

Is Teacher Content Area Related to Teacher Leader Behavior?
Exploring Patterns in Secondary Schools

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Abstract

This study examines the relationship between content area and teacher leadership behaviors within secondary schools. Most research regarding teacher leadership has focused on the development of teacher leaders and their impact on school organizations and climate. Additionally, research has sought to determine relationships between personal and professional factors and teacher leadership characteristics. However, research has omitted the relationship of teaching tracts and subject areas and their connection to teacher leader behaviors and characteristics. This study seeks to determine these relationships in order to equip school administrators with knowledge of whom in their school organizations has a stronger capacity to be teacher leaders and are most capable of the work.

Further addressing this subject, this study highlights the role that organizational bias and job content specialization play within school organizations as they relate to the identification and development of teacher leaders by building principals. Data from both teachers and administrators seeks to determine to what extent both groups influence the other and how these dynamics impact the organizational systems of a loosely-coupled distributed leadership model.

The discussion of data within this study demonstrates that teaching content is a factor as to how teachers display leadership characteristics. Further, data within this study supports the notion that school administrators identify teachers within certain content areas more often. These findings ask for further research into how professional characteristics of teachers and administrators impact teacher leadership and identification at a building level as well as addressing the limitations of this study in hopes of gaining a better understanding of who teacher leaders are and how they are identified and developed by their administrators.

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Chapter 1

Introduction

This study examined the relationship between teaching content area and teacher leadership behaviors within secondary schools as well as evaluated how school administrators identify teacher leaders within their buildings based on teacher content area. Within the context of teacher leadership identification, it was observed that there was little to no research conducted as to how a teacher's teaching content area impacted their leadership characteristics or behaviors, nor if that particular teaching area made them more or less likely to be identified as a teacher leader by their administrators.

Before moving further, it is important to define the concept of teacher leadership and what a teacher leader is. Overall, the concept of teacher leadership refers to a set of skills exhibited and demonstrated by teachers. These teachers' influence extends beyond their students and their own classroom to others throughout the school community; including colleagues and building administrators. Teacher leadership involves motivating and mobilizing others to improve school performance and student achievement as well as other school goals as it relates to teaching and learning. Teacher leaders carry expertise and skill in engaging others as well as proving to continually be models of best-teaching practices and collaborative leadership. Teacher leaders' influence does not come from being identified as a boss or authority figure, but rather from exhibiting leadership and understanding that leadership is an activity, not a position. In addition, "teacher leadership entails a passion for the mission of the school and the courage to confront obstacles to achieving that mission" (Network, 2002, p.12).

Discussed more extensively within Chapter 2, the history, purpose, and function of subject-related departments within secondary schools have all contributed to the establishment of distinctive cultures within each teaching subject area (Siskin, 1991). However, it largely seems that the impact of teacher content areas or teaching disciplines have regularly been unaccounted variables when conducting educational research, especially at the higher-educational levels. Tony Becher (1994) argued that despite content alike disciplines being the life-blood of higher education and its main social framework, it is puzzling that they figure so modestly in higher education research. Becher (1994) stated that despite each discipline's distinctive cultural characteristics, the research within and about academic disciplines are largely overlooked in research as well as within policy-making decisions. However, some, such as Biglan (1973) have examined the characteristics of educators' academic subject matter in order to bring to light the significant differences associated with teaching, learning, and cultural climate based on subject area. Within Biglan's study, it was determined that depending on the characteristics of their area, scholars differed in the degree to which they were socially connected to others, their commitment to teaching, research, and service, the number of journal articles, and technical reports that they published, and the number of dissertations that they sponsored.

These studies, while conducted primarily within the undergraduate and graduate settings, lay a foundation for further research and exploration within the implications of teaching content area and disciplines. To this point, educational research has continued to omit these variables in its research, especially within the secondary setting of middle and high school organizations. This study seeks to highlight the impact of teaching content area and leadership characteristics within those disciplines and how content areas relates to teacher leader identification by building administrators.

In order to do this, data was collected from both teachers and their building administrators. These research questions are posed together supporting the concept that teacher leadership is dependent on both teacher-led behaviors as well as opportunities provided by building principals (DeHart, 2011). In order to gather a more complete picture of how teaching content area impacts teacher leadership, data from teachers that was self-reported related to teacher leader behavior as well as data that demonstrated which content areas were receiving more opportunities to lead by their building principals was deemed relevant to the overall purpose of the study. Further implications related to similarities and discrepancies of building administrator selections within teacher leaders' identification and content area will also be discussed within the context of administrator content bias.

The relevance of this study is supported by the lack of overall research within the areas of job specialization, demographic traits of teacher leaders, and the impact of content bias within school organizations. Further, the concept of distributed leadership; a leadership model which utilizes the people within the organization to hold strong leadership roles, has driven much of the recent educational research within building and school district administration (Harris, 2003). This bottom-up approach to school leadership has been further supported by the concept of a loosely-coupled educational system (Weick, 1976). This study sought to determine advancements in the identification of teacher leaders based on a further understanding of professional demographic characteristics, such as teaching content area. Additionally, developing a more specific knowledge as it relates to administrative selection of teachers will supplement research currently within the areas of job specialization bias as well as forms of organizational bias. Combined, these results could provide school leaders with important information as to how to identify and develop teacher leaders, as well as provide educational

institutions data to train and teach pre-service teachers and administrators about teacher leadership characteristics.

To this point, most research regarding teacher leadership has focused on the development of teacher leaders and the definition of their roles and responsibilities within schools. In addition, research on the impact that teacher leaders and distributed models of leadership exert on school organizational climate and culture has been a significant focus in recent years. Combined with these central themes of teacher leadership research, other topics discussed throughout the review of literature highlight the impact that job specialization has on the selection of managerial promotions as well as themes presented within organizational and institutional biases. This combination of research findings illustrates the impact and potential contributions that this particular study has within the educational field.

Research has been limited in regards to the identification of teacher leaders and has omitted the studying of certain professional demographics such as teaching content area and its relationship to teacher leader behaviors and characteristics. This study looked to determine these relationships in order to equip school administrators with knowledge of whom in their school organizations have a stronger capacity to be teacher leaders and are most capable of the work.

Within this study, two research questions are asked. The primary research question asked to what extent does teaching content area effect how often or to what degree secondary teachers exhibit teacher leadership characteristics or behaviors. To study this, secondary teachers completed the Teacher Leadership Inventory survey. Participants received and completed the inventory via survey method recording answers on a Likert scale, as well as identified their teaching content area. The analysis of data determined differences between how teachers of

different content areas differ based on the four teacher leadership categories defined within the Teacher Leadership Inventory.

The work of Angelle and DeHart (2011) substantiated development and implementation of the Teacher Leadership Inventory as a means of determining and quantifying the existence and displaying of teacher leader behaviors and characteristics. This instrumentation has been statistically supported to correlate teacher self-reported data within different factors of teacher leadership. Each factor as defined within the study identified a variety of attributes, actions, and beliefs teacher leaders exhibit as defined throughout literature. Each of the factors in the four factor model explained different attributes of teacher leadership and related to established theories or theoretical constructs (DeHart, 2011).

The secondary research question of this study focused on building administrators' identification and preference as it related to identifying and developing teacher leaders within their respective buildings. In order to gather research within this area, building principals ranked their top fifteen teacher leaders in their building. In addition, principals identified what content area those teachers teach. The data gathered from building principals was then compared to the self-reported data of teachers to further investigate how content area effects the formal designation of teacher leaders by building administrators. In addition, data was utilized to determine overall building traits as they relate to teacher leadership behavior and how those traits relate to administrative identification of teacher leaders. This analysis could lead to further underlying administrative beliefs related to teacher behaviors, characteristics, and leadership qualities.

Given the lack of research within the area of teacher leadership identification, specifically in regards to professional demographics such as teaching content area, this study seeks to assist

building administrators in identifying which characteristics teacher leaders exhibit, as well as develop a better understanding of where higher concentrations of teacher leaders are or can be developed within their building. This study was designed to provide specific data to suggest the impact that content area has on teacher leadership as well as develop an understanding of how building principals identify those teachers and pursue their development. Research regarding the impact that teacher leaders and distributed forms of leadership have on building climate and culture further validate the need for a study seeking to assist building administrators in the identification of teacher leaders. This study aimed to provide not only answers to the research questions being asked, but to pose further research questions for future research and calls for study within the areas of teacher leader identification and targeted professional development and retention of teacher leaders in schools. Discussed further in the literature review, the work of Goldring (2007), Samsadin (2007), and Fullan (2008) supported the claim that educational background and experience shape both leadership ability and the impact school leaders have on student achievement.

The coming chapters will seek to bring clarity and relevance to this study's purpose, methods, data analysis, and the lasting implications of this study and recommendations for future research. In Chapter 2, a review of literature will define the overall themes of current literature within teacher leadership as well as seek to bridge the gap from teacher leadership to organizational bias and how they relate to both formal and informal leadership within schools. Chapters 3 and 4 will identify the measurements and methodology of the study as well as provide insight into how data is collected and analyzed within the study. Finally, Chapter 5 provides insights to the overall impact of the study's findings, the lasting implications of what was discovered as well as the limitations and opportunities for other research to be conducted to both

support as well as build upon the findings within this study. Overall, this study seeks to support and assist educational leaders in their pursuit of influencing building and teacher leaders to have the most positive effects on building culture and student success.

Chapter 2

Literature Review

Introduction

Strong school leadership has been shown to positively affect schools and school organizations. Ranging from student learning to fiscal management, school leaders, typically school administrators, are responsible for the leadership and management within a school system. For years, the view that headship refers to leadership has dominated the concept of school leadership (Muijs & Harris, 2003). However, throughout the last two decades, in the midst of constant educational reform, school leadership has continued to shift from a singular principal or head administrator to the concept of distributive leadership. This shift has allowed for teacher leadership to gain momentum and acceptance (Muijs & Harris, 2003). Now more than ever before, teachers are assuming more formal and informal leadership roles within their schools related to instructional and organizational practices.

At its conception, teacher leadership was seen more specifically as an instrument for school improvement and increased student learning (Smylie, Conley, & Marks, 2002). As teacher leadership has grown, recognition of its importance has increased significantly, in addition to the vision of what roles teacher leaders have, contributions they make, and the potential impact they have on schools (York-Barr & Duke, 2004). Overall, research within the field of teacher leadership has focused predominately on three major areas. The first of these has focused on defining teacher leadership as a whole as well as defining what roles and characteristics teacher leaders possess. Second, a wealth of research on how teacher leaders are developed by school administrators directly and through professional development opportunities has been conducted. Third, research exploring the impact that teacher leaders make within

school organizations, specifically in the areas of student achievement, school improvement, and building culture have been conducted in hopes of demonstrating continued need and growth for teacher leaders in school organizations.

More recent literature and research suggest that organizations are stronger and function more efficiently when all individuals are actively involved. While teacher leadership has looked to provide teachers with opportunities to become leaders in their classroom, new roles for teacher leadership now look to utilize teachers in school management decisions, evaluation of instructional initiatives and resources, and facilitating professional learning communities and professional development (York-Barr & Duke, 2004). While research has grown significantly more popular with the development and success of professional learning communities and transformational leadership practices, interestingly, little research has been conducted to study how professional demographics relate to the identification of teacher leaders. Overall, there has been a lack of discussion and correlational research regarding teacher's professional demographics and leadership capacity and practice.

This study examines the relationship between content area and teacher leadership behaviors within secondary schools. Research that focuses on the relationship of teaching tracks and subject areas and their relationship to teacher leader behaviors and characteristics has not been conducted within this research model. This study seeks to determine the relationship of content area and teacher leadership characteristics to further equip school administrators with knowledge of whom in their school organizations has a stronger capacity to be teacher leaders and are most capable of the work.

