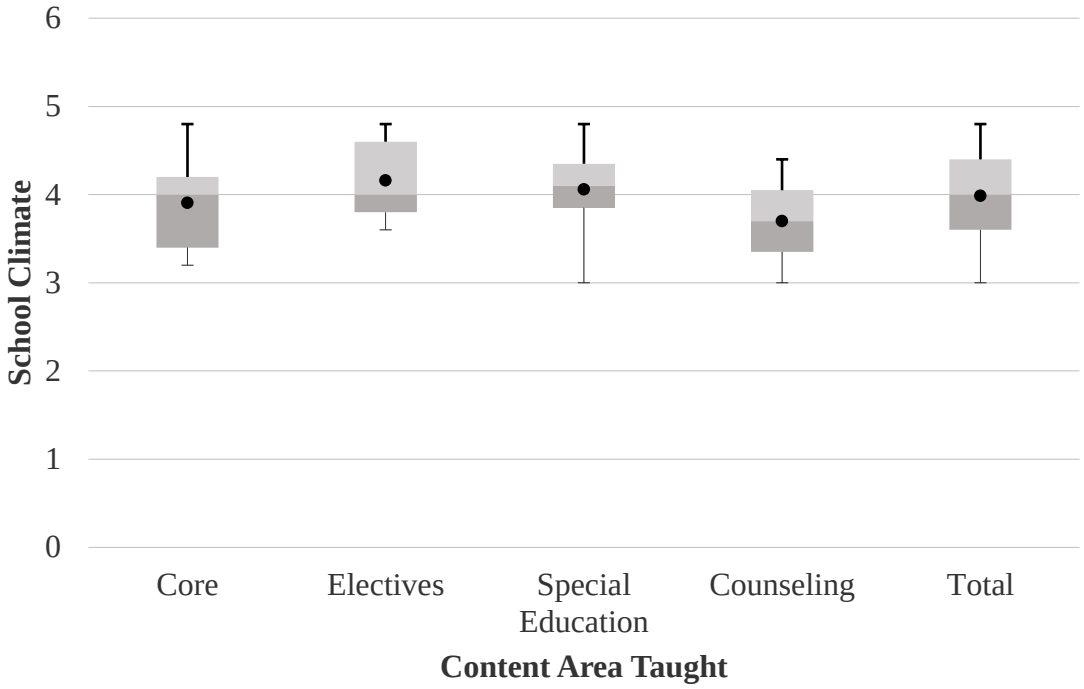
School Climate for Content Taught

Values	Core Subjects	Elective Subjects	Special Education	School Counseling	Total
Percentage of Sample	43	17	33	7	100
Five-Number Summary					
Minimum	3.20	3.60	3.00	3.00	3.00
Quartile 1	3.40	3.80	3.85	3.35	3.60
Quartile 2	4.00	4.00	4.10	3.70	4.00
Quartile 3	4.20	4.60	4.35	4.05	4.40
Maximum	4.80	4.80	4.80	4.40	4.80
Measures of Central Tendency					
M	3.91	4.16	4.06	3.70	3.99
MD	4.00	4.00	4.10	3.70	4.00
Mode	16.00	NA	24.00	NA	20.00
SD	2.85	2.59	2.83	4.95	2.83

Data were utilized to create a box plot (see Figure 30). The figure displays seven series of data for each content in which survey participants work: core subjects, elective subjects, special education, and school counseling. The boxes in the figure depict data clusters, and the tails depict the variances among the data.

Figure 30

School Climate for Content Taught



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Additionally, data were organized in a five-number summary for total years in education (see Table 32). School climate quartiles for one through five years in education were calculated as Quartile 1 = 4.2, Quartile 2 = 4.2, Quartile 3 = 4.4, and Quartile 4 = 4.8. The minimum was 3.4, and the maximum was 4.8. School climate quartiles for participants working in education for six through 10 years in education were calculated as Quartile 1 = 3.3, Quartile 2 = 3.7, Quartile 3 = 4, and Quartile 4 = 4.8. The minimum was 3, and the maximum was 4.8. School climate quartiles for 11 through 15 years in education were calculated as Quartile 1 = 3.7, Quartile 2 = 4.2, Quartile 3 = 4.8, and Quartile 4 = 4.8. The minimum was 3.2, and the maximum was 4.8. School climate quartiles for 16 through 20 years in education were calculated as Quartile 1 = 4, Quartile

2 = 4, Quartile 3 = 4, and Quartile 4 = 4. The minimum was 4, and the maximum was 4. School climate quartiles for 21 through 25 years in education were calculated as Quartile 1 = 3.25, Quartile 2 = 3.5 Quartile 3 = 3.75, and Quartile 4 = 4. The minimum was 3, and the maximum was 4. School climate quartiles for 26 through 30 years in education were calculated as Quartile 1 = 4.2, Quartile 2 = 4.2, Quartile 3 = 4.2, and Quartile 4 = 4.2. The minimum was 4.2, and the maximum was 4.2. School climate quartiles for participants working in education for 30 plus years were calculated as Quartile 1 = 4.25, Quartile 2 = 4.3, Quartile 3 = 4.35, and Quartile 4 = 4.4. The minimum was 4.2, and the maximum was 4.4. Finally, measures of central tendency and the standard deviation were calculated for total years in education.

Table 32

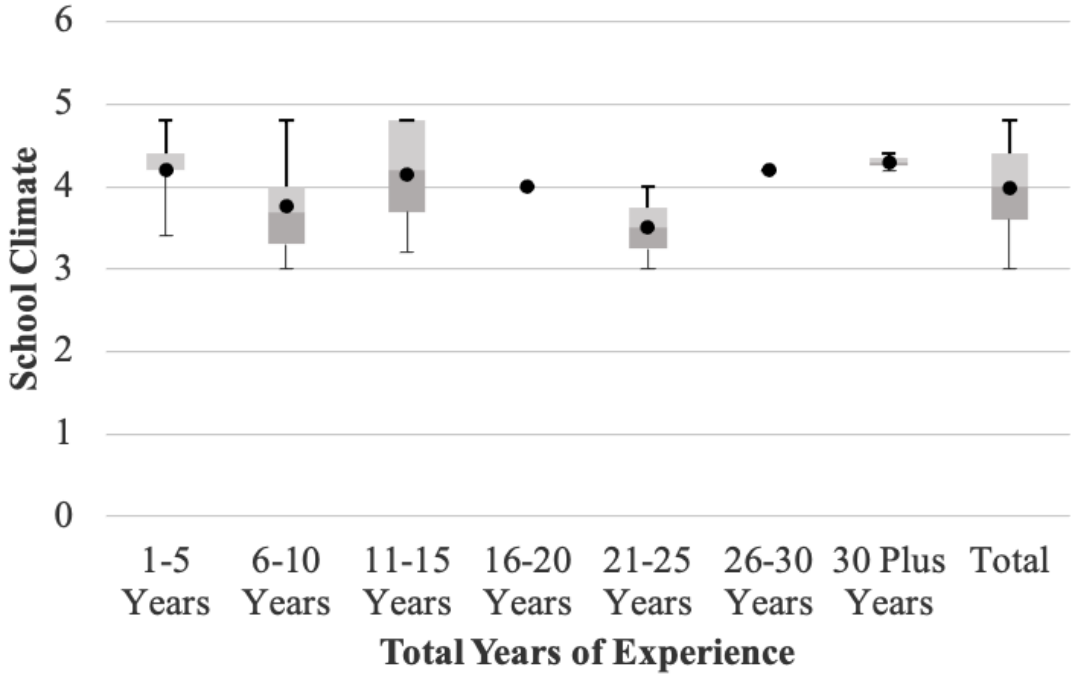
School Climate for Total Years in Education

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	17	33	27	7	7	3	7	100
Five-Number Summary								
Minimum	3.40	3.00	3.20	4.00	3.00	4.20	4.20	3.00
Quartile 1	4.20	3.30	3.70	4.00	3.25	4.20	4.25	3.60
Quartile 2	4.20	3.70	4.20	4.00	3.50	4.20	4.30	4.00
Quartile 3	4.40	4.00	4.80	4.00	3.75	4.20	4.35	4.40
Maximum	4.80	4.80	4.80	4.00	4.00	4.20	4.40	4.80
Measures of Central Tendency								
M	4.20	3.76	4.15	4.00	3.50	4.20	4.30	3.99
MD	4.20	3.70	4.20	4.00	3.50	4.20	4.30	4.00
Mode	21.00	20.00	24.00	20.00	NA	NA	NA	20.00
SD	2.55	2.82	3.37	0.00	3.54	NA	.71	2.82

The data were utilized to create a box plot (see Figure 31) for total years in education. The figure depicts seven series of data: one to five years in education, two to six years in education, six to 10 years in education, 11 to 15 years in education, 16 to 20 years in education, 21-25 years in education, 26 to 30 years in education, and 30 plus years in education.

Figure 31

School Climate for Total Years in Education



Additionally, a five-number summary was created utilizing the data for the number of years in the current position (see Table 33). School climate quartiles for participants in the current position for one to five years were as follows: Quartile 1 = 3.6, Quartile 2 = 4.3, Quartile 3 = 4.4, and Quartile 4 = 4.8. The minimum was 3.6, and the maximum was 4.8. School climate quartiles for participants in the current position for sox to 10 years were as follows: Quartile 1 = 3.75, Quartile 2 = 3.9, Quartile 3 = 4.15, and Quartile 4 = 4.8. The minimum was 3, and the maximum was 4.8. School climate quartiles for participants in the current position for 11 to 15 years were as follows: Quartile 1 = 3.35, Quartile 2 = 3.8, Quartile 3 = 4.35, and Quartile 4 = 4.8. The minimum was 3.2, and the maximum was 4.8. School climate quartiles for participants in the current position for 16 to 20 years were as follows: Quartile 1 = 4, Quartile 2 = 4,

Quartile 3 = 4, and Quartile 4 = 4. The minimum was 4, and the maximum was 4. School climate quartiles for participants in the current position for 21 to 25 years were as follows: Quartile 1 = 3.3, Quartile 2 = 3.6, Quartile 3 = 3.9, and Quartile 4 = 4.2. The minimum was 3, and the maximum was 4.2. No survey participants had been in their current position for the last two categories of 26 to 30 years, or 30 plus years. Finally, measures of central tendency and the standard deviation were calculated for the total number of years in the current position in education.