Literature Themes and Weaknesses

Numerous researchers have noted that while teacher leadership has been a topic regularly researched over the last decade, it has rarely been successfully defined. In fact, most literature on the subject details teacher leadership in a variety of ways. For example, Kenneth Leithwood and Duke (1999) stated in their review of school leadership that what has been learned about leadership in schools has not been dependent on any clear, agreed upon concept. Adding to this belief, Wasley (1991) noted that one of the major issues within the topic of teacher leadership is its definition. Wasley reported that in interviews with both teachers and school administrators, individuals reported in best case scenarios, vague answers. Her work concluded that the educational community had multiple interpretations of the teacher leaders' roles and purpose. Due to unclear definition, educators labeled as teacher leaders have found it difficult to define their own roles. Wasley (1991) stated that the lack of differentiated roles among teachers had historically created difficulty in regards to the concept of teacher leadership overall, as the mere concept of teacher leadership challenged the hierarchical norms of education that have long been established.

Teacher Leadership Defined

In search for clearer meaning, researchers have made attempts to better define teacher leadership. To do this, relationships between the reach and impact of teacher leaders in the context of school reforms have been examined (Scribner & Bradley-Levine, 2010). Further areas of extended research have focused on how teachers influence their peers in areas such as curriculum, government, and other structural reforms. The work of Brooks, Scribner, and Eferakorho (2004) noted that in the midst of reform movements, teachers defined leadership in terms of their decision-making authority while administrators defined teacher leadership as their

ability to influence instructional practices. Crowther, Kaagan, Ferguson, and Hann (2002) discussed that both teacher leadership and administrative leadership run parallel, with teacher leaders exerting pedagogical influence and administrators providing strategic influence. Further attempting to define differences of teacher leaders and school administrators, other researchers highlighted teacher's participation in decision making and curriculum development as significant factors in the context of defining teacher leadership (Scribner & Bradley-Levine, 2010).

The work of educational researchers to further define teacher leadership is significant as it facilitates the depth and breadth of identifiable teacher leader roles as well as their personal characteristics and temperament. Silva, Gimbert, and Nolan (2000) published one of the first and noticeably one of the most cited studies to describe the evolution of teacher leadership over the last two decades. The authors sought to illustrate the transformative nature of teacher leadership in three distinct waves. The first of these waves described the formal roles of teacher leadership. These formal roles of leadership included teachers as department chairs, master teachers, or working as teacher's union representatives. The second wave transferred leadership roles of teachers to those of instructional leaders. This wave described the role and work of teacher leaders as curriculum experts, mentors to younger teachers, and instructional coaches assisting to facilitate better instructional strategies throughout their school buildings and districts. Silva, Gimbert, and Nolan (2000) depicted teacher leaders in the third wave of teacher leader reform as individuals who were the primary creators and re-creators of overall school culture and climate. As noted by Silva's team, these waves have reshaped their purpose over the last couple of decades. This is due in part to the fact when teacher leaders were first introduced to new formalized roles, these "opportunities" were in areas that teachers rarely cared about or had been given any training in how to fulfill them. Furthering this notion of teacher leaders as culture

creators and re-shapers, this conceptualization of teacher leadership includes the collaboration of teacher leaders with other teachers to discuss common problems, share approaches to various learning situations, as well as to explore ways to overcome the structural constraints of the educational field such as limited time, resources, and restrictive policies (Silva, Gimbert, & Nolan, 2000). These waves of teacher leadership described have remained relevant given the extent that other researchers have used these described roles and responsibilities in ongoing research defining teacher leadership and teacher leaders.

Due to continued arguments regarding the concept and implementation of teacher leadership as a leadership model, many researchers have supported the insistence that teacher leadership must value collegiality and professionalism in order to assist and enable colleagues to improve professional practice (Wasley, 1991). The contributions of Wasley and others have assisted in the development of a framework of teacher leadership that supports the modern concepts of distributed leadership and professional learning communities.

Teacher leadership involves the experimentation and examination of more powerful learning activities with and for students, in the service of enhanced student productions and performances of knowledge and understanding. Based on this leadership with and of students, teacher leaders invite other teachers to similar engagements with students in the learning process (Sergiovanni & Starratt, 2006, p. 149).

Literature detailing the history of teacher leadership and the difficulties in formalizing a definition highlights the complex nature of the topic as a whole. While historically teachers have assumed roles such as department heads, members of advisory and governing committees, or within teacher unions, these roles have often been expressly defined throughout past decades as belonging to the most tenured or academically inclined teacher. In addition, teachers within

these formal positions with designated roles and responsibilities have been thought of more as an extension of school administrators than as teacher representatives. However, new and increased recognition of teacher leadership, visions of expanded roles, and a conceptual framework of the impact of teacher leaders have caused research within these areas to gain popularity within the educational research community and have created new efforts to formalize teacher leaders' roles (Smylie & Denny, 1990). Researchers have stressed the need for continued expansion of action research within these areas of teacher leadership as it is needed to reshape teacher leaders' roles, development, and impact.

The Roles of a Teacher Leader

Research and discussion within teacher leadership continued to tweak and redefine what teacher leadership is and how it is incorporated within different educational leadership models. Most often, educators describe a teacher leader as a great teacher inside the classroom, one who studies current educational theory and instructional practices, and one who holds students to high expectations while still forming supportive relationships (Suranna & Moss, 2000). Similarly, Katzenmeyer and Moller (2009) defined several teacher leaders' roles, including aspects of leadership within and beyond the classroom, influencing other teachers towards improving their educational practice, as well as identifying with other like-minded teacher leaders. Other research contributions from Muijs and Harris (2003) defined three main roles for teacher leaders. The first described teacher leaders as facilitators, instructional coaches, mentors, trainers, or curriculum specialists. The second designation identified teacher leaders within operational tasks, some formal and others informal. These included department chair positions, action researchers, or members of a task force. The final defined set of roles identified teacher leaders as those who shared in the decision-making process, contributed to school improvement teams,

or belonged to parent teacher associations or committies related to local business partnerships (Muijs & Harris, 2003).

While some literature has specifically addressed the formal role of teacher leaders in schools, there has yet to be a systematic overview provided of how teacher leaders do what they do or what it clearly looks like in practice. Instead, researchers have sought to identify traits that seperate educators from their peers as well as to categorize the roles and positions that teacher leaders hold (Lambert, 1998). Darling-Hammond, Bullmaster, and Cobb (1995) research identified literature that suggested all teachers can be teacher leaders within both a formal and informal context. The research of Barth (1991) adhered to this idea, adding that in a general sense, the makeup of teaching and the educational system as a whole allows for any teacher to fulfill the role of a teacher leader at anytime. Additional support by Katzenmeyer and Moller (2009) illustrated that teacher leadership can be defined simply as teacher leaders are those that positively influence others. This research supports the assertion that teacher leaders can lead both formally and informally within the right conditions when holding the right attitude and collaborative skills. Unfortunately, some researchers offer that there is no specific set of formal roles for teacher leaders due to the fact that often there is generally a lack of leadership opportunities available to exemplary teachers (Snell & Swanson, 2000). However, when opportunities are available, Katzenmeyer and Moller (2009) stated that teachers must understand and be prepared to accept the expectations of teacher leadership. These expectations encompass the need to be able to participate in a shared decision-making and collaborative environment dedicated to increased student achievement, student learning, and continuous reflection. Within this context, teacher leadership and teacher leaders would become most successful.

Related to teacher leader roles, literature has extended in attempts to identify specific individual characteristics most represented by teacher leaders. A seminal study conducted by Miles, Saxl, and Lieberman (1988) over a two-year time period followed a group of teachers who recently moved into formalized teacher leadership positions. The data gathered suggested that teacher leaders felt instrumental in building trust and developing rapport among their peers and felt skilled in diagnosing organizational conditions and assisting colleagues in managing school politics. Research consistent within these concepts indicated that teacher leaders were those who were innovative risk takers that inspired colleagues to be problem solvers (Rosenholtz, 1989). Further research by Conley and Muncey (1999) asserted that teacher leaders valued organization, integrity, proper investment of resources, and possessed a desire to professionally grow. Definitions of positive and effective traits within teacher leaders included those strong interpersonal skills as well as empathy, persistence, and flexibility (Yarger & Lee, 1994). K. A. Leithwood (1992) added to this work by suggesting that a teacher with these skills could be defined as a teacher leader no matter the role, formally or informally.

Theories developed by Katzenmeyer and Moller (2009) and York-Barr and Duke (2004) further added to identifying personal teacher traits. Of note, teacher leaders were found to exercise professional responsibility both in and out of the classroom as well as demonstrate content expertise, collaborative and reflective skills, as well as exude a sense of empowerment (York-Barr & Duke, 2004). Teacher leaders themselves have regularly defined their roles primarily in terms of helping and supporting fellow teachers within their buildings (Smylie & Denny, 1990). Teacher leaders further cited that their main function should be as facilitators for what classroom teachers wanted to achieve as well as to provide emotional support for their colleagues (Smylie & Denny, 1990). Teacher leaders don't "teach" teachers; instead, they do

their work with teachers, helping them to imagine and create another reality, helping them to engage in regular, reflective discussions about instruction. (Guiney, 2001). To succeed, teacher leaders must be willing to not be recognized as a leader, while at the same time, be able to foster leadership among teachers who rarely regard themselves as leaders (Guiney, 2001).

Rich in literature and study, the identification and definition of teacher leadership and teacher leaders' roles and traits has impacted school leadership, reform, and research. However, researchers continue to urge those involved in educational reform to expand the opportunities for teachers who want to step into formal positions of leadership while remaining classroom teachers (Snell & Swanson, 2000). In regards to this current study, while research has attempted to explain the qualities and traits teacher leaders embody within their educational environments, the research is silent in the area of identifying teacher leaders based on professional demographics. Despite continued research and literature attempting to define the topic or discern what formal and informal roles these leaders practice, there has been no mention of who these leaders are, but only what they can do and what abilities they possess. Further literature regarding the development of teacher leaders and their impact on student achievement and building culture continues to demonstrate that despite a rich field of literature and scholarly research, identification of teacher leaders is a missing theme. Due to this, a study seeking to identify teacher leaders and their niches within schools and their subsequent development is necessary and would be a contributing influence into the literature field as well as have institutional merit for both teacher and school administrative development and practice.

The Identification of Teacher Leaders

The call for definitive roles for teacher leaders and distributed leadership models is fueled by conclusive research over the last two decades that demonstrates that teachers, too long silent

and isolated in classrooms, must take on more leadership roles in the restructuring of public education (Wasley, 1991). To do this, administrators must be able to identify teacher leaders within their buildings both informally and formally. In order to further develop teacher leaders, building administrators must understand what niches teacher leaders are a part of and how organizational factors impact their behavior.

This study on the identification of teacher leadership characteristics based on teaching content seeks to fill holes left in existing research regarding the identification of teacher leaders. While literature has sought to determine what teacher leaders do and define characteristics of their work, there are gaps that leave out knowledge as to other factors that limit or extend the opportunities for teachers to become teacher leaders. Smylie (1995) addresses the fact that overall, literature reflects a narrow view of teacher leadership. Until now, literature has viewed teacher leadership as a position to which teachers are appointed and a specific role they are then expected to fulfill. While early research within teacher leadership was needed to designate roles, responsibilities, and characteristics of teacher leaders, there is a strong need currently for literature to explore more effective ways of developing teacher leaders. Of these needed strategies, studies such as this current study are needed to further assist building administrators in seeking out potential teacher leaders, tailoring professional development based on current leadership needs, and providing opportunities for teachers to reflect on their own leadership capacity and development. Only within the last few years has literature expanded into less structured forms of teacher leadership that are focused within distributive models of school leadership. Further work has suggested that a growing number of educational researchers have written about the importance of teacher leadership because of the increased recognition of the important role teacher leaders play within reform movements both nationally and within local

school systems. Within his research, Walling (1994) sought to examine the concept of teacher leadership further beyond the formal roles of school leadership and urged his colleagues to do the same. He has continued to argue that literature is needed to look specifically into those teachers who lead and asserts that reform and real change cannot be achieved without attention to teaching and teacher leadership.

Perhaps the most telling justification for the need of this study comes from an analysis of teacher leadership conducted by Snell and Swanson (2000). Within their study, the authors argued that research has failed to define the notion of teacher leadership as to who exactly is included in this category. Instead, the bulk of the work surrounding teacher leadership has concentrated on identifying the traits that separate teacher leaders from their peers or categorizing the roles and positions that teacher leaders hold (Snell & Swanson, 2000). This argument continues to ring true within the current scope of teacher leadership research. With the continued emergence and acceptance of teacher leadership and distributive leadership within school leadership practices, a specific focus on identification of teacher leadership and the likelihood of their emergence and development is needed to further enhance the impact of teacher leadership in schools.

Why Content Area Matters

There have been a small number of educational researchers who have sought to illustrate the relationships that teaching content areas have within pedagogy, curriculum, cultural dynamics, as well as in regards to the personal characteristics of the individuals that teach the subject area. Despite heightened awareness of the importance of subject matter as a variable within educational systems, there are few studies that have used a comparative subject matter approach to research secondary schools and their teachers (Grossman and Stodolsky, 1995).

Grossman and Stodolsky published a study which focused specifically on how teachers in different content areas view their content differently than others and how those beliefs shaped their instructional and curricular choices. Here, the authors discussed subject matter as one of the primary organizers of the professional life of secondary school teachers. It was argued that subject matter influenced instructional practices as well as how teachers thought about curriculum, learning, and teaching. Grossman and Stodolsky (1995) stated that the nature of the secondary teaching field was strongly integrated within the development and maintenance of norms, values, and policies. Examples such as student tracking, teaching assignments, student placement, and grading policies were given as norms and policies that are usually set at the department level. The authors demonstrated that these policies differed amongst departments because of the differences among the subjects themselves. Therefore, subject matter impacts teachers' individual and collective expectations for students and the manner in which departments enact curricular and other policies (Grossman and Stodolsky, 1995).

The work of Grossman and Stodolsky was shaped by some of the earliest comparative research done on teaching content area by Leslie Siskin. Siskin (1991) stated that distinctive teaching subject areas created subject subcultures. The author states that the mere presence of departments within secondary school systems is so normalized, that it has been taken advantage of, and therefore never fully researched in regards to department dynamics and their impacts on educational systems (Siskin, 1991). Within the case study, Siskin went as far as to describe walking into different department meetings was akin to stepping foot in a different world. From the use of different content-specific language to the use of distinctive instructional strategies, as well as the expectations for students and teachers alike; all were unique to each department. Further, Siskin (1991) discovered that department subculture was reflected in classroom layout,

office organization and the use and existence of classroom equipment. Siskin's research demonstrated that the distinctive subject areas are fundamental units to consider in understanding both the organizational and sociocultural environment within a high school.

Stodolsky and Grossman (1995) later published an additional study intending to address this issue by arguing that understanding subject-matter differences among high school teachers was crucial to successful reform within secondary schools. Within their study they supported Siskin's identification of content subcultures and argued that teachers don't just belong to a subject area, but rather belong to a distinct subject subculture. As discussed in their findings, these subcultures were characterized by differing beliefs, norms, and practices (Stodolsky and Grossman, 1995). These findings illustrated that the shared beliefs within these subcultures can shape, support, and complicate efforts when restructuring school curriculum or implementing instructional shifts as each subculture shares distinct beliefs and practices as they relate to the educational system overall.

This research illustrates the importance of subject areas both within the academic and social dynamics of secondary schools. Not defined or researched within their work however, was the concept of variability or distinctness as it relates to teacher leadership behaviors and characteristics, or department relationships with building administrators. These examples provide opportunity for studies focusing on teacher leadership to fill the void in research within subject area culture and dynamics. It has consistently been shown in research both at the secondary and higher education level that content matters, and has consistently been described as an area that needs further research, albeit with little actual research being conducted. This serves as additional justification for the need of a study that focuses on non-researched variables such as teacher leadership as it relates to content area dynamics and culture.

Educational Background, Content Specialization, and the Impact on School Leadership

As discussed, very little research has been conducted related to the educational background, training, and teaching concentration of school leaders, both inside the classroom and out. National and state databases have focused their studies on years of experience, level of degree earned, gender, and race. Researchers have followed this trend of omitting teaching background and licensure as important factors in shaping and identifying school leaders. However, there has been a small subset of school leadership research focusing on how the experiences of those before obtaining leadership positions has shaped their leadership characteristics and impacts on student achievement.

One of these groups of researchers suggested that a factor in assessing leadership included not just personal characteristics and skills, but the amount and type of experiences an individual had (Goldring et. al, 2006). Expanding this notion, Leithwood (2004) discussed that some knowledge needed within school leadership was specific to the context of individual learning experiences and was acquired only through participation with others in those activities. Together, these researchers point out that not only are specific experiences needed to obtain and develop leadership capabilities, but they are often unique to the context that they are acquired within. Within the context of this study, these concepts relate to content area and its relationship to the leadership characteristics and behaviors of teacher leaders. This supports the assumption that the background, teaching and learning experiences, and general behavior and knowledge of teachers within different content areas could shape their teacher and leadership behavior overall.

Using the ideas of the researchers mentioned above, a study conducted by Sturgis, Shiflett, and Tanner (2017) examined the educational background of leaders in small, high poverty, high minority schools. The goal of this study was to determine if the concentration area

and background of the school's leader was related to the academic success of the student within the school. As stated within their study, the premise was that the principal's behavior and leadership ability was influenced not only by the knowledge acquired through training in school leadership, but training in other content areas as well. The researchers developed their conceptual framework based on the research of Mumford et. al (2000), who demonstrated that leadership ability was defined by a combination of motivation, personality, career experiences, and cognitive understanding.

With this understanding, Sturgis, Shiflett, and Tanner (2017) surveyed a set of principals with a variety of educational backgrounds, teaching content backgrounds, training, and years of experience. Of particular interest to this study focusing on the impact of content area on teacher leadership, was the researchers first question. This question inquired about the possibility of the existence of a relationship between the leader's concentration area, or past teaching content area, and the overall rating of the school as it relates to student achievement on the state assessment.

Within the small setting of this study, the researchers determined that the relationship of a leader's concentration area and school success was not statistically significant. However, the research focused primarily on schools who scored at the exemplary and recognized levels. In looking at the data overall, there were significant differences as to how buildings fared on the state assessments based on the concentration of the leader when looking at the lower levels of student achievement. Even though these differences occurred in the lower levels of student achievement and not relevant to the findings of Sturgis, Shiflett, and Tanner (2017), these findings suggest the need for further study of the content specialization of leaders and how it relates to school leadership. Therefore, the question of specific coursework, educational backgrounds, and the impact on school and student achievement is becoming more prominent

(Sturgis, Shiflett, and Tanner, 2017).

While the researchers' study focuses on school leaders, specifically building administrators, it is relevant to the research questions within this study on content area and teacher leadership behaviors. Research has continually shown that teacher leadership is not only a pipeline to the principalship, but a key way of keeping quality educators in the profession (Marvel, J., Lyter, D., Peltola, P., Strizek, G., & Morton, B., 2006). Given the argument provided by Sturgis, Shiflett, and Tanner (2017), it is reasonable to suggest that if content specialization and education is a contributing factor to leadership ability and student achievement, it could also be a key indicator in teacher leadership ability as well as how teachers display teacher leadership behaviors and characteristics. The research of Goldring, Leithwood, and Mumford would also support the notion that teaching experience, and the unique experiences and skills gained through the acquisition of specific content knowledge and teaching practices of each content area could have a significant bearing on teachers and their leadership ability. Due to this, further research within content specialization and its impact on teacher leadership behaviors and characteristics is needed within the scope of literature surrounding both teacher and educational leadership.

How Promoting Within the Business World Applies to Teacher Leadership Identification

While to this point the focus of the literature review has been to seek clarity regarding teacher leadership and to highlight the need to study the identification of teacher leaders, future sections will focus on the development and impact of teacher leaders within their school organizations. However, to fully understand the need and development of this particular study and its research questions, it is necessary to discuss, in more detail, the potential preference related to school administrators "promoting" certain groups of teachers, potentially based on

content, over others. The secondary research question of this study examined the content areas of teachers identified by building administrators. It was discussed that opportunities to exhibit teacher leaders by building administrators is a key part to the overall distributed system of teacher leadership. This data as analyzed within the study sought to determine any patterns of administrator selection of teacher leaders. If such patterns exist, further discussion and research regarding content preference could be explored. A study such as this one that attempts to identify teacher leaders and provide administrative knowledge of which teachers are most regularly asked to accept formal roles of teacher leadership is needed to understand potential administrator preference related to content area and to better understand the potential hierarchy of content area in schools. Given that one of the research questions within this study seeks to determine if a content preference exists from building administrators when identifying teacher leaders, it is worth researching and discussing research that has taken place in the business world regarding hiring and promotional practices as they relate to preference, bias, and equal opportunity.

Greenhaus, Parasuraman, and Wormley (1990) examined institutional biases in the workplace and discussed how race impacted organizational experiences, job performance evaluations, and overall career outcomes for both white and black managers throughout three different work organizations. The study discovered that compared to white managers, blacks felt less accepted in their organizations, perceived themselves as having less discretion on their jobs, received lower ratings from their supervisors on their job performance evaluations, were more likely to have reached career plateaus, and experienced lower levels of career satisfaction. This study by Greenhaus et al. (1990) has been well cited by other researchers seeking to define organizational biases related to other demographic factors. Of these, the work of Heilman (2001)

sought to prove that the scarcity of women in upper level management positions was a consequence of gender bias in job performance evaluations. Heilman's study proposed that gender stereotypes and the expectations they produced resulted in an overall devaluation of women's performance, denial of credit to them for their successes, or even a penalization for being competent. Overall, Heilman (2001) argued that due to gender bias and its influence in work settings and the way in which it influences evaluations in work settings, being competent did not ensure that a woman would advance to the same organizational level as an equally performing man. Heilman's data supported research into the areas of institutional bias based on gender as well as provided substantial support for those who have sought to expand on that work.

While both race and gender have had substantial literature written in regards to their overall effects on individuals and organizations, studies on job specialization and specialized skillset draws the closest parallels to this study. Elliott and Smith (2004) compiled survey data in hopes of supporting their hypotheses regarding differential access to workplace power among women and minorities relative to white men. Specific findings indicated that all groups encountered increasing inequality at higher levels of power, when compared to white men. Analysis also showed that most groups attained power through social reproduction, but what differed among women and minorities was the opportunity and access to engage in similar social settings as compared to white men.

Of most interest, findings of Elliott and Smith (2004) suggested that the unequal number of white males in leadership positions was a direct result of these same white men holding a substantially larger number of specialized positions before being promoted to management. These specialized positions, compared to the jobs of their female and minority colleagues, made these white men more applicable candidates for the leadership positions based on the job

requirements and access to upper level management. This hoarding of specialized positions made these men the most likely candidates for next level advancement despite other demographic characteristics, work experience, or competency. The work of Elliott and Smith (2004) demonstrated that organizational bias can have multiple tiers and demonstrate layered effects. Why individuals other than white males were rarely hired or promoted to specialized jobs was found to be just one layer of institutional bias, leaving the hiring for leadership positions a secondary cause of the former. Thus, bias resulting in who was hired for specialized positions created an additional layer of inequity within the managerial force.

These studies, while cited outside the context of educational organizations, are relevant to the current study at hand. Despite the lack of research on educational hiring bias, it can be hypothesized that these biases have the possibility of being present within educational organizations. Elliot and Smith's (2004) work within job specialization and its effects on job promotion most closely resembles the specialization required within teaching content areas. Educationally speaking, content areas in secondary schools require specific skills from teachers related to instructional and pedagogical ability. The research conducted regarding biases provides context that a bias may exist based on the notion that specific skills and abilities inherited by teaching a specific content area could be more easily transferred or developed to match the skills needed to be a teacher leader. In other words, it is a possibility that building administrators might believe that what skills it takes to succeed as a teacher within a specific content area makes one more likely to succeed as a teacher leader due to belief that certain content specific skills are more relatable or transferable to teacher leader behaviors than others. Further, the past teaching content area of building administrators themselves may play a role in how they identify and develop leaders. Other possible explanations of administrator selection

could come from the reliance and importance the educational system as whole places on core subject areas, like Math and Science.