Table 33

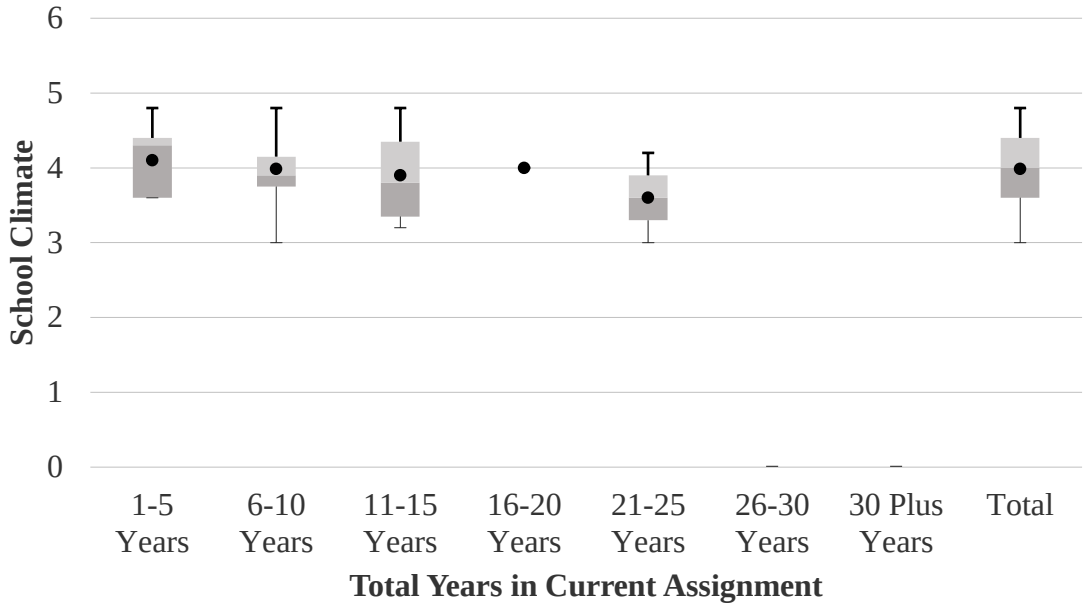
School Climate for Number of Years in Current Position

Values	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	30+ Years	Total
Percentage Of Sample	33	40	13	7	7	0	0	100
Five-Number Summary								
Minimum	3.60	3.00	3.20	4.00	3.00	NA	NA	3.00
Quartile 1	3.60	3.75	3.35	4.00	3.30	NA	NA	3.60
Quartile 2	4.30	3.90	3.80	4.00	3.60	NA	NA	4.00
Quartile 3	4.40	4.15	4.35	4.00	3.90	NA	NA	4.40
Maximum	4.80	4.80	4.80	4.00	4.20	NA	NA	4.80
Measures of Central Tendency								
M	4.10	3.98	3.90	4.00	3.60	NA	NA	3.99
MD	4.30	3.90	3.80	4.00	3.60	NA	NA	4.00
Mode	22.00	19.00	NA	20.00	NA	NA	NA	30.00
SD	3.06	2.64	3.70	0.00	4.24	NA	NA	2.83

Data were used to create a box plot (see Figure 32) for the number of years in the current educational position. The figure depicts seven series of data: one through five years in the current position; six through 10 years in the current position; 11 to 15 years in the current position, 16 to 20 years in the current position, 21-25 years in the current position, 26-30 years in the current position, and 30 plus years in the current position.

Figure 32

School Climate for Number of Years in Current Position



Inferential Statistics

Finally, an inferential analysis of the data was completed using the Pearson Product Moment Correlation Coefficient (PPMC). The PPMC was used to determine if a significant relationship existed between the independent and dependent variables. Bluman (2018) stated, “the range of the linear correlation coefficient is from -1 to +1” with a positive correlation trending toward +1 and a negative correlation trending to -1 (p. 552)

A scatterplot was used as a visual tool to better understand the data (Bluman, 2018; Fraenkel et al., 2019). Scatterplots offer a simple visual representation of data, providing the researcher with information regarding the relationship existing among the research variables (Fraenkel et al., 2019). The scatterplots included in this chapter

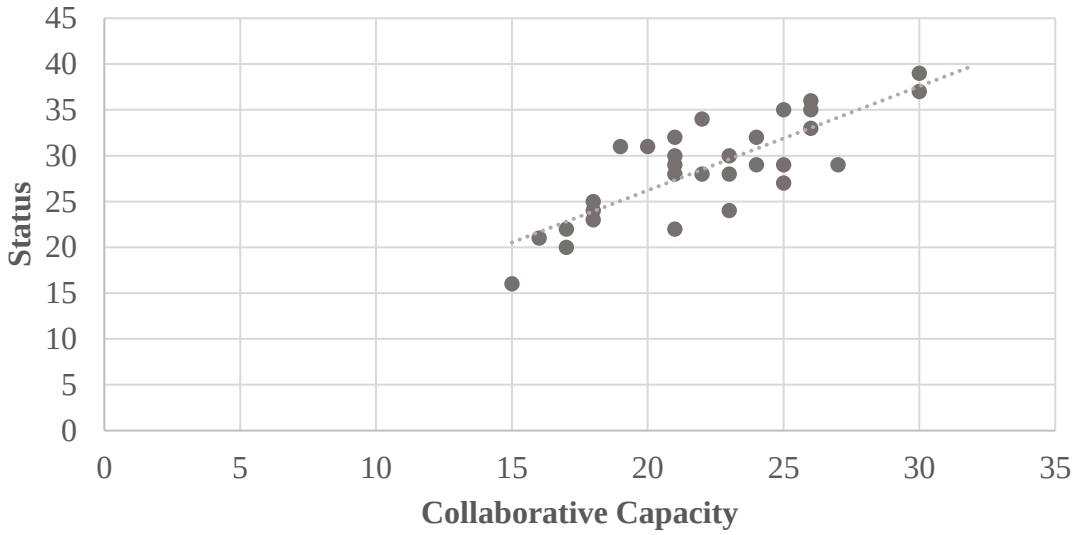
provide a visual representation of the data between the variables of The SCARF theory (status, certainty, autonomy, relatedness, and fairness), overall psychological safety, collaborative capacity, and school climate.

The first scatterplot was used to provide a visual representation of the data between the variables of status and collaborative capacity (see Figure 33). The scatterplot includes a best-fit line, demonstrating the trend of the data (Sarikaya & Gleicher, 2018). Bluman (2018) also explained the "strength and direction of a linear relationship" is discovered through examining a pattern in the data (p. 552). A scatterplot provides a visual representation of the data pattern (Bluman, 2018).

A PPMC was used to determine the correlation between status and collaborative capacity. After calculating the correlation coefficient for status and collaborative capacity, the value of r was determined to be 0.807. This value was greater than the critical value of 0.361, with an alpha level equal to 0.05. When $r = 0.807$, the strength of the relationship is positive, and an increase in one variable indicates an increase in both (University of Miami, School of Education and Human Development, 2020). The positive value 0.807 is more than the critical value of 0.361; therefore, the null hypothesis was rejected. There is a statistically significant relationship between status and collaborative capacity among the survey participants.

Figure 33

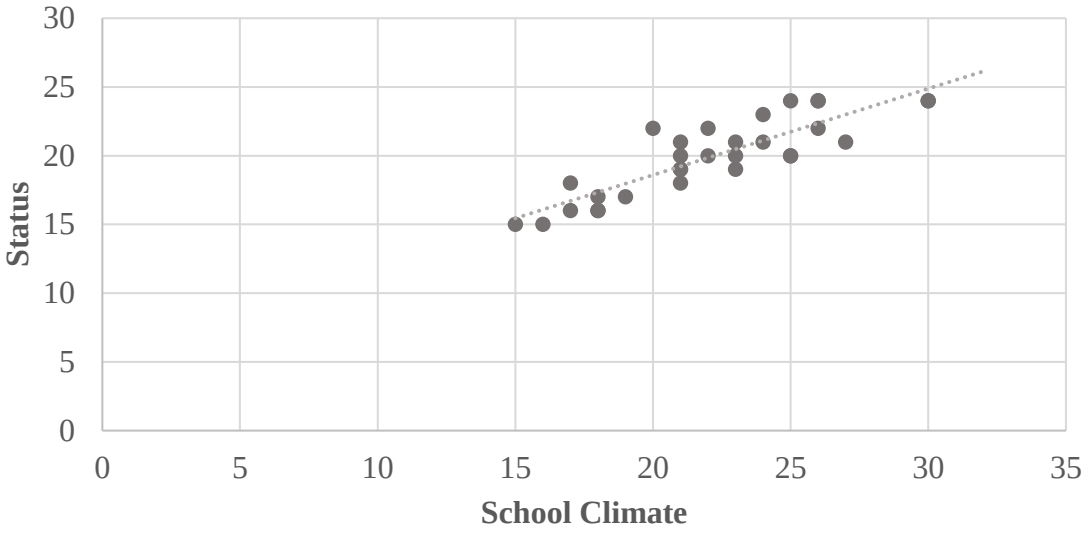
Status and Collaborative Capacity



The relationship between the variables of status and school climate was visually represented in a scatterplot (see Figure 34). A PPMC was utilized to determine the correlation between status and school climate. After calculating the correlation coefficient for status and school climate, the value of *r* was determined to be 0.865. When *r* = 0.865, the strength of the relationship is positive, and an increase in one variable indicates an increase in both (University of Miami, School of Education and Human Development, 2020). The positive value 0.865 is more than the critical value of 0.361; therefore, the null hypothesis was rejected. There is a statistically significant relationship between status and school climate among survey participants.

Figure 34

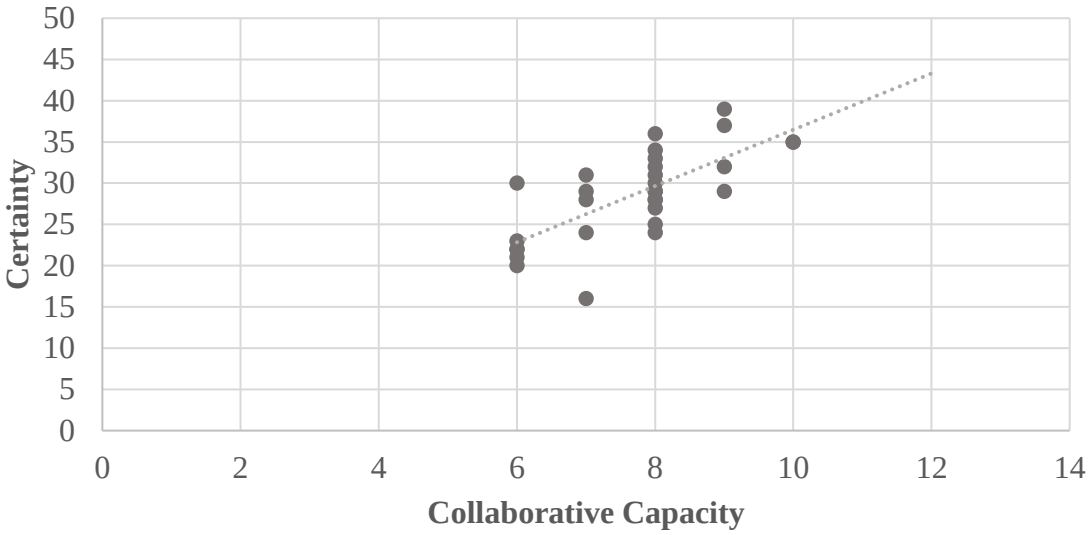
Status and School Climate



A scatterplot was used to provide a visual representation of the data between the variables of certainty and collaborative capacity (see Figure 35). A PPMC was utilized to determine the correlation between certainty and collaborative capacity. After calculating the correlation coefficient for certainty and collaborative capacity, the value of *r* was determined to be 0.716. When $r = 0.716$, the strength of the relationship is positive, and an increase in one variable indicates an increase in both (University of Miami, School of Education and Human Development, 2020). The positive value 0.716 is more than the critical value of 0.361; therefore, the null hypothesis was rejected. There is a statistically significant relationship between certainty and collaborative capacity among the survey participants.

Figure 35

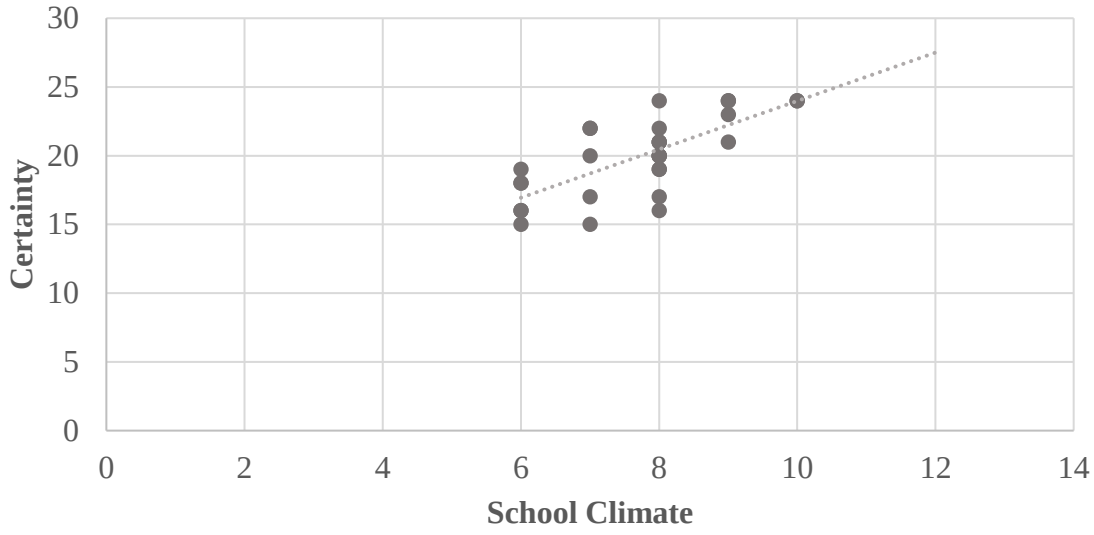
Certainty and Collaborative Capacity



A scatterplot was used to provide a visual representation of the data between the variables of certainty and school climate, as well (see Figure 35). A PPMC was utilized to determine the correlation between certainty and school climate. After calculating the correlation coefficient for certainty and school climate, the value of *r* was determined to be 0.715. When *r* = 0.715, the strength of the relationship is positive, and an increase in one variable indicates an increase in both (University of Miami, School of Education and Human Development, 2020). The positive value 0.715 is more than the critical value of 0.361; therefore, the null hypothesis was rejected. There is a statistically significant relationship between certainty and school climate among the survey participants.

Figure 36

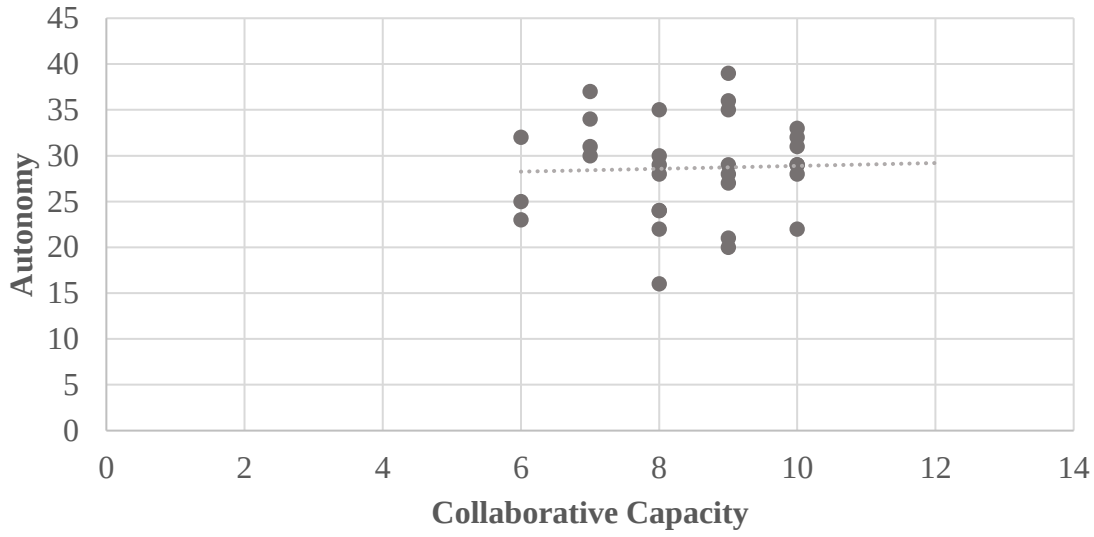
Certainty and School Climate



A scatterplot was used to provide a visual representation of the data between the variables of autonomy and collaborative capacity (see Figure 37). A PPMC was utilized to determine the correlation between autonomy and collaborative capacity. After calculating the correlation coefficient for autonomy and collaborative capacity, the value of *r* was determined to be 0.036. When $r = 0.036$, the strength of the relationship is considered weak and inconsistent (University of Miami, School of Education and Human Development, 2020). The positive value 0.036 is less than the critical value of 0.361; therefore, the null hypothesis was not rejected. There is no statistically significant relationship between autonomy and collaborative capacity among the survey participants.

Figure 37

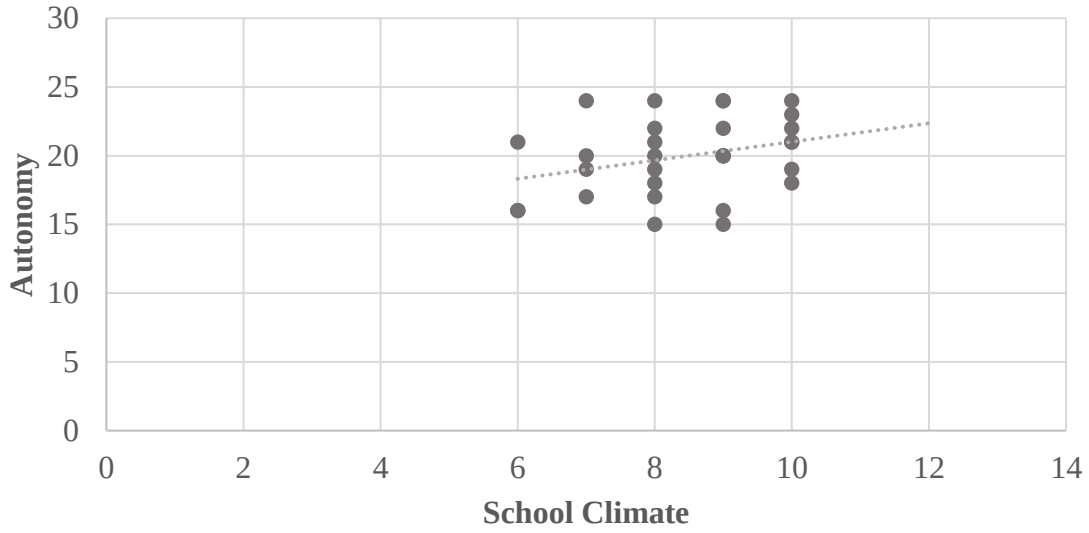
Autonomy and Collaborative Capacity



A scatterplot was used to provide a visual representation of the data between the variables of autonomy and school climate, as well (see Figure 38). A PPMC was utilized to determine the correlation between autonomy and school climate. After calculating the correlation coefficient for autonomy and school climate, the value of *r* was determined to be 0.304. When *r* = 0.304, the strength of the relationship is considered weak and inconsistent (University of Miami, School of Education and Human Development, 2020). The positive value 0.304 is less than the critical value of 0.361; therefore, the null hypothesis was not rejected. There is no statistically significant relationship between autonomy and school climate among the survey participants.