However, this study is not designed to determine the root of any preferences or if teacher leadership skills are developed independently of the educational setting or are a product of the educational environment. This study is designed to provide data to determine which specialized content areas most often exercise teacher leadership and are most often asked by their principals to fulfill formal teacher leadership roles within their buildings. This study will call on the need for future researchers to seek the answers to the nature of job specialization skills and which content area skills make for a better transition to teacher leadership behaviors, other than what is hypothesized in the conclusions of this study.

Within this context, a recent study conducted regarding the “tapping” or recruiting from building administrators of teachers to pursue school administration careers draws interesting parallels to the studies related to organizational bias related to race, gender, job specialization, as well as other educational factors such as leadership experience and teaching content area. Myung, Loeb, and Horng (2011) conducted their study using one large urban school district to examine the identification of potential teachers for school leadership positions. One of the central research questions of this study was to determine which teachers were most likely to be tapped by building administrators to pursue school administration careers. The researchers looked at demographical reasoning such as race and gender as well as multiple characteristics specific to education. Unfortunately, the data analysis within this study failed to address the statistical significance of content area in relation to being tapped by a building principal. Although the definition and roles of teacher leaders are very different than those of building administrators, this study addressed the fact that content area may have some connection to

school leadership. However, as mentioned, the authors failed to articulate any conclusions from the data they collected in regards to content area despite correlational data broken down based on content area. Based on the tables provided in the study, specific content areas such as ELA, Math, Science, and Social Studies were found to be more likely to be tapped than Physical Education teachers. Interestingly, Special Education teachers were twice as likely to be tapped according to study results than core content area teachers and almost ten times more likely than PE teachers (Myung et al., 2011).

This study further demonstrates the need of a detailed analysis related to content area teaching and school leadership. However, Myung et al. (2011) discuss important findings related to teacher leadership and its relationship to being tapped for building administration positions. One of the main articulated conclusions of the study was that teachers with leadership expertise are significantly more likely to be tapped than teachers lacking any such experience. Specifically mentioned as a contributing factor to “tapping” was a teacher’s membership on the school leadership team. Myung et al. (2011) cited that this factor alone increased the odds of a teacher being tapped by more than three times. This conclusion demonstrates the need for not only building administrators, but district administrators to successfully identify and appropriately develop teachers into teacher leaders as it serves as a pipeline for further leadership and administrative responsibilities, especially given the lasting impacts on a building culture and climate if such preferences exist, as they have the potential to be magnified over time.

The Impact of Teacher Leadership on Building Culture

While most studies regarding teacher leadership have not focused on how to identify teacher leaders, a handful of studies have searched for correlations between school leadership and internal factors such as motivation and external factors such as building culture. While

applicable to the overall study of teacher leadership, these studies further reflect the need for work to be done related specifically to professional demographics as a means for identifying and developing teacher leaders.

Of these studies, Rogers (2005) focused on which characteristics differentiated potential leaders from each other, specifically those individuals with potential aspirations to be leaders. Overall, Rogers (2005) derived that it was reasonable that the internal needs and motivations of some individuals were the driving forces that compelled them to become leaders. Rogers (2005) further stated that identified leaders put out more effort than their counterparts and tended to think beyond the day-to-day work and regularly take risks. These concepts Rogers cited were useful for those interested in identifying and cultivating potential leaders. These notions, while useful in the context of teacher leadership, miss the mark of a study developed with the purpose of identifying niches of teacher leaders in schools. While motivation and an internal drive to succeed most likely correlate to teacher leaders in most situations, the need for stronger research in this area remains.

As part of this study, the overall effects of content and a department of content-alike colleagues is relevant to the overall development of teacher leaders. As mentioned, while this study will not differentiate between leadership qualities of pre-service teachers compared to in-service teachers, the organizational effects of collegial relationships and professional learning communities has continually been shown to assist in the development of teachers as well as teacher leaders (Printy, 2008). Research has detailed the critical role of teachers' social learning in communities of practice for their professional work lives. The level of participation with these communities has implications for teachers' efficacy beliefs as well as their instructional choices (Printy, 2008). If content is a relative factor due to not only the specific skills required to

instruct, but also believed to be a contributing factor to learning communities that facilitate individual development, this study could further enhance the work of professional learning communities as well as assist in the identification and development of teacher leaders.

As noted, existing research on teacher leadership has examined the effectiveness of teacher leadership, the extent to which it is distributed across a school faculty, and its relationship to reform implementation (Scribner & Bradley-Levine, 2010). Further supporting the role of culture and learning communities, the findings of Scribner and Bradley-Levine (2010) indicate the importance of the cultural conditions that influence teachers' construction of teacher leadership. Teacher's construction of teacher leadership is connected to positional and personal power legitimized by both organizational and cultural rules. Scribner and Bradley-Levine (2010) stated that these rules were related to the value of content area expertise as well as organizational positions and leadership practice. Their study demonstrated the impact of how cultural construction of teacher leadership shapes leadership practices overall. The role of building and department culture on teacher leadership is again an example of the need for a study to determine correlationally how teacher leadership and content area relate. In addition, the secondary research question related to administrative bias based on content also lends itself to be influenced by and effect building culture both as a large organization, but also within individual learning communities as well.

A final attempt to rationalize the need for this current study and the missed opportunity that content area provides to identify teacher leaders comes from research that argues that school leadership looks different depending on the school subject. Spillane (2005) argued that relations between school leadership and school subjects are not well understood. Furthermore, a substantial body of research suggests that school subject and teachers' perceptions shape

teachers' work and their response to efforts at reforming their practice and professionally developing as teachers (Spillane, 2005). Simply put, school teachers respond differently to reform depending on their school subject. As an example, an earlier study conducted by Ball (1994) reported that English teachers supported efforts to create multi-ability classrooms in one school while foreign language teachers argued against it. Spillane (2005) offers the opinion that subject matter appears to be an important influence on teachers' practices as well as their efforts to refine their practice. This work demonstrates that instruction in particular subject areas may be an important factor for school leadership (Spillane, 2005).

Overall, a study focused on the identification of teacher leaders based on subject content area is needed, both to further understand the culture of professional learning communities and more effectively develop teacher leaders. To this point, the literature has determined that there is value in studying content area as it has been shown to distinguish teachers both in regards to reform movements as well as the overall development of culture and teacher efficacy. In addition, literature has clearly cited a need for teacher development and teacher leadership as a means to promote leadership and build a pipeline to building administration. This current study will add to the existing body of literature and further seek to identify characteristics of teacher leadership by content area as well as highlight any correlations between content area and principal selection for formal teacher leadership positions. Further review of literature highlights strategies used to develop teacher leaders as well as provides a more detailed look at the impact teacher leaders have on school organizations and student learning.

Development of Teacher Leaders

Recent initiatives to develop teacher leaders have attempted to achieve several related objectives (Devaney & Sykes, 1988). These initiatives have sought to enhance the overall

professional status of teachers, organize local expertise, as well as recognize and support local autonomy (Smylie & Denny, 1990). However, these attempts to develop teacher leaders have created dramatic changes from the more traditional roles of school leadership. Not only does the concept of teacher leadership alter and create different roles and responsibilities for teachers, but change also places teachers alongside school administrators at the center of school decision making (Smylie & Brownlee-Conyers, 1992). Literature gathered regarding teacher leadership development has remained constant in the assertion that teacher leaders, in order to be successful and fulfill the goals of the distributed leadership model, must be developed through professional development, pre-service and in-service programs, as well as working relationships with their building administrators.

The publication of *A Nation at Risk* created a culture that demanded for school improvement and a change to the traditional hierarchical design of school organizations. Of the strategies designed to facilitate these changes, teacher involvement in building and district level decision making was one of the most significant (Buckner & McDowelle, 2000). However, cited lack of preparation and organizational barriers have stood in the way and contributed to restrained success within teacher leadership models. Further research within teacher leader development has focused on the barriers associated with developing teacher leaders and the impacts on both the leadership of the building and the overall organizational culture. The need for a study that assists in identifying who teacher leaders are and which niches they are located within would be useful in the research and study of teacher leader development. By identifying populations of teacher leaders, building and district administrators could tailor professional development by content for those individuals who display more of a capacity for leadership or who are currently exhibiting those behaviors. As Muijs & Harris (2003) discuss, literature has

provided a continued call for more formal preparation and support of teacher leaders.

Katzenmeyer and Moller (2009), state that “We ask teachers to assume leadership roles without any preparation or coaching, because they appear to intuitively know how to work with their colleagues.” Developing the leadership capabilities of teachers to serve as mentors, instructional coaches, and facilitators should be a top priority (Lumpkin, Claxton, & Wilson, 2014).

Buckner and McDowelle (2000) discuss the fact that most teachers are not taught leadership skills within their preparation programs. To better meet teachers’ development needs, programs must teach pre-service teachers how to understand the current realities of both the students they teach as well as the world of the schools as organizations (Silva et al., 2000). Incorporating both mentors and professional development programs that allow for teacher immersion within active school organizations could facilitate young teacher’s understanding of distributed leadership within school organizations. This development provides teachers with the opportunity to better integrate within schools which act as places that insure students, parents, teachers, and principals all become school leaders in some way (Silva et al., 2000). This development of teachers would be benefitted by research focused on further identification of teacher leaders and understanding cultural contexts of how those leaders are developed.

Part of the lack of literature and development of pre-service programs in recent years is a result of the rapidly expanding roles of teacher leaders. New opportunities for teacher leadership have developed in a number of different ways (Hallinger & Richardson, 1988). Some of these opportunities have come from the development of school improvement and leadership teams that promote shared decision making between administrators and teachers. Further opportunities have been created to decentralize decision making within staff development, curriculum development, and personnel evaluation. Teacher leadership opportunities have also come from

specific programs and initiatives that include career transitions such as mentor teachers, lead teachers, and master teacher programs (Smylie & Denny, 1990). As discussed throughout the literature, there is an assumption that teachers and administrators understand their new roles, and even without clear understanding, can facilitate the change set forth by their role. However, as the authors continue to discuss, the most current pattern of leadership development has focused on the individual teacher leader. These positions have been created for teachers who have been appointed and “anointed.” (Smylie & Denny, 1990). Little attention has been paid to prepare the school overall as a distributed setting of organizational leadership (Bird & Little, 1986). To further enhance this work of creating a more distributed model of leadership, implementation of targeted professional development designed for teachers could further create opportunities for other teachers to develop and become involved both formally and informally as teacher leaders.

Barriers to Development

One barrier to teacher leader development is the stigma of being a teacher leader that is placed on them by their colleagues. Findings have indicated that teachers who take on leadership roles can be ostracized by their colleagues (Muijs & Harris, 2003). Cited within the research of Lieberman and Miller (2000), the egalitarian behavior of teachers was one of the main barriers perceived by teachers, often leaving them to feel isolated from colleagues. Muijs and Harris (2003) discussed this observation, citing that while teachers were happy to acknowledge the skills of teacher leaders, they did not support assertive behavior from the teacher leader to their colleagues. These issues suggest that the development of teacher leaders is complex. Not only does this model of leadership go against decades of formal institutional roles and systems of authority, it involves more than just the restructuring and design of new roles. To properly create a system that facilitates the develop of teacher leaders and their organizational climate,

development must also involve a range of responses and organizational factors that are likely to mediate how roles are defined and performed by teacher leaders and how effective these roles will be in achieving desired objectives (Smylie & Denny, 1990). The research findings and interpretations of Smylie and Denny (1990) suggest the definition and performance of teacher leadership roles may be influenced substantially by the organizational context in which they are established.

Literature also suggests that the top down structure of school management is a major impediment to the development of teacher leadership (Muijs & Harris, 2003). This hierarchical structure regularly creates a juxtaposition between the formal structures of school management and the distributed leadership goals of teacher autonomy and shared decision making. Despite attempts to formalize new roles for teacher leaders, these roles cannot successfully be imposed by management alone (Muijs & Harris, 2003). Wasley (1991) reiterated the fact that teachers need to be involved in the process of deciding what roles they [teacher leaders] take on and must feel supported by school administration. The role of school administrators is crucial to the overall success of teacher leaders. In order for teacher leadership models to be successful, the traditional models of bureaucratic systems must be replaced with one in which decision making is shared (Pellicer & Anderson, 1995). Due to the fact that most attention on teacher leadership has focused on formal relationship roles (Smylie, 1995), principals must now play a key role in developing informal leadership roles. Principals have had the training and experience needed to develop their leadership skills. That training and experience should enable principals to identify, develop, and support teacher leaders in their schools (Buckner & McDowelle, 2000). Principals should assist in defining teacher leadership, be comfortable with those leaders, encourage them, help teachers develop their leadership skills, and provide effective feedback (Buckner &

McDowelle, 2000). To further support building administrators in designing effective professional development, research focused on the identification of professional demographics of teachers and a clear focus on leadership development is needed.

Continued Role of Building Administration on Teacher Leader Development

Muijs and Harris (2003) support the need for building administrators to encourage teachers' continuous learning by providing time and resources for continuing professional development. Literature suggests a number of ways in which teacher leadership can be developed as well as enhanced in schools. A strategic emphasis on setting aside time for teachers to meet was found to be a crucial element for success in schools where teacher leadership was being implemented (Ovando, 1994). Teachers who have the opportunities to meet regarding curriculum, developing school-wide plans, and other collaborative efforts provides rich environments for teacher leaders to facilitate and develop their leadership skills. Additionally, literature suggests that professional development must count not just on the development of teachers' skills and knowledge, but also on aspects specific to their leadership role (Muijs & Harris, 2003). Professional development created by administrators must provide opportunities for teachers to practice in engaging and authentic situations. As Muijs and Harris (2003) continue to explain, skills such as leading groups and workshops need to be incorporated into professional development to help teachers adapt to their new roles. Professional development provided to teacher leaders, when designed and implemented effectively, contributes to an overall increase in teachers' self-confidence to act as leaders. This confidence leads to opportunities for teachers to learn from one another. Little (1995) cites that mentoring, observation, peer coaching and reflection are all possibilities for developing teacher leadership.

Principals can and should be involved in teacher leadership development in other capacities than just through professional development design and implementation. Although relationships between teacher leaders and other teachers are clearly important, it is the relationships between teacher leaders and their principals that may be most crucial (Smylie & Brownlee-Conyers, 1992). The work of researchers such as Fullan, Leithwood, Montgomery and others all demonstrated the pivotal role that principals play in the adoption of innovation at the building level. Little (1988) suggests that because most new teacher leaders depend more heavily on the interaction between administrators and teachers, the principals' impact to potentially block, support, facilitate, or shape the nature and function of teacher leadership in their schools is especially crucial.

Principals who seek to establish a collaborative professional culture must find opportunities to develop teacher leaders with the capacity needed to implement change. The current focus on distributed leadership and collective approaches to school improvement has prompted research interest in teachers and leaders (Muijs & Harris, 2003). Due to these factors, it is imperative for the future success of organizational leadership challenges that teacher leaders are trained, supported, and challenged to fulfill the needed roles in their educational environments. This research has attempted to unfold the practices and purposes of what makes teacher leadership programs developmental and impactful. Research has demonstrated that teacher leadership should not only be readily defined by school districts, but implemented with success and consistency. Smylie and Brownlee-Conyers (1992) discuss within their research what matters most to teachers are topics regarding curriculum, instruction, and student learning. Approaches to provide teachers with professional development often leave teachers looking for more time and support, and again questioning how the concept of teacher leadership leads to

school-wide improvement. While the research demonstrates similar findings in regards to both formal and informal leadership roles for teachers, it may also demonstrate the need for more preparation in collaborative leadership, requiring more understanding of potential teacher leadership roles, especially by building administrators.

As discussed, the nature and structure of teacher leaders' roles and working relationships with building administrators is significantly different than in previous organizational systems. This suggests that school districts not only need to recognize the importance of these working relationships, but to also proactively assist teachers and principals to cultivate the knowledge and skills required to be successful in distributive leadership models (Smylie & Brownlee-Conyers, 1992). Administrators' role in the current state of teacher leadership in their building as well as the future of teacher leadership cannot be understated. More research must be conducted to understand the factors that support and deter teacher leadership in schools (Zinn, 1997). While literature demonstrates clear effort and research within the area of teacher leadership development, literature continues to omit the benefit of identification of teacher leaders based on professional demographics. This research would supplement the existing work on teacher leadership development, in both professional development design and implementation. Further research suggesting tailored professional development by content could not only provide increased teacher leadership capacity but targeted support and facilitation from building level administration. Finally, research that illustrates teacher leadership behaviors by content area can assist current literature in regards to teacher-administrator relationships. Administrators who understand potential content bias related to teacher leadership tapping and assigning of formal roles could allow for the overall success of collaborative relationships in schools and the further implementation of successful teacher leadership programs in the future.

Teacher Leaders and Student Achievement

Research has also focused on the potential impact teacher leadership can have on organizational success and student achievement. Multiple reviews of literature and studies show that teacher leaders can serve as powerful leaders when they work collegially with other teachers to exam and evaluate instructional practices and their effects on student learning and progress (York-Barr & Duke, 2004). Overall, the literature is clear that teacher leadership and distributed leadership practices have a significant impact on collaborative culture in the development of democratic school systems.

Teacher leadership illustrates the benefits of when employees participate to greater extent within their own organizations. Within a school organization, teachers who regularly participate and have voice within school decisions are more engaged and contribute expert knowledge to school situations. As Barth (2001) discusses, given the complex nature of schools, the most reliable, useful, proximate, and professional help resides with the teacher staff itself. Teachers hold vital knowledge regarding daily operations and interactions. They are employees whose perspectives can positively inform decisions (York-Barr & Duke, 2004). Weiss, Cambone, and Wyeth (1992) cite that when teachers share in the decision-making process, they [teachers] become committed to the decision and feel a sense of ownership. Teachers who participate in making decisions have been shown to have a greater sense of empowerment and follow-through in regards to shifts and reforms. Fullan (2005) recognized within his research that school leaders must understand the need for grass roots leadership in the areas of school reform. The involvement of teachers in decision making has continued to grow over the past two decades in both wide spread school reform as well as in district and building decision making processes. As a whole, policy makers are recognizing the importance of having teachers involved in the reform

of schools (Darling-Hammond, 1998). Barth (2001) summarizes these effects by stating, “The teacher who leads gets to sit at the table rather than remain the subordinate.”

Subsequent research in the area of transformational leadership and teacher leadership effects has concluded that both have a positive influence on teachers’ effort and satisfaction (Pounder, 2006). Literature has also been clear that the impacts of teacher leadership in the development of democratic and collaborative school culture is one of the largest benefits to this method of school leadership. The literature states that the principle reason for teacher leadership is to transform schools into professional learning communities (Katzenmeyer & Moller, 2009). Teachers who are empowered to become closely involved in decision making, effectively contribute to the democratization of schools (Gehrke, 1991).

The work of Barth (2001) states that despite the need, few schools operate democratically. However, teacher leadership developed within a building culture can have a significant impact on both teachers and students. When teachers take on important school related responsibilities, they [teachers] take a step in transforming their school towards a democracy. Barth (2001) further adds that the more a school looks and feels like a democracy, the more students come to believe and practice in similar forms. Within a democratic context, literature cites that the work of school leaders, both formally and informally, has the opportunity to model for their students’ collaboration, teamwork, and joint responsibility. Teacher leaders who collectively share with their colleagues their knowledge, expertise, and experience can help broaden and sustain school and classroom improvement efforts (Lumpkin et al., 2014). The authors further state that developing the leadership capabilities of teacher leaders should be a top priority for school administrators.

Leithwood and Duke (1999) argued that leadership does not change based solely on placing the word teacher in front of it, but the meaning of leadership and the distribution of roles does. Teacher leadership as a distributed form of leadership requires substantial shifts in the way organizations understand and conquer change. For teachers within this model, there is an opportunity to lead change and to guide school development and improvement (Harris, 2003). School improvement is reliant on teachers who model effective instructional practices, encourage the sharing of best practices, mentor new teachers and collaborate with colleagues (York-Barr & Duke, 2004). These examples as Barth (2001) would suggest, break down teacher isolation and create a more professional work environment. These practices urge school administrators to alter the practices of top down, bureaucratic models and to adopt more encompassing and collaborative modes of leadership (Beauchum & Dentith, 2004). As York-Barr and Duke (2004) substantiate within their research, one of the clearest effects of teacher leadership is growth and learning among the teacher leaders themselves.

Mentioned as a principle reason to advocate and grow teacher leadership in schools is the realized benefit for students when they are part of a democratically modeled school system (York-Barr & Duke, 2004). At the forefront of effects of teacher leadership, Barth (2001) suggested that in order to create communities of learners, teachers must model learning and collaboration. Barth (2001) pointed out that those teachers who participate in teacher leadership and take ownership and responsibility over something “stand at the gate” of profound learning. For students, modeled practices such as these create an environment in which teachers learn. Only when teachers learn will their students learn (Barth, 2001).

York-Barr and Duke (2004) indicate a void in literature that demonstrates the effects within classroom practice and student learning. However, findings about the relationships

between teacher characteristics and student achievement gains are ongoing, despite little data using teacher leadership characteristics (Wayne & Youngs, 2003). Overall, literature demonstrates indirectly that teacher leadership has positive effects on student achievement and learning. Researchers have pointed to enhanced learning resulting from transformational leadership in addition to support for the beneficial effects on innovation and creativity (Pounder, 2006). Leithwood, Jantzi, and Steinbach (1999) suggested that teacher leadership had a significant effect on student engagement. The study stated that engaging a larger proportion of leadership activities towards teachers would have a positive influence of overall teacher effectiveness. Further adding to this work, Ryan (1999) indicated that teacher leaders were perceived to have a positive effect on students because they influenced instructional practices of colleagues and participated in school level decision making. These factors; effort, engagements and effective instructional practices have all been linked to increased gains in student learning.

Continued research within the context of teacher leadership and student achievement is needed to further validate the use and need for teacher leadership practices within school organizations. As cited throughout, teacher leadership has a strong impact on overall building culture and organizational goals. The more educators who are a part of the decision making process, the higher the morale, and the greater their participation and commitment in carrying out the goals of the school (Barth, 2001). In summary, the research of Beachum and Dentith (2004) suggests that the related actions of teachers and school administrators utilizing teacher leadership methods can create dramatic changes in the culture of schools. When teachers and administrators take on new roles, emergent theories of leadership can be explored. Teacher leadership can guide innovation and ingenuity and create new ways to solve complex problems facing our current schools today and into the future. The need for further research within these

areas of teacher leader development and impact will only be enhanced by data that seeks to identify teacher leaders and understand the role of subject area, school culture and other organizational factors. The current lack of research in identification of teacher leaders has narrowed the scope and scale of the impact teacher leadership can have in all contexts. To further understand the impacts systemically as well as within school buildings, research tightly focused on who teacher leaders are and how they are identified and developed is needed. This impact could also further identify the principal's role and tendencies toward teacher leader selection.

As teacher leadership and student achievement relate to this study, a more developed approach and understanding of who teacher leaders are, how they are similar, different, and how they are identified is imperative to the overall impact that teacher leaders can have. Given that research supports teacher leaders positive effect on student achievement, insights from this study within how teacher leaders differ from one another and how they are identified based on content area would hope to support administrators when developing teacher leadership programs and developing leaders. Having a better understanding of teacher leadership could allow schools to close gaps in learning deficits as well as achieve their goals as they relate to student achievement.