Figure 38

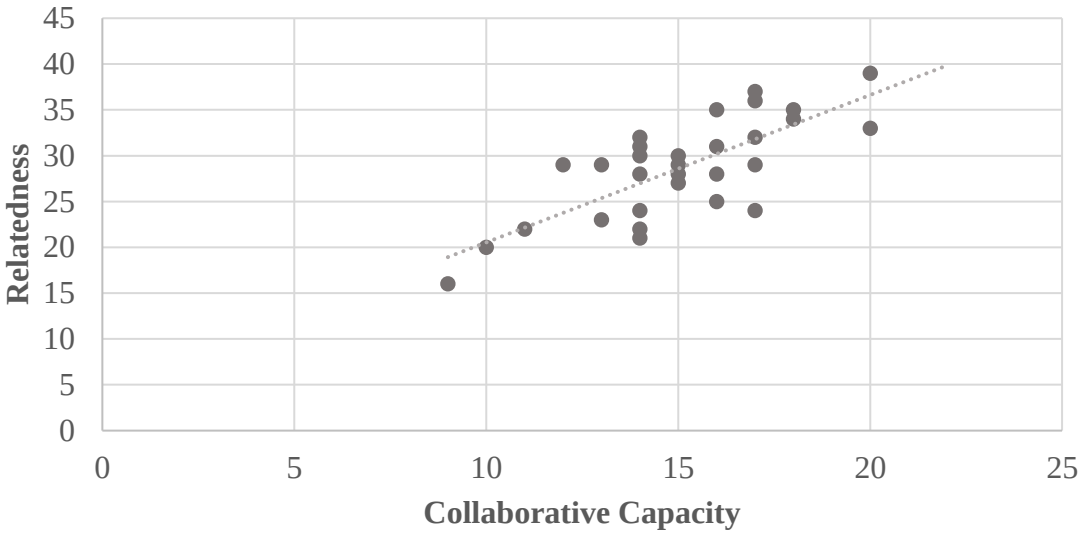
Autonomy and School Climate



Additionally, a scatterplot was used to provide a visual representation of the data between the variables of relatedness and collaborative capacity (see Figure 39). A PPMC was utilized to determine the correlation between relatedness and collaborative capacity. After calculating the correlation coefficient for relatedness and collaborative capacity, the value of *r* was determined to be 0.757. When *r* = 0.757, the strength of the relationship is positive, and an increase in one variable indicates an increase in both (University of Miami, School of Education and Human Development, 2020). The positive value 0.757 is more than the critical value of 0.361; therefore, the null hypothesis was rejected. There is a statistically significant relationship between relatedness and collaborative capacity among the survey participants.

Figure 39

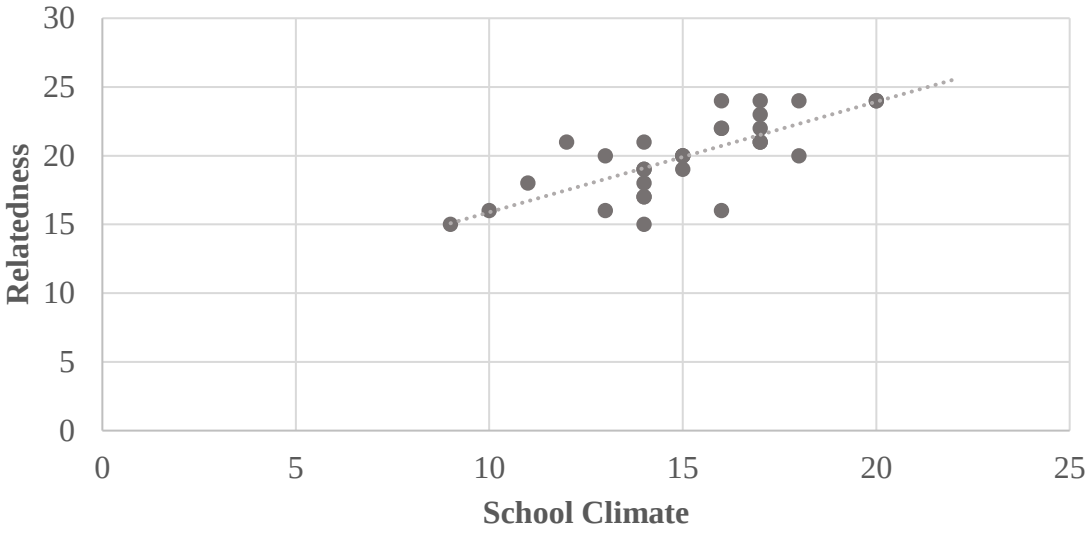
Relatedness and Collaborative Capacity



Additionally, a scatterplot was used to provide a visual representation of the data between the variables of relatedness and school climate (see Figure 40). A PPMC was utilized to determine the correlation between relatedness and school climate. After calculating the correlation coefficient for relatedness and school climate, the value of *r* was determined to be 0.733. When $r = 0.733$, the strength of the relationship is positive, and an increase in one variable indicates an increase in both (University of Miami, School of Education and Human Development, 2020). The positive value 0.733 is more than the critical value of 0.361; therefore, the null hypothesis was rejected. There is a statistically significant relationship between relatedness and school climate among the survey participants.

Figure 40

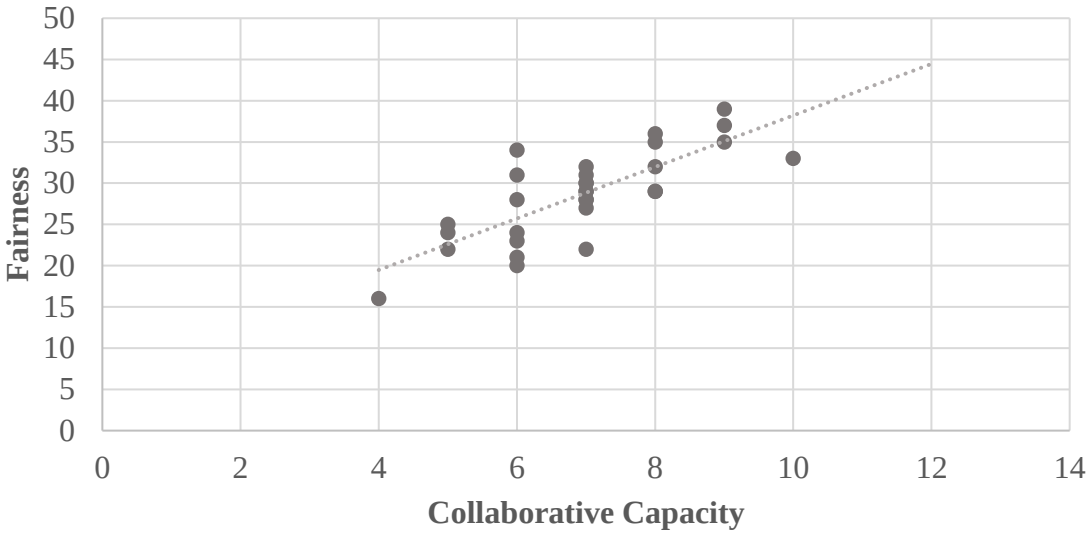
Relatedness and School Climate



Additionally, a scatterplot was used to provide a visual representation of the data between the variables of fairness and collaborative capacity (see Figure 41). A PPMC was utilized to determine the correlation between fairness and collaborative capacity. After calculating the correlation coefficient for fairness and collaborative capacity, the value of *r* was determined to be 0.777. When $r = 0.777$, the strength of the relationship is positive, and an increase in one variable indicates an increase in both (University of Miami, School of Education and Human Development, 2020). The positive value 0.777 is more than the critical value of 0.361; therefore, the null hypothesis was rejected. There is a statistically significant relationship between fairness and collaborative capacity among the survey participants.

Figure 41

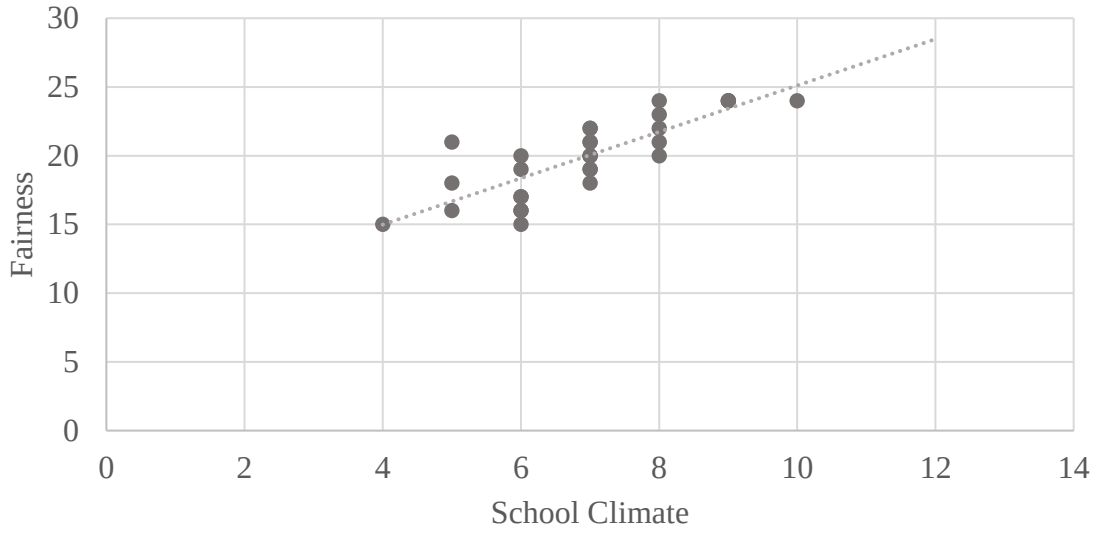
Fairness and Collaborative Capacity



Additionally, a scatterplot was used to provide a visual representation of the data between the variables of fairness and school climate (see Figure 42). A PPMC was utilized to determine the correlation between fairness and school climate. After calculating the correlation coefficient for fairness and school climate, the value of *r* was determined to be 0.813. When $r = 0.813$, the strength of the relationship is positive, and an increase in one variable indicates an increase in both (University of Miami, School of Education and Human Development, 2020). The positive value 0.813 is more than the critical value of 0.361; therefore, the null hypothesis was rejected. There is a statistically significant relationship between fairness and school climate among the survey participants.