Summary

A teacher leader is thought to be a great teacher inside the classroom, one who is open to current educational theory and practice, and one who holds students to high expectations while consistently offering them care and support (Suranna & Moss, 2000). Outside of the classroom, teacher leadership has been defined into both formal and informal roles. These roles have been identified throughout the work of numerous researchers who have looked to provide clarity to a

field that has continued to debate the definition of teacher leadership altogether. This review of literature has attempted to provide clarity into the themes of research and to provide context and meaning for the desired nature of this particular study. To fully develop teacher leaders and create environments for them to be successful, research has to look at how to identify who these teachers are. As a model of distributive leadership, teacher leadership intertwines with professional learning communities, teacher mentorship, building culture, and professional development. The impact teacher leaders have in regards to school reform movements, modeling of instructional practices, and support of building administration requires the continued need for research to be conducted. This study seeks to support existing research while providing a closer look into the identification of teacher leaders and their subject area content.

As a secondary purpose, this study seeks to provide information related to administrative bias in the selection of teachers for formal teacher leader positions. As related literature has proven, organizational bias in regards to race, gender, and job specialization has been determined to contribute to hiring, career advancement, and overall job satisfaction. This literature has implications on the nature of this study as content area teachers have different pedagogical and instructional skills as well as leadership skills that may be either statistically determined to be more suited for leadership positions or believed to be by building administrators.

The lack of literature regarding teacher leadership related to content area has led to a pedagogical fork in the road. Is the personal nature of the teacher to be a leader present regardless of content area, or do certain content areas draw more teachers with leadership characteristics? How does the combination of personal characteristics, content area, and administrative development create teacher leaders? Do building administrators favor specific content area teachers for leadership roles more than others? If so, why? Finally, what cultural

dynamics within content specific professional learning communities facilitate differences in teacher leader behaviors? These questions while not answered within the design of this study are key to further developing a larger scope of understanding of who teacher leaders are and how to develop them within school organizations. The data generated within this study will provide insight into the role of content on teacher leadership in hopes of partially filling the hole that literature has continually failed to address related to the importance of content area to teacher leadership. In addition, this study will seek to provide insight within the work of building administrators and their relationships with addressing and identifying leadership within schools. If true and lasting change is to take place in public schools, the chasm that exists between theory and practice must be bridged. Teacher leadership can be an important starting point to fulfill this goal (Suranna & Moss, 2000)

Chapter 3

Methodology

Introduction

The primary purpose of this study was to explore the relationship between teacher leadership and teaching content area. Specifically, this study asked the question, to what extent do teachers in secondary schools exhibit teacher leadership characteristics and behaviors differently based on their subject area? A secondary purpose of this study was to examine the principal's selection of teachers to formal teacher leadership roles to determine patterns related to teaching content area. This chapter discusses the details of the methods used to establish the data instruments as well as collect data as agreed upon by the University of Kansas, the IRB, and the school district the study was conducted in.

As noted throughout the literature review, emphasis on the concept of teacher leadership has grown significantly over the last two decades. Furthermore, research has indicated that teacher leaders and distributive models of leadership positively impact school culture and student learning. This study sought to further support the work within teacher leadership by addressing the need for the identification of teacher leaders in school organizations. By examining how teachers within different content areas exhibit teacher leader characteristics, data provided clarity as to whether or not content area is an effective way to measure, identify, and predict teacher leaders. In addition, data from this study provided insight to determine if there was bias among building administrators related to their assignment of teachers to formal leadership positions as well as their identification of teacher leadership capacity within their staff members.

This chapter provides details significant to the study such as the setting, data collection instruments, sampling methods, and data analysis. The quantitative design of this study allowed

for descriptive data analysis to seek relationships between teaching content area and teacher leader characteristics. This design also provided an opportunity to evaluate teacher self-reported data compared to reported data from building principals identifying teacher leaders' behavior and capacity.

Setting

This study took place in a suburban school district situated in the Midwest. The school district's enrollment numbers have steadily increased over the last several decades, facilitating the need for new schools and school improvements at all levels. Currently, the school district operates five high schools, nine middle schools, and 21 elementary schools. Student enrollment is around 23,000 students with a certified staff of around 1,900 teachers. This school district is consistently recognized for its innovative and adaptive approach to student learning and high levels of student achievement. A continued desire to improve teachers and administrators through professional learning and collaboration has proved to be a successful model for continued improvement and excellence within the district.

One of the primary reasons for the use of this school district for this study is in regards to their continued work in the area of teacher leadership. For several years, the district has utilized the Professional Learning Community (PLC) model. This model is one of the prime examples of collaborative and distributive leadership models within school organizations. The district's work in the implementation and sustainability of the PLC model has contributed to committed teacher teams broken down by grade level at the elementary level and by content area at the secondary level. The district has continually demonstrated an understanding of the leadership capacity and impact teacher leaders can have in schools. Every year, teachers are invited to apply for a year-long series of trainings and collaborative activities related to teacher leadership. When asked

about the purpose of the teacher leadership academy, the district representative in charge of the program stated,

Our buildings are successful because we have strong leaders that we spend time developing. This program is designed to provide teachers with greater context of the work of the school district as well as resources to provide leadership within their buildings. If you don't have strong teacher leaders, it makes an administrator's job so much more challenging. You need to have people in the front lines that are working on whatever the building's collective goals are and what their school improvement plans are. My hope then, is that when they get into more leadership roles in their buildings they are getting support from their administrators, and even their colleagues. The networking available in academy also introduces them to more colleagues that they can now talk with. They can be grouped up with others that have similar challenges or goals and as a result, participants could find their niche.

As described, the district used within this study has a vested interest in the development and success of teacher leaders within their schools. Research data that seeks to further identify teacher leaders throughout the district is of interest to district administration as it facilitates future development for building administrators as well as provides context for the reasons behind selection of teacher leader candidates for the district academy. To continue being regarded as a premier school district in the region as well as the country, further development in teacher leadership is necessary and even a part of the district's strategic plan. To further support the district's initiatives and goals regarding student success and teacher professional development, a study such as this that identifies and further facilitates the development of teacher leaders is

needed. Analysis of research data provided information that could be utilized to better support and develop teacher leaders. This study provided data that can contribute to the overall work of the district as well as assist administrators regarding strategic initiatives.

Data Collection

As mentioned, the school district used for this study consists of nine middle schools and five area high schools. The roughly 1,000 certified secondary teachers, both middle and high school settings, that work in these buildings will make up the participant group for the main focus of the study. These teachers received, through their school district email account, a link to the Teacher Leadership Inventory survey. Also included in the email was a brief description of the general purpose of the study. The link provided allowed teachers to access a Google form pre-loaded with a series of 18 questions. Of these questions, 17 make up the Teacher Leadership Inventory and ask how often they as teachers demonstrate teacher leadership behaviors and characteristics. Teachers' answered using a Likert scale with answer choices for each question listed as: never, seldom, sometimes, and routinely. The final question of the survey which was added as part of this specific study included a drop-down menu of content areas for teachers to select their primary teaching content; Career and Tech, ELA, Math, Performing Arts, Science, Social Studies, Special Education, Visual Arts, World Language, Physical Education. For teachers who may teach more than one content area, directions were given to choose the content area that is taught the most throughout the school day.

The Teacher Leadership Inventory data collected via the Google form served as a means to evaluate the relationship between teacher leadership characteristics and subject content area. In order to evaluate the secondary research question of this study, if administrators demonstrate bias based on formal assignment and identification of teacher leadership positions, individual

building principals were asked to provide data related to their teaching staff and teacher leadership behaviors. To do this, data collection included asking building principals to rank 15 members of their teacher staff in regards to how strong a teacher leader they are and how often they as teachers demonstrate teacher leadership within the building. To clarify and assist in potential variation of interpretation, principals were provided a definition of teacher leadership with examples before ranking their staff. The reason for providing these examples and definition was to provide principals with a framework similar to that as defined in the TLI in order to clarify the specific types of teacher leader behaviors defined within this study.

Principals provided a number from 1-15 for teachers to indicate their ranking of teacher leaders. The strongest teacher leader was given a 1, the second strongest a 2, and so on. This continued until the building principal has ranked their top 15 teacher leaders. Each building principal was provided a google form with drop down menus for each teacher. Within this drop-down menu was the same list of teaching content areas provided to teachers within their survey. The principal selected which content area corresponds to that particular teacher and select it. They will continue this for the remaining teachers. Therefore, the only identifying data provided by building principals was by teaching content area along with the ranking of 1-15.

Combined, these collection methods provided data to the study's two research questions. These methods created an opportunity to collect a large set of data while focusing the work on a specific group of teacher leaders. In the coming section, a detailed description of each data collection instrument will be provided as well as the overall framework regarding the Teacher Leadership Inventory.

Data Instrumentation

To address the primary research question of this study, data was collected using the Teacher Leadership Inventory (TLI). This inventory was first developed by Angelle and DeHart through a multistage process (P. S. Angelle & DeHart, 2011). In order to build this instrument to measure teacher leadership characteristics, administrators and teachers were interviewed in an effort to obtain an accurate picture of teacher leadership within the social context of schools (P. Angelle & Beaumont, 2006). These interviews utilized open-ended questions to gather feedback from a sample of 14 administrators and 51 teachers. A constant comparative analysis of the participants' answers was conducted, and five teacher leadership themes emerged: educational role model, decision maker, visionary, designee, and supra-practitioner (P. S. Angelle & DeHart, 2011).

The next stage of the TLI development process involved the creation of a 25-item survey intended to measure and provide data related to the extent of teacher leadership within schools. The survey went through a peer-review process that culminated in a revised version. From there, the revised version was administered to a group of doctoral students, including district administrators, school level administrators, and classroom teachers (P. S. Angelle & DeHart, 2011) The work of the focus group culminated in a final version of the survey.

The final stage of the TLI development involved administering the survey twice with two-factor analyses being conducted on the results. The first of two administrations used the 25-item survey and was analyzed by exploratory factor analysis resulting in the deletion of eight questions. This analysis led to the replacement of the five-factor model with a four-factor model (P. S. Angelle & DeHart, 2011). The second administration of the 17-item survey went through

a confirmatory factor analysis in which the four-factor model was statistically supported (P. S. Angelle & DeHart, 2011)

This multistage process culminated in a final version of the TLI that consists of 17 statements, each answered along a 4-point Likert scale with participant response options including: never, seldom, sometimes, and routinely. This instrument has been designed and statistically supported to measure the extent of teacher leadership in schools. Angelle and DeHart (2010) reported Cronbach alpha reliabilities of .85 for the entire TLI instrument. To fully understand the findings that will be implicated from this study, a further definition of each of the four factors is needed.

Factor 1 within the TLI was designated as *Sharing Expertise*. Of the 17-item questionnaire, five items focus on the sharing of pedagogical or classroom management knowledge. These questions measure teachers' willingness to share their skills and knowledge within these topics as well as also measure their perceptions of teacher leader skills. P. S. Angelle and DeHart (2011) cite the work of Andrews and Lewis (2002) who associate these practices to parallel leadership. This form of leadership is described by the principal taking on the roles related to strategic leadership with a teacher focus on pedagogical leadership. Andrews and Lewis (2002) also defined collaboration and shared practices as forms of teacher leadership.

Identified as factor 2, *Sharing Leadership* contained questions that address the willingness of school administrators to share leadership as well as address teachers' willingness to accept the challenges to lead. Within this factor, the TLI separates items into two categories, one pertaining to administration and the other pertaining to teachers. The first subset of items is named "Leadership Opportunities". The second subset relating to teachers is called "Leadership Engagement". (P. S. Angelle & DeHart, 2011) Together, these subgroups demonstrate the

relationship between building administrators and teacher leaders. Thus, the factor of *Sharing Leadership* demonstrates the give-and-take model of distributed leadership and that of teacher leadership in schools.

Factor 3, the *Supra-Practitioner* focused on measuring teacher behaviors that are beyond the prescribed roles of teacher leadership as well as measure the willingness of staff to engage in them. Teachers identified as Supra-Practitioners are those who go above and beyond their regular work obligations and take on extra duties that other teachers are not willing to take on. Often, these teachers are the first to arrive and last to leave. P. S. Angelle and DeHart (2011) described these teacher leaders as those who lead in the classroom as well as throughout the school.

Factor 4 addressed the role of school administrators within teacher leadership. The *Principal Selection* factor seeks to measure the role of the principal in creating groups of teachers who are continually asked to fulfill teacher leadership positions and those who are not, thus creating in-groups and out-groups. Factor 4 highlights the fact that a significant barrier to the overall success of teacher leadership is the climate and culture that is established by school administrators. A climate focused on collaboration and trust must be built within distributed forms of leadership for the school to be successful overall (Ryan, 1999).

Within the research model, the Teacher Leadership Inventory was statistically supported to measure teacher leader behavior within a school setting. Participants within this study took part in the 17-question survey model that allows for measurement of each of the four factors described within teacher leadership. Teachers were also asked to identify their main content area as a means to correlate each factor related to teacher content area. This collection method and instrument allowed for data analysis to be conducted related to the principle research question of this study; how teaching content area relates to teacher leader characteristics. In regards to the

secondary research question, a different instrument was used to allow for school administrator feedback to be gathered in regards to their perceptions of teacher leader behavior in their schools. This feedback in combination with self-reported teacher data from the TLI allowed for a more valid interpretation of data as information will be gathered from teachers as well as their school principal.

This second instrument tool, named the *Principal's Staff Report* asked school administrators to “rank” their teachers from 1-15. #1 represents the strongest teacher leader in the building and #15 represents the 15th strongest teacher leader in the building. Administrators identified their top 15 teacher leaders in their building in regards to their current teacher leader behavior and teacher leadership capability in the future. Administrators ranked each employee by content area. This instrument was designed by the author to measure principal selection of teacher leaders and potential bias related to teacher content area. Data gathered from the *Principal's Staff Report* allowed for comparative analysis of administrative perception of teacher leadership behaviors based on teaching content compared to the self-reported behaviors of teachers. This comparative research data sought to address the question of administrative bias in the placement of more teachers of certain content areas in formal teacher leader roles than those of other content areas. Here, a linear regression was used to determine the effects administrative selection has on teacher self-reported data. As further discussed in Chapter 4, this data sought to determine if there was a relationship between how teachers self-reported their behaviors and how building administrators identified teacher leaders amongst their staff.

It is important to note that both teachers and building administrators received the same description and definition of teacher leadership. This consideration was taken to help ensure that while each data instrument was unique, that there would be continuity in thought of both groups

in regards to teacher leadership as a philosophy. However, as discussed, the TLI sent to teachers was a series of statements that broke down varying examples of teacher leadership. These specific questions were different than what principals received, and teachers were asked to respond differently than compared to building administrators. Within the *Principal Staff Report*, administrators were only responding to one nebulous question as to who in their building best exemplifies the definition and characteristics of teacher leadership. Because it was the same definition shared to both parties, it is unlikely that principals were thinking about different constructs of teacher leadership, but their responses may be more colored by teaching content area more than otherwise. It would be encouraged for future research to find a way to synchronize those measures.

Data Analysis

Scores for each factor were computed by calculating the mean for all responses composing each individual factor as well as an overall mean, based on teaching content area. For example, the overall factor score for Sharing Expertise was determined by calculating the mean of the responses to questions 1, 2, 3, 4, and 7. The means of each content area were then compared in order to determine any statistical differences between content areas. In order to test for differences among content area and the four factors of the Teacher Leadership Inventory, a series of statistical tests were used including one-way ANOVA, two-way-ANOVA, as well as multiple linear regressions seeking to determine statistically significant differences between teacher's self-reported data.

In addition to the data from the TLI analysis, other data was utilized to highlight administrative selection of teacher leaders. The ranking of each teacher by their building administrator was compared to the self-reported data of teachers. As detailed within IRB

approval, teachers' results were sorted by content area and individual building. Teachers provided no personal information and their answers were collected anonymously. To do this, the rankings of each teacher by principals were grouped into thirds. Teachers identified as #1-5 will be identified within a top third, those identified #6-10 within a second third, and teachers identified #11-15 in the bottom third. As each teacher was identified by content only, each content area earned $1/5^{\text{th}}$ or ".2" of a point for each identification by their principal. For example, if two Social Studies teachers were identified within the top third by the building administrator, that department would occupy $2/5^{\text{ths}}$ of the top third overall score, or ".4" points. In addition to this score allocation, each tier received a weight to demonstrate the impact of being ranked within the top third of teacher leaders in a building versus the bottom third. This approach allowed for importance to be placed on both the strength of the administrative rating as well as the overall number of content alike teachers that were identified overall. Teacher scores within the top third were multiplied by three, scores in the second third were multiplied by two, and those in the bottom third were left as is. Scores by each department were then added together throughout all thirds to create an overall building score. These scores were then used to analyze how building administrators rank each content area and how the scores compare to those of the teachers within the TLI survey. Similarities, discrepancies, and anomalies between self-reported data and administrative rankings will be discussed. Discrepancies and anomalies that indicate patterns related to teaching content area are of specific interest within the design and argument of the study. Analysis of this data could lead to conclusions related to administrative bias and serve to ask other questions in regards to administrative understanding of teacher leadership as well as teacher understanding of similar concepts. Statistical data supported through descriptive statistics and linear regressions sought to demonstrate if there are significant

differences as it relates to administrative identification of teacher leaders based on content area alone.

Summary

Methods utilized within the study have been researched and designed to support two unique research questions. Of these, the Teacher Leadership Inventory was utilized to determine differences among teacher content area and the four factors of teacher leadership. The data collection method provides opportunity for self-reported data by teachers to be collected while maintaining participant confidentiality. Further, analysis of participant responses provided insight as to how content area relates to specific characteristics and behaviors related to teacher leaders.

In combination with the Teacher Leadership Inventory, the *Principal's Staff Report* allowed school administrators the opportunity to provide data related to their perception of teacher leadership based on the individual teachers. Using content area as a grouping measure, principal responses were recorded and scores were averaged based on content area. The combination of data from teacher self-reported answers to the TLI in addition to administrator response allowed for an analysis of content area teachers and the roles they are asked to fulfill as teacher leaders. Comparison of teacher and administrative data allowed an opportunity to discuss potential bias among building administrators in their beliefs and assignments of teacher leadership roles and if they are related to content area.

The setting for the study allowed for authentic data to be collected given the school district's work over the last decade related to professional learning communities and staff development. Teachers and administrators within this setting were able to provide personal and professional background knowledge related to teacher leadership characteristics, thus providing

authentic feedback within the context of this study. The design of the study combined with the data collection instruments and proposed analysis sought to answer both research questions, resulting in follow up questions and potential action research pursuing an understanding of the development of teacher leaders and their identification within school buildings.

DiRanna and Loucks-Horsley (2001) addressed the fact that teacher leaders require stamina to lead due to the work that is required to be a teacher leader. Given that teacher leaders are either asked or tend to inadvertently volunteer to lead both in the classroom and throughout the school, they are often the teachers most prone to burnout. To sustain a positive and effective building culture, research that provides schools with data to support and further identify characteristics of teacher leaders is vital to the overall success of the school system and to support teacher leaders and increase retention.

Chapter 4

Data Analysis

In its original design, the goal of this study was to answer two key research questions. The primary question focused on the presence of teacher leadership characteristics in secondary teachers and if teaching content area had a variable relationship on those characteristics. The secondary research question focused on building administrators and their identification of teacher leaders in their buildings. The goal was to determine if administrators demonstrated any selection bias in their identification based on teaching content area. The research methodology, data collection, and data analysis have all been designed and implemented in order to answer these research questions. Throughout this chapter, the data collected surrounding these questions will be discussed, reviewed, and illustrated.

Research Question #1

In order to discover how teacher leaders exhibit teacher leadership characteristics and behaviors, teachers were voluntarily asked to complete the Teacher Leadership Inventory (TLI). This inventory, comprised of 17 questions measured on a Likert scale, provided an overall score as well as a distinct score for each of the four individual factors within the survey. In all, 321 teachers throughout the district's 14 secondary schools (5 high schools, 9 middle schools) completed the TLI, with participants representing all ten teaching content areas defined within the study. Table 1.1 below shows the breakdown of each content area score as well as provides details of the data set collected from teachers. The TLI average score was calculated by taking the average Likert rating of all 17 teacher responses. The scoring allows for scores ranging from a minimum of 1.0 to a maximum of 4.0.

Table 1.1
Descriptive Data Table

Subject Area	N	TLI Average	Sharing Expertise	Sharing Leadership	Supra-Practitioner	Principal Selection
Visual Arts	10	3.26	3.72	3.42	2.97	2.47
CTE	28	3.03	3.44	2.99	2.95	2.49
ELA	59	3.00	3.49	2.90	2.91	2.46
Social Studies	27	2.97	3.50	2.98	2.77	2.25
Science	39	2.92	3.50	2.79	2.79	2.36
World Language	23	2.91	3.41	2.80	2.88	2.33
Math	46	2.90	3.31	2.87	2.81	2.38
SPED	53	2.83	3.41	2.68	2.51	2.48
Performing Arts	27	2.81	3.16	2.72	2.90	2.32
PE	9	2.68	3.29	2.65	2.37	2.04
Overall	321	2.93	3.43	2.86	2.81	2.33

As demonstrated in Table 1.1, there were relatively small differences to how different content area teachers self-reported within the TLI. Further breakdowns of the individual factors that comprise the TLI are shown within Table 1.1. For each factor, slight differences are shown once again between content areas, with patterns of similar content areas rating themselves consistently higher or lower than their colleagues. Again, data reveals relatively similar scores

among each factor and each content. These subtle differences necessitate the need to run a more detailed statistical analysis to determine any significant differences related to teachers' self-reported data.

As the table illustrates, there are patterns to how each content area rates themselves overall as well as within each factor. For example, Visual Arts teachers consistently rated themselves above the overall average for each factor while PE teachers were consistently below the overall average. As mentioned, this data demonstrated a need for deeper analysis to determine any statistically significant differences between content areas related to teacher leadership behavior.

A one-way between groups Analysis of Variance (ANOVA) was utilized to determine if any statistical differences were present within the content areas, specifically within differences of each content's mean score. One of the strengths of the ANOVA technique is that researchers can compare groups while investigating differences. By comparing F ratio values for each independent variable, the ANOVA illustrates differences existing for each content area within this study, differing teaching content areas. If the calculated F value is greater than the expected F value, a statistically significant difference exists among the means of some of the groups in this study. Within this study, the content area was the independent variable while what was measured, the overall TLI score of the teachers was the dependent variable.

Depicted within Table 1.2, a Post-hoc Bonferroni paired comparison is shown. Here, the F statistic does show a statistically significant variance between content areas. However, when looking at the two-way scores shown in Table 1.3, there are no relationships that are shown to be statistically significant. The paired comparison analyzed each content area against other content areas independently. This technique differed from the use of the ANOVA which

analyzed all content areas together. This comparison method sought to determine individual differences within each specific content area. Given this incongruence between the two tests, further explanation is needed. Given that there is a minimal difference shown within the two-way tests, it is believed that the statistical difference shown within the one-way test is demonstrating a combination of small differences throughout the content areas and portraying them together as a whole significant difference, making it appear significant within the test. However, using the Bonferroni data, this determination needs further review. Given this, additional analysis through a regression model was needed to further illustrate differences related to teacher leader scores based on content areas featured in Table 1.4. This model allowed for testing competing effects as well as controlling for each content area.