Figure 42

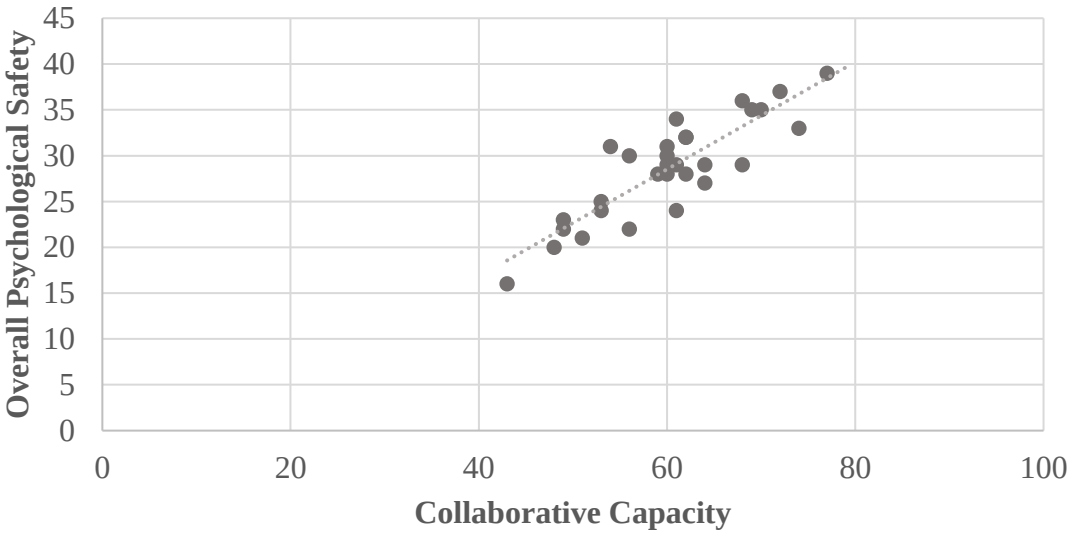
Fairness and School Climate



A scatterplot was also used to provide a visual representation of the data between the variables of overall psychological safety and collaborative capacity (see Figure 43). A PPMC was utilized to determine the correlation between overall psychological safety and collaborative capacity. After calculating the correlation coefficient for overall psychological safety and collaborative capacity, the value of *r* was determined to be 0.866. When $r = 0.866$, the strength of the relationship is positive, and an increase in one variable indicates an increase in both (University of Miami, School of Education and Human Development, 2020). The positive value 0.866 is more than the critical value of 0.361; therefore, the null hypothesis was rejected. There is a statistically significant relationship between overall psychological safety and collaborative capacity among the survey participants.

Figure 43

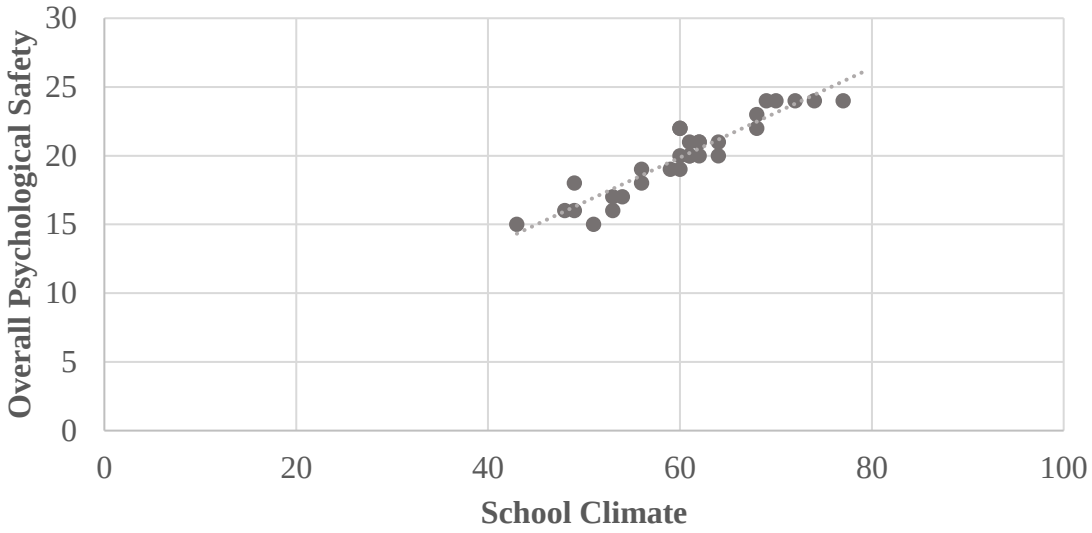
Overall Psychological Safety and Collaborative Capacity



Additionally, a scatterplot was also used to provide a visual representation of the data between the variables of overall psychological safety and school climate (see Figure 43). A PPMC was utilized to determine the correlation between overall psychological safety and school climate. After calculating the correlation coefficient for overall psychological safety and school climate, the value of *r* was determined to be 0.935. When *r* = 0.935, the strength of the relationship is positive, and an increase in one variable indicates an increase in both (University of Miami, School of Education and Human Development, 2020). The positive value 0.935 is more than the critical value of 0.361; therefore, the null hypothesis was rejected. There is a statistically significant relationship between overall psychological safety and school climate among the survey participants.

Figure 44

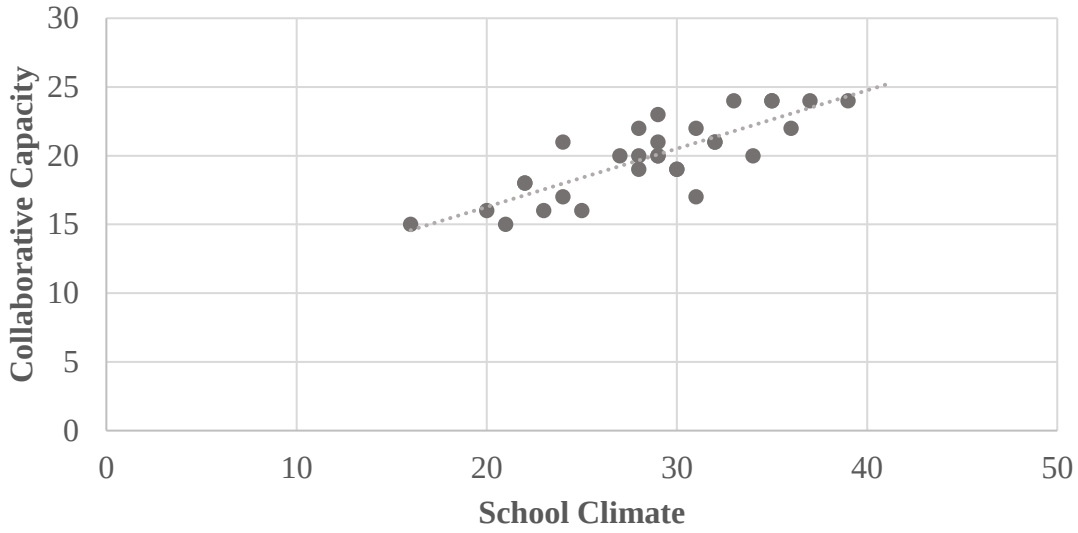
Overall Psychological Safety and School Climate



Finally, a scatterplot was also used to provide a visual representation of the data between the variables of collaborative capacity and school climate (see Figure 44). A PPMC was utilized to determine the correlation between collaborative capacity and school climate. After calculating the correlation coefficient for collaborative capacity and school climate, the value of *r* was determined to be 0.822. When $r = 0.822$, the strength of the relationship is positive, and an increase in one variable indicates an increase in both (University of Miami, School of Education and Human Development, 2020). The positive value 0.822 is more than the critical value of 0.361; therefore, the null hypothesis was rejected. There is a statistically significant relationship between collaborative capacity and school climate among the survey participants.

Figure 45

Collaborative Capacity and School Climate



The values of *r* were organized (Table 34) to provide a visual representation of the correlation coefficient for each of the following research variables: Status, Certainty, Autonomy, Relatedness, Fairness, Overall Psychological Safety, Collaborative Capacity, and School Climate.

Table 34

Summary of PPMC Values

Variable	Collaborative Capacity	School Climate
Status	0.807	0.865
Certainty	0.716	0.715
Autonomy	0.036	0.304
Relatedness	0.757	0.733
Fairness	0.777	0.814
Overall Psychological Safety	0.866	0.935
Collaborative Capacity		0.822

Summary

Data obtained from 30 certified fifth through eighth-grade faculty members were presented in this chapter. The data were analyzed and presented, including survey instrument design, collection of data, survey data, data analysis, descriptive statistics, and inferential statistics. Tables and figures were included to provide a visual representation of the data.

In Chapter Five, the findings and conclusions are discussed. First, an overview and analysis of the data are presented. Then, findings of descriptive statistics and inferential statistics are shared, as well as the research questions, implications for practice, and recommendations for future study.