Table 1.2:
Analysis of Variance of TLI Average Score by Content

Source	SS	df	MS	F	Prob>F
Between Groups	3.158	9.000	0.351	2.060	0.033
Within Groups	52.966	311.000	0.170		
Total	56.124	320.000	0.175		

Bartlett's test for equal variances: $\chi^2(9) = 15.7985$ Prob > $\chi^2 = 0.071$

Table 1.3
Comparison of TLI Score by Content Area (Bonferroni)

Row Mean						
Col Mean	CTE	ELA	Math	Performing Arts	PE	Science
ELA	-0.031 1.000					
Math	-0.126 1.000	-0.095 1.000				
Performing Arts	-0.216 1.000	-0.185 1.000	-0.090 1.000			
PE	-0.348 1.000	-0.317 1.000	-0.222 1.000	-0.132 1.000		
Science	-0.103 1.000	-0.073 1.000	0.022 1.000	0.112 1.000	0.244 1.000	
Social Studies	-0.062 1.000	-0.032 1.000	0.063 1.000	0.153 1.000	0.286 1.000	0.041 1.000
SPED	-0.197 1.000	-0.167 1.000	-0.072 1.000	0.018 1.000	0.151 1.000	-0.094 1.000
World Language	-0.116 1.000	-0.086 1.000	0.009 1.000	0.099 1.000	0.232 1.000	-0.013 1.000

Visual A	0.232	0.263	0.358	0.448	0.580	0.336
	1.000	1.000	0.606	0.163	0.108	1.000
Row Mean						
Col Mean	Social Studies	SPED	World Language			
SPED	-0.135	1.000				
World Language	-0.054	0.081	1.000			
Visual Arts	0.295	0.430	0.349	1.000		
	1.000	0.124	1.000			

Table 1.4 depicts data gathered through a linear regression model. Within this model, content area serves as the independent variable and the average TLI score serves as the dependent variable. Within this model, the content area identified as CTE was used as a constant. This model shows that there are statistically significant differences in teacher reported data when compared to the constant. Each coefficient within the table below displays the difference in TLI average score as compared to the constant. These differences show teachers in SPED, PE, and Performing Arts rate themselves significantly different than their colleagues as compared to the constant variable.

Table 1.4
Linear Regression Model of TLI Average Score by Content

Source	SS	df	MS			
Model	3.158	9.000	0.351	Number of obs = 321.000		
Residual.	52.966	311.000	0.170	F(9,311) = 2.060		
				Prob > F = 0.030		
				R-squared = 0.060		
Total	56.124	320.000	0.175	Adj R-squared = 0.030		
				Root MSE = 0.410		
TLIScore	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Content Area						
ELA	-0.031	0.095	-0.320	0.748	-0.217	0.156
Math	-0.126	0.099	-1.270	0.205	-0.320	0.069
Performing Arts	-0.216	0.111	-1.940	0.054	-0.435	0.003
PE	-0.348	0.158	-2.200	0.029	-0.659	-0.037
Science	-0.103	0.102	-1.010	0.312	-0.305	0.098
Social Studies	-0.062	0.111	-0.560	0.576	-0.281	0.157
SPED	-0.197	0.096	-2.050	0.042	-0.387	-0.008
World Language	-0.116	0.116	-1.000	0.317	-0.345	0.112
Visual Arts	0.232	0.152	1.530	0.128	-0.067	0.531
<u>_cons</u>	3.027	0.078	38.810	0.000	2.873	3.180

Before identifying and analyzing results regarding the “p” statistic, the R-squared statistic should be discussed. Within the regression, the R-squared is shown to be .06, or 6%. This statistic suggests that 6% of the variance between variables is explained by the linear regression model. Meaning, that 94% of the difference demonstrated between variables could be attributed to other variables, not the one tested within the regression. However, this was not unexpected as there are many variables that could explain the variability of teachers’ scores on the Teacher Leadership Inventory other than teaching content area. Some of these variables are mentioned within the limitations discussion in Chapter 5.

To put this statistic into another context; speeding while driving a car is often a cited variable as to how automotive wrecks occur. While there are obviously more reasons or variables that substantially outweigh why automotive accidents happen other than speed of the vehicle, it does not mean that speeding is not an important or influential variable when identifying why a car accident occurred.

Within this study, while there may be numerous other potential reasons or variables to explain or consider as to why teachers reported their TLI results differently, it does not mean that content area is not a significant variable to consider and include when determining the variability of scores overall, nor does the R-squared value demonstrate that content area should be ignored as a cause of variability.

In looking at other statistics within the regression, differences seen within the “p” statistic show that both the PE and Visual Art content areas demonstrate statistically significant differences at the .05 level. Further, the data demonstrates a statistically significant difference at the .10 level in regards to the Performing Arts content area. This finding shows that the teachers within this study do self-report differently on how they behave and demonstrate teacher leadership characteristics. Overall, teachers within Special Education, Physical Education, and Visual Arts self-reported that less often they portray aspects of teacher leadership across the four factors including sharing leadership strategies, sharing instructional practices, and going above and beyond the necessities of being a teacher. These three content areas provide unique, statistically supported differences when compared to other content areas being studied.

To explain the results, teachers in these content areas are often isolated in their practice for two reasons. Within the school district where the teacher population was surveyed, each of these content areas have very few colleagues within the building, as well as at the district level.

Given this, very few of these teachers, especially in Performing Arts have the opportunity to practice, implement, or display teacher leadership characteristics or have the opportunity to support their colleagues. Further supporting this explanation is the fact that lone teachers or “singleton” teachers, those who are the only teacher in their content area in their school, do not have the same experiences as their colleagues in terms of teacher collaboration. Within the school district where teachers’ data was taken, singleton teachers rarely have the opportunity to work with other teachers in their content from other schools, while their colleagues in other content areas in their building have weekly opportunities to collaborate with their colleagues. Often, Performing Art teachers such as Band, Choir, or Orchestra are the only teachers in their building within that content. In addition, PE teachers at the middle school level have very few colleagues. This lack of collaboration limits the opportunity of teachers in SPED, Visual Arts, and PE to display, practice, and hone teacher leadership behaviors essential within the collaborative process. This lack of opportunity could have a direct impact on how these teachers self-reported within the TLI.

A second possible explanation of the variance between content areas relates to the variability of the content area itself. While teachers within a Math department may teach multiple versions or types of Math such as Algebra, Geometry, Statistics, or Calculus, teachers within PE or Performing Arts consistently teach a similar curriculum to all their students. PE for example has very similar curriculum throughout different courses, especially in settings that only offer general PE courses. Performing Arts teachers are similar in lack of content variability. While student’s ability levels may alter between classes, the content and skills required remain constant. This lack of variability within content area could impact the desire or need to collaborate with others as the curricular needs or a teacher’s area of expertise is not challenged

the same way as a Math or Science teacher. DeHart (2011) explained that both collaboration and the sharing of instructional practices are key components measured within the TLI. These factors could provide a possible explanation as to why PE and Visual Arts scored themselves lower than other content areas.

In regards to SPED, these teachers work with students on more of an individual basis than typical content specific teachers. The individuality of student need can negate the collaborative impact of an overall SPED department. Further, a focus for SPED teachers with students relates to executive functioning skills such as time management and organization. These skills remain a constant throughout the curriculum and require SPED teachers to differentiate this curriculum to each individual student. Given the unique requirements of SPED teachers, their curriculum, as well and the individual nature of their students, it is a possible conclusion to explain their overall score differences be attributed to the individuality of their students and the lack of accessibility or reason to display teacher leadership characteristics within a department or building. Given that each student and situation is unique, SPED departments often have a difficult time utilizing true collaboration and sharing of ideas as each student requires their own unique support. However, given this is merely anecdotal, further study into the reasoning related to SPED teachers' collaboration and professional development would be needed.

Overall, explanations due to teacher isolation and lack of variance in teaching content and modality could explain the significant differences in teacher leadership characteristics. As a whole, the data shown within the linear regression model is not only needed for the purpose of answering the study's research question, but useful information for teachers as well as

administrators. Further analysis and implications of the results of this study will be discussed in Chapter 5.

Overall, the simple answer to the study's primary question related to whether or not content area relates to teachers' self-reported teacher leadership behaviors, is yes. As shown within the linear regression model, teachers within PE, SPED, and Performing Arts rated themselves lower than their colleagues, and this difference is statistically significant. Possible explanations were given as to why this could have occurred; however, it is useful information to building and district administrators in order to support teachers within these fields to enhance and incorporate more leadership training and opportunities.

Research Question #2

The secondary research question within this study seeks to examine the building principal's selection of teachers to formal teacher leadership roles and determine if there is an unequal distribution of these positions relative to content area. As discussed in the research methodology and data instrumentation, principals were asked to identify their top 15 teacher leaders within their building. In doing so, administrators ranked their top teacher leader as #1 and their 15th top teacher leader as #15. In addition, administrators provided each teachers' primary content area. Administrator scores were tallied and weighted to provide an overall score. Table 2.1 reflects the overall average scores given by the 12 administrators that participated in the study and represent buildings #1-12 in the study. These values reflect all administrator scores averaged together to create a total average for each content area.

Table 2.1
Building Administrator Average Ranking by Content

Subject Area	<i>M</i>
CTE	0.48
ELA	1.07
Math	1.07
Performing Arts	0.53
PE	0.23
Science	0.85
Social Studies	0.78
Special Ed	0.50
World Language	0.27
Visual Arts	0.22

As seen, the averages related to content area provided by administrator rating have a large range and are remarkably different than the relatively similar scores that teachers provided within the TLI self-reported data. For example, Visual Arts ranked themselves within the TLI data above the overall mean scores when compared to their colleagues. But when looking at the administrative scores, Visual Arts as a department has the lowest average score. Further, departments such as ELA, Math, and Science all scored higher in the administrative ratings than the self-reported data. Perhaps the largest takeaway from this is that the data suggests teachers are formulating their opinions and actions of teacher leadership independently of how their administrators select and identify teacher leaders. In other words, whoever building administrators identify as teacher leaders in their building, it does not impact how an individual teacher perceives their own teacher leadership behavior or characteristics. The stark differences between administrator rankings and teacher TLI supports the notion that these two variables are independent of one another.

Further interpretation of the data demonstrates that administrators scored the core subject areas of ELA, Math, Science, and Social Studies higher when compared to other content areas,

known more as elective subject areas. Examples include Visual Arts, Performing Arts, CTE, World Language and PE. The data displayed in Table 2.1 demonstrates that building administrators identified teachers in ELA, Math, Science, and Social Studies more often and rank them as stronger teacher leaders overall compared to their colleagues in other content areas. This data proves more interesting when compared to the self-reported teacher data of the TLI that showed no such correlation, and in some content areas, the exact opposite report of teacher leader behavior.

One possible explanation of these administrative rankings is a belief that the core content areas are seen as more dominant, or powerful, within the curricular domain. Over the course of American curricular development, there has been more of a curricular focus on Math, Science, Reading, Grammar, and History. This importance is seen within graduation requirements at the high school level, areas of study within the ACT and SAT, as well as thoroughly entrenched within college curriculum. Based on the number of courses required and offered in these core areas, there is a higher demand for teachers within these content areas. Since there are more classes in these subjects as compared to others in the areas of Art or PE for example, there are also more teachers needed to teach these courses. Probability could suggest that one reason for higher concentrations of core content teachers being identified by building administrators is related to simply having more teachers within the core content areas in each building to choose from. Still, given the nature of the core content, these core areas dominate the educational curriculum at both the high school and middle school levels. Combined with this explanation is the educational belief that certain contents are more important or have a higher profile within the school system. Given this belief, it is plausible that since core areas are more visible and foundational in the curriculum, teachers within these areas are more readily identified by their

administrators. This possible explanation could be part of the reason as to why administrators identify teachers in core areas more often than elective teachers.

An additional explanation for these data results could be related to the past teaching history of the individual administrator. Given that most building administrators come from core subject areas, these results could suggest a self-fulfilling prophecy. If administrators identify teacher leaders more often in core areas such as ELA, Math, Science, and Social Studies then these teachers have a stronger likelihood of being exposed to leadership positions within the building. With more formal