Chapter Five: Conclusions and Implications

Zhou (2021) showed the importance of leadership behaviors and teacher perceptions of leaders to be of significant importance to teacher collective efficacy. The results of his qualitative research found "teachers admired servant leaders who were not self-centered but had a humble heart willing to help others grow" (Zhou, 2021, p. 111). Other leadership characteristics rising to the surface of Zhou's (2021) research included "leaders who showed competency and accountability, knew what was going on and jumped right in to do the hard work and take responsibility" (p. 111).

Previous research shows a connection between student learning and the collective efficacy of teachers, as well as a connection between collective efficacy to psychological safety, collaborative capacity, and a positive school climate (Bandura, 2005, 2012; Berg, 2020; DeWitt, 2017; Donohoo & Mausbach, 2021; Donohoo et al., 2018; Garmston & Wellman, 2013; Gruenert & Whitaker, 2015, 2017; Harvey et al., 2019; Hattie, 2017, 2018, 2018, as cited in Waack, 2018). The purpose of this study was to investigate the relationships among the research variables of psychological safety, collaborative capacity, and school climate in order to bring focus to possible high-impact, overlapping elements to guide the intentions and behaviors of school leaders (Donohoo et al., 2018; Modoono, 2017; Zebeda et al., 2020). According to Brown (2021), "We can't live into values that we can't name AND, living into values requires moving from lofty aspirations to specific, observable behaviors" (para. 2).

Analysis of Data

A Pearson Product Moment Correlation Coefficient was used to identify the relationships between the research variables of psychological safety, collaborative

capacity, and school climate (Bluman, 2018; Fraenkel et al., 2019). Data were analyzed to gain an understanding of the research results (Bluman, 2018; Fraenkel et al., 2019). The alpha level was set at .05 (Bluman, 2018; Fraenkel et al., 2019). With a return rate of 30 surveys, the critical value was 0.361 (Fraenkel et al., 2019). According to Fraenkel et al. (2019):

> The sample correlation, therefore (independent of sign) must have a value equal to or greater than 0.361 for the researcher to reject the null hypothesis and conclude that there is a significant correlation in the population. Any sample correlation between 0.361 and -0.361 would be considered likely (i.e., due to sampling error) and hence *not* statistically significant. (p. 231)

Bluman (2018) explained the "range of the linear correlation coefficient" is a value from -1 to +1 (p. 552). He stated:

> If there is a *strong positive linear relationship* between the variables, the value of *r* will be close to +1. If there is a *strong negative linear relationship* between the variables, the value of *r* will be close to -1. When there is no linear relationship between the variables or only a weak relationship, the value of *r* will be close to 0. (Bluman, 2018, p. 552)

Possible relationships between the research variables were explored as part of this quantitative research study, including individual elements of psychological safety, including status, certainty, autonomy, relatedness, fairness, overall psychological safety, collaborative capacity, and school climate.

Findings

Results from this study were derived from responses given by 30 research participants using a survey created by the researcher. The data were analyzed in two stages. The first stage involved descriptive statistics, specifically organizing and analyzing survey results in comparison to demographic information survey participants provided. The second stage involved inferential statistics to gain a deeper understanding of the potential connections between the research variables.

The values of *r* were organized (Table 34) to provide a visual representation of the correlation coefficient for each of the following research variables: Status, Certainty, Autonomy, Relatedness, Fairness, Overall Psychological Safety, Collaborative Capacity, and School Climate.

Table 34

Summary of PPMC Values

Variable	Collaborative Capacity	School Climate
Status	0.807	0.865
Certainty	0.716	0.715
Autonomy	0.036	0.304
Relatedness	0.757	0.733
Fairness	0.777	0.814
Overall Psychological Safety	0.866	0.935
Collaborative Capacity		0.822

Descriptive Statistics

The first section of the survey included the following demographical questions:

1. What grade level do you teach?
2. What content(s) do you teach?
3. How many years of teaching experience do you have?
4. How many years have you been employed in this particular assignment/building?

Demographic questions were included due to the significance of previous research. First, it was important to gather information on the grade level and content taught due to research surrounding the different types of impact on students by different grade levels and contents (Fisher & Frey, 2018; Pennington et al., 2019; Pollock et al., 2021; Trusz, 2018). It was also important to gather information regarding the length of time participants had worked in education, as well as the particular assignment, due to previous research regarding the individual impact of school climate, collaborative capacity, psychological safety, and collective efficacy on student achievement, all concepts largely related to time and relationships within a team (Bandura, 2000 & 2012; DeWitt, 2017; Donohoo & Katz, 2019; Fisher & Frey, 2018; Garmston & Wellman, 2013; Gruenert & Whitaker, 2015, 2017; Harvey et al., 2019; Hattie, 2017, 2018; Parrett & Budge, 2020; Pennington et al., 2019; Trusz, 2018; Tucker 2019).

Demographic information regarding grade level taught was analyzed for each research variable. The following grade level categories were reported by research participants:

- Faculty members working with fifth grade students

- Faculty members working with sixth grade students
- Faculty members working with both fifth and sixth grade students, also referred to as middle school for the purposes of this case study
- Faculty members working with seventh grade students
- Faculty members working with eighth grade students
- Faculty members working with both seventh and eighth grade students, also referred to as junior high for the purposes of this case study
- Faculty members working with sixth through eighth grade students

Overall, the research variables were relatively similar in mean, ranging from 3.47 to 4.2. The mean score for autonomy, 4.2, was the greatest among all variables. Faculty members working with fifth grade students, as well as those working with both seventh and eighth grade students had the lowest standard deviation for autonomy.

Also observed among the demographic categories was the similarity between the variables of fairness and collaborative capacity. Across all demographic categories, fairness represented the lowest overall mean at 3.47, and collaborative capacity represented the second lowest mean overall at 3.58. Many of the lowest means within the demographic groups occurred within the concept of fairness, in which collaborative capacity also scored low, with the concept of certainty also close behind in this observation. The perception of fair versus unfair plays a vital role in team interaction, affecting the level of trust within a team (Brown, 2018; Reiche, 2016; Rock, 2013). The similarities represented in the survey results between fairness and collaborative capacity are supported by previous research as well as provide an important insight for leaders to ponder (Brown, 2018; Reiche, 2016; Rock, 2013). According to Causton (2021), school

leaders should take the time to form trusting relationships among school faculty, which will only benefit team efforts.

Inferential Statistics

Inferential statistics were used to analyze the 28 items in section two of the survey. The relationships between each variable relative to each survey item were investigated, including status, certainty, autonomy, relatedness, fairness, overall psychological safety, collaborative capacity, and school climate. A Pearson Product Moment Correlation Coefficient was used to examine potential relationships among the research variables. The correlation coefficient utilizes quartiles to measure the strength of each relationship between the dependent and independent variables (Bluman, 2018; Fraenkel et al., 2019). A review of the findings is as follows:

Research Question One

What is the relationship between each element of psychological safety and collaborative capacity in middle-level schools?

The correlation coefficient for status and collaborative capacity was calculated as $r = 0.807$. The null hypothesis, indicating there is no statistically significant relationship between status and collaborative capacity, was rejected.

The correlation coefficient for certainty and collaborative capacity was calculated as $r = 0.716$. The null hypothesis, indicating there is no statistically significant relationship between certainty and collaborative capacity, was rejected.

The correlation coefficient for autonomy and collaborative capacity was calculated as $r = 0.036$. The null hypothesis, indicating there is no statistically significant relationship between autonomy and collaborative capacity, was not rejected.

The correlation coefficient for relatedness and collaborative capacity was calculated as $r = 0.757$. The null hypothesis, indicating there is no statistically significant relationship between relatedness and collaborative capacity, was rejected.

The correlation coefficient for fairness and collaborative capacity was calculated as $r = 0.777$. The null hypothesis, indicating there is no statistically significant relationship between fairness and collaborative capacity, was rejected.

Research Question Two

What is the relationship between each element of psychological safety and school climate in middle-level schools?

The correlation coefficient for status and school climate was $r = 0.865$. The null hypothesis, indicating there is no statistically significant relationship between status and school climate, was rejected.

The correlation coefficient for certainty and school climate was calculated as $r = 0.715$. The null hypothesis, indicating there is no statistically significant relationship between certainty and school climate, was rejected.

The correlation coefficient for autonomy and school climate was calculated as $r = 0.304$. The null hypothesis, indicating there is no statistically significant relationship between autonomy and school climate, was not rejected.

The correlation coefficient for relatedness and school climate was calculated to be $r = 0.733$. The null hypothesis, indicating there is no statistically significant relationship between relatedness and school climate, was rejected.

The correlation coefficient for fairness and school climate was calculated to be r = 0.813. The null hypothesis, indicating there is no statistically significant relationship between fairness and school climate, was rejected.

Research Question 3

What is the relationship between overall psychological safety and collaborative capacity in middle-level schools?

The correlation coefficient for overall psychological safety and collaborative capacity was r = 0.866. The null hypothesis, indicating there is no statistically significant relationship between psychological safety and collaborative capacity, was rejected.

Research Question 4

What is the relationship between overall psychological safety and school climate in middle-level schools?

The correlation coefficient for overall psychological safety and school climate was r = 0.935. The null hypothesis, indicating there is no statistically significant relationship between psychological safety and school climate, was rejected.

Research Question 5

What is the relationship between collaborative capacity and school climate in middle-level schools?

The correlation coefficient for collaborative capacity and school climate was r = 0.822. The null hypothesis, indicating there is no statistically significant relationship between collaborative capacity and school climate, was rejected.

The Pearson Product Moment Correlation Coefficient when comparing overall psychological safety to school climate was 94%, demonstrating a statistically significant

relationship between these variables. This high of percentage would communicate one concept could almost predict the other (Bluman, 2018; Fraenkel et al., 2019). The concepts of cultivated relationships, trust, and certainty are common themes within the individual elements of psychological safety, as well as overall psychological safety and a positive school climate (Brown, 2018; Causton et al., 2021; Zimmerman et al., 2020).

Conclusions

The purpose of this study was to investigate potential relationships between the individual elements of psychological safety, overall psychological safety, collaborative capacity, and school climate in order to bring a focus to possible high-impact, overlapping elements to guide the intentions and behaviors of school leaders (Donohoo et al., 2018; Modoono, 2017; Zebeda et al., 2020). The survey instrument was designed by the researcher to gather demographical information relevant to the study, as well as responses related to the research variables. Data were organized in two stages: descriptive and inferential statistics to gain an understanding of potential relationships between the research variables.

As a result of the findings, the following conclusions were drawn:

- A statistically significant relationship existed between status and collaborative capacity.
- A statistically significant relationship existed between status and school climate.
- A statistically significant relationship existed between certainty and collaborative capacity.

- A statistically significant relationship existed between certainty and school climate.
- A statistically significant relationship did not exist between autonomy and collaborative capacity.
- A statistically significant relationship did not exist between autonomy and school climate.
- A statistically significant relationship existed between relatedness and collaborative capacity.
- A statistically significant relationship existed between relatedness and school climate.
- A statistically significant relationship existed between fairness and collaborative capacity.
- A statistically significant relationship existed between fairness and school climate.
- A statistically significant relationship existed between overall psychological safety and collaborative capacity.
- A statistically significant relationship existed between overall psychological safety and school climate.
- A statistically significant relationship existed between collaborative capacity and school climate.

Demographic information analyzed by descriptive statistics indicated means for each research variable were 3.47 and above, with the highest mean seen with the concept

of autonomy, followed closely by school climate, then the concept of certainty. The two lowest means were found within the concepts of fairness and collaborative capacity.

Inferential statistics indicated the strongest relationship between overall psychological safety and school climate, demonstrating an increase in one could predict an increase of the other. Statistically significant relationships were found among almost all of the research questions. The exception was the relationships between the concept of autonomy, an individual variable within the umbrella term of psychological safety, to both collaborative capacity and school climate. The decreased connection between autonomy and collaborative capacity is consistent with research, according to Rock (2009), who pointed out collaboration might lessen the perception of autonomy as teams work together rather than individually to increase student achievement.

As discussed previously, common themes woven among the research variables were seen in the literature review discussed in Chapter Two, as well as in the survey data. The concept of trust is connected to psychological safety, collaborative capacity, and school climate, which is consistent with the research data (Brown, 2018; Causton et al., 2021; Edmondson, 2012, 2018; Zimmerman et al., 2020). The concept of certainty was often connected to increased school climate, and decreased certainty was often tied to decreased collaborative capacity.

Rock (2013) discussed the brain research surrounding the concept of certainty. When certainty is absent, the prefrontal cortex reacts, potentially causing stress, which leads to unfamiliarity (Rock, 2013). Certainty is also tied to confidence in the research discussed in Chapter Two, as well as trust, which is connected to multiple concepts in the

research, including psychological safety, collaborative capacity, and school climate (Brown, 2018; Causton et al., 2021; Reiche, 2016; Rock, 2013; Zimmerman et al., 2020)

Implications for Practice

The review of literature and analysis of survey data indicate statistically significant relationships among the research variables, with the exception of autonomy to both collaborative capacity and school climate. Inferential statistics indicated the strongest relationship between overall psychological safety and school climate, demonstrating an increase in one could predict the increase in the other.

Previous research discussed in Chapter Two regarding the effect of collective efficacy on student achievement, literature relating the research variables of psychological safety, collaborative capacity, and school climate to both collective efficacy and student achievement, and finally, the results of this study provide potential implications for school leaders (Bandura, 2000, 2012; Berg, 2020; DeWitt, 2017; Donohoo et al., 2018; Garmston & Wellman, 2013; Gruenert & Whitaker, 2015, 2017; Harvey et al., 2019; Hattie, 2017, 2018, as cited in Waack, 2019).

First, school leaders should work to increase faculty members' status among collaborative teams. This can be accomplished by reducing perceived threats, as well as showing recognition for both team and individual work efforts. Feedback should be given constructively, as well as gently. Faculty members will work hard for leaders who value and appreciate team members, thus increasing their status. Fears of failure are reduced, and challenges are tackled head-on with the best efforts (Mind Tools Content Team, 2021).

As seen in the survey results, leaders should also work to increase feelings of certainty among faculty members. Offering frequent and clear communication, as well as consistency in how various situations arising within the school day are handled, can increase certainty among the team, and ultimately increase the team's feelings of safety. Authors Mousena and Raptis (2021) pointed out the importance of communication as education is a social endeavor. There are multiple ways for school leaders to communicate effectively, including the frequency of communication, clarity, and variety. Recent research showed teacher support and frequent feedback are ways to provide "teachers with a deeper focal lens for observing and analyzing classroom interaction" (Laskowski, 2021, p. 8). Knowing what to expect from a leader can bring feelings of safety even in times of overall uncertainty, such as the times schools have experienced recently during the COVID-19 pandemic.

Third, leaders should work to develop connections among faculty members, thus increasing relatedness among the team. This can be accomplished in multiple ways, including mentoring programs, cultivating collaborative teams, and even taking the time to show genuine care and concern for individual faculty members' lives, both personally and professionally.

Fourth, leaders should work to foster faculty members' sense of fairness. Day-to-day managerial tasks can increase perceptions of fairness among a team, particularly when the team is consulted in the creation of these tasks (Mind Tools Content Team, 2021). Other ways to increase perceptions of fair exchanges could include the inclusion of all faculty members in various tasks and teams, as well as not showing favoritism within the team. Specific team collaborative processes can be put in place, encouraging

equal voice from all members, thus increasing the perception of fair exchanges among team members, also increasing the capacity to collaborate effectively. The norms outlined by Garmston and Wellman (2016) can provide structured interactions, allowing for this equal voice, including pausing, paraphrasing, posing questions, paying attention to self and others, and presuming positive intentions.

Further implications lie in increasing the overall psychological safety among faculty members. Previous research has indicated trust can play a vital role in increasing the psychological safety of a team, as well as school climate and collaborative capacity (Brown, 2018; Causton et al., 2021; Edmondson, 2012, 2018; Reiche, 2016, Rock 2009, 2013; Zimmerman et al., 2020). School leaders who make the mistake of micromanaging faculty members decrease autonomy as well as motivation among faculty (Pink, 2009; Rock, 2013). Instead, by displaying trust, school leaders can foster faculty members' sense of belonging to a school team (Berg & Walker, 2021; Canli & Dermirtas, 2018). According to Wanless and Winters (2018):

> One major goal in creating a school climate for teacher learning is to create a sense of psychological safety: a sense that it is all right to enter a state of discomfort together because we have warm relationships with trusted peers who will support us as we take risks and learn together. (para. 7)

A school leader should take the time to form trusting relationships with faculty members, demonstrating genuine care and value for the team (Beck et al., 2020; Causton et al., 2021). The neuroscience behind the concept of psychological safety ensures every faculty member is an individual, and efforts should be made by school leaders to be aware of faculty member differences, strengths, weaknesses, and needs (Rock, 2009;

2013). There are many ways school leaders can accomplish this, including being present throughout the building, participating in team discussions, and taking the time to truly get to know faculty members.

School teams taking an active role in decision-making processes point to an overall climate of trust (Berg & Walker, 2021; Grissom et al., 2021). Leadership trust can empower faculty members to be agents of change and make instructional decisions, which could eventually pass empowerment to students to become masters of their own learning (Berg & Walker, 2021). According to Johnson (2021), teacher teams and the capacity to collaborate are of vital importance, particularly following recent school closures due to the COVID-19 pandemic. Faculty working collaboratively were less overwhelmed by the challenges of online learning than teams comprised of individuals who worked independently to form solutions (Johnson, 2021). School leaders can foster collaborative teams and demonstrate trust in faculty members by first working collectively to create a shared vision centered on student success.

From the creation of the shared vision, a vital concept to an increased school climate, teacher-led teams can be put in place to collectively tackle issues and collectively make instructional decisions (Bukko et al., 2021; Preston & Donohoo, 2021). It is easy for school leaders to desire a quick solution to issues as they arise (Toll, 2017). It is important for school leaders to take the time to truly listen to faculty members, hear all voices, and work together to provide solutions that can be processed through collaborative teams (Berg & Walker, 2021; Garmston & Wellman, 2013, 2014; Preston & Donohoo, 2021; Toll, 2017).

Recommendations for Future Research

Despite the research and conclusions drawn from this particular case study regarding psychological safety, collaborative capacity, and school climate, much work is needed to fully understand the relationships between the research variables, how they relate to collective efficacy, and needed leadership behaviors to increase collective efficacy among faculty members. The following recommendations for future research were identified:

1. Investigate both the individual elements of psychological safety, including the concepts of status, certainty, autonomy, relatedness, and fairness, as well as overall psychological safety in grade levels outside of middle-level. There are developmental, social, and emotional challenges in every stage of adolescence. It would be of great interest to learn perceptions of psychological safety among faculty members who work with both younger and older grade levels.
2. Investigate the perceptions of collaborative capacity with faculty members working in grade levels outside of middle-level. As stated before, there are developmental, social, and emotional challenges in every stage of adolescence. It would be of great interest to learn perceptions of collaborative capacity among faculty members who work with both younger and older grade levels.
3. Investigate the perceptions of school climate with faculty members working in grade levels outside of middle-level. As stated before, there are developmental, social, and emotional challenges in every stage of

adolescence. It would be of great interest to learn perceptions of school climate among faculty members who work with both younger and older grade levels.

4. Investigate both the individual elements of psychological safety, including the concepts of status, certainty, autonomy, relatedness, and fairness, as well as overall psychological safety in grade levels in a larger study, not limited to schools within a case study. It would be of great interest to learn perceptions of psychological safety among faculty members who work in different types of schools, as well as other areas of the state and country.
5. Investigate both the perception of collaborative capacity in a larger study, not limited to schools within a case study. It would be of great interest to learn perceptions of psychological safety among faculty members who work in different types of schools, as well as other areas of the state and country.
6. Investigate both the perception of school climate in a larger study, not limited to schools within a case study. It would be of great interest to learn perceptions of psychological safety among faculty members who work in different types of schools, as well as other areas of the state and country.
7. Extend this research beyond the relationships among the research variables to include student achievement and behavioral data. Student achievement data can include local district assessments, as well as state assessments, and national-normed assessments. Behavioral data can include categorized office referral analysis, as well as school leader and faculty narratives regarding student behavior.

8. Extend this research beyond a perception of group collaborative capacity to individual capacity to collaborate and awareness of self-efficacious behaviors. Although collective efficacy is not simply the sum of the individual group member's self-efficacy, it would be a worthwhile study to investigate since there are many individual factors affecting teacher effectiveness.
9. Explore this same or similar study using qualitative research. It would be interesting to dive deeper into the quantitative survey responses, gathering more specific information regarding faculty perceptions of psychological safety, collaborative capacity, and school climate through conversations, such as interviews. It would also be of great interest to have conversations with those in leadership positions who were excluded from this research.
10. Consider a study researching the benefits of teachers going into colleagues' classrooms to observe, learn, and provide constructive feedback regarding the implementation of instructional decisions. This could possibly be a step to promote trust and confidence, increasing the collective efficacy of faculty members, as well as providing learning experiences and further leadership opportunities for teachers (Berg & Walker, 2021; Donohoo & Hite, 2021).
11. Consider a study regarding hiring practices and the retention of effective faculty members, specifically centered around the leader's role in supporting new hires, including the implementation and monitoring of a mentoring program, frequent discussions, visiting the classrooms, equipping with adequate resources, and taking the time to form solid relationships. In a recent study conducted by Rasanen et al. (2021), over half of the teachers included in

the survey data reported they had the intention of leaving the profession. Leader support is vital to the retention of teachers, and poor leadership is listed as a contributing factor to teacher turnover (Eller & Eller, 2018; Goodwin & Stronge, 2018).

12. Explore leadership awareness of their own strengths and weaknesses and how they best work with faculty members (Reimer, 2017). School leaders should practice self-care to appropriately model the same for faculty and take the time to make sure they have a healthy, balanced lifestyle to effectively lead faculty members and students toward success (Friedman et al., 2020; Rock, 2013).

Summary

Chapter One included the background, theoretical framework, statement of the problem, purpose of the study, research questions and hypotheses, and the significance of the study. Definition of terms, delimitations, limitations, and assumptions were also provided. Chapter Two included a review of previous research, as well as current literature regarding the research variables of psychological safety, collaborative capacity, and school climate, as well as concepts related to those variables and collective efficacy. Chapter Three included a description of the research methodology, which included the problem and purpose of the study, research questions and hypotheses, research design, population and sample, instrumentation, data collection, data analysis, and ethical considerations.

Data analysis was provided in Chapter Four and included the survey instrument design, collection of data, and data analysis. Data were organized in two stages and using descriptive and inferential statistics.

A summary and conclusion were provided in Chapter Five and included an overview, analysis of data, and findings. Additionally, Chapter Five included a summary of both descriptive and inferential statistics, as well as research questions one through five, followed by conclusions, implications for practice, and finally, recommendations for future research.

Survey results indicate statistically significant relationships among status, certainty, relatedness, and fairness to school climate and collaborative capacity, as well as overall psychological safety to school climate and collaborative capacity. Considering previous connections regarding collective efficacy and student achievement, it is of vital importance for leaders to continually work to increase collective efficacy among faculty members and support teachers in efforts to sustain high-quality instruction in the classroom.

School leaders play a vital role in education due to the ultimate impact on student success through supporting efficacious faculty members and teams. With the negative attention surrounding today's teachers, the impact of the COVID-19 pandemic on schools, as well as the impact of current inequities not only in education but in surrounding communities and the country as a whole, it is more important than ever to realize the influence school leaders can and should have toward fostering collective efficacy and collaborative capacity among faculty, a positive school climate, and care toward the psychological safety of the school team. The ultimate goal of education is

student success. The road to student success must be paved with both effective school leaders and faculty members to provide students with opportunities, knowledge, relationships, and skills to provide the best education possible, as well as the most fruitful opportunities for success in life.

Sinek (2014) stated, “Leadership is a choice. It is not a rank” (09:52). It is important for school leaders to put others first for the good of both faculty members and students, specifically working to increase faculty members’ perception of status, certainty, relatedness, and fairness. Faculty members’ feelings of safety, value, and trust are vital to the success of a school. Positive steps toward collective efficacy, collaborative capacity, school climate, and ultimately student achievement will follow as school leaders truly value faculty members and relationships among those who care for students. Above all, the focus of school leaders should be centered around their people.

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Appendix A

Faculty Survey

A Quantitative Study of the Relationships Among Psychological Safety, Collaborative Capacity, and School Climate in Middle-Level Schools

Section 1: Demographics

1. What grade level do you teach?
2. What content(s) do you teach?
3. How many years of teaching experience do you have?
4. How many years have you been employed in this particular assignment/building?

Section 2: Likert Scale Statements

	Strongly Agree	**Agree**	**Somewhat Agree**	**Disagree**	**Strongly Disagree**
5. I am a trusted member of my team.	5	4	3	2	1
6. My team has a shared purpose and goals.	5	4	3	2	1
7. Faculty members show empathy toward coworkers when considering building decisions.	5	4	3	2	1
8. I feel valued by my team.	5	4	3	2	1
9. I do not have the opportunity to share in faculty collaborations.	5	4	3	2	1
10. I feel comfortable making mistakes on this team.	5	4	3	2	1

11. Our faculty members work together to meet the needs of students.	5	4	3	2	1
12. I feel safe to take risks with my ideas at this school.	5	4	3	2	1
13. Our faculty members have good character values, such as fairness, responsibility, and respect.	5	4	3	2	1
14. I am not free to be creative in my instruction.	5	4	3	2	1
15. I feel comfortable voicing concerns and thoughts regarding tough issues.	5	4	3	2	1
16. Communication between faculty members is clear and frequent.	5	4	3	2	1
17. I feel happy when I am at work.	5	4	3	2	1
18. Faculty members participate in the development of building efforts and changes.	5	4	3	2	1
19. I do not feel supported by my team.	5	4	3	2	1
20. Our team functions well together.	5	4	3	2	1
21. I feel respected by my team.	5	4	3	2	1

22. Faculty members accept each other, even if they are different.	5	4	3	2	1
23. I feel listened to by my team.	5	4	3	2	1
24. Faculty members are open to observing other teachers and being observed in order to learn from one another.	5	4	3	2	1
25. It is hard to ask other faculty members for help.	5	4	3	2	1
26. I make instructional decisions for my classroom.	5	4	3	2	1
27. We learn from each other through respectful disagreement.	5	4	3	2	1
28. I feel appreciated by my team.	5	4	3	2	1
29. All viewpoints are listened to and considered.	5	4	3	2	1
30. I am treated fairly by my team.	5	4	3	2	1
31. Our faculty takes the time to meet together.	5	4	3	2	1
32. I feel accepted by my team.	5	4	3	2	1

33. I like coming to work each day.	5	4	3	2	1

Appendix B

Recruitment Letter for Superintendent

Date:

RE: Permission to Conduct Research

Dear_____,

As a student in the Webb City, Missouri cohort of Lindenwood University's Educational Administration Doctoral Program, I am conducting research as a part of the requirements for this degree. The purpose of my dissertation is to investigate the possible relationships between psychological safety, school climate, and collaborative capacity at middle-level schools. I would like to request your permission to conduct research in the following buildings in your district: (School) Junior High and (School) Middle School.

If approval is granted, faculty members will receive an email with a link to a survey to complete on a voluntary basis. The identity of the faculty member will not be given at any time during this study.

Thank you for considering my request to conduct research in your district. If the details described meet your approval, please provide consent by a reply email to: kb609@lindenwood.edu.

Sincerely,

Karen Brownfield

Lindenwood University Doctoral Student

Appendix C

Letter of Participation for Certified Faculty Members

Date:

Dear Faculty Member,

As a graduate student in the Webb City cohort of Lindenwood University's Educational Administration Doctoral Program, I am conducting research about psychology safety, school climate, and collaborative capacity. I invite your participation in this study. You will find a link to a survey containing 33 items included with this email. The survey should take no longer than 10 minutes to complete. Your identity will remain anonymous and unidentifiable.

Thank you in advance for taking the time to complete this survey to help me with my educational efforts. A consent form is included in this email, which includes information regarding the scope of the study, as well as confidentiality and anonymity assurances. Completion of the survey instrument will indicate your willingness to participate in the study. If you require additional information or have questions, please contact me at kb609@lindenwood.edu.

Sincerely,

Karen Brownfield

Lindenwood University Doctoral Student

Appendix D

Consent Form for Certified Faculty Members

LINDENWOOD

Survey Research Information Sheet

You are being asked to participate in a survey conducted by Karen Brownfield and Dr. Trey Moeller at Lindenwood University. We are doing this study to explore the possible relationships between psychological safety, school climate, and collaborative capacity in middle-level schools.

The survey includes items relating to demographics, as well as Likert-type statements regarding psychological safety, school climate, and collaborative capacity. It will take about 10 minutes to complete this survey.

Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:
Karen Brownfield: kb609@lindenwood.edu
Dr. Trey Moeller: tmoeller@lindenwood.edu

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

<Link to Survey>

Vita

Karen Brownfield has served the Webb City R7 School District in Webb City, Missouri in different roles throughout the last 18 years. Brownfield was previously a primary music teacher, middle school counselor, and middle school assistant principal, and is currently a principal at Madge T. James Kindergarten Center. Prior to joining the Webb City School District, Brownfield was a secondary vocal music teacher at Carthage High School in Carthage, Missouri.

Brownfield received a Bachelor of Music Education from Pittsburg State University. She also received a Master of Science in Educational Leadership from Missouri State University, as well as a Master of Arts in Counseling from Missouri Baptist University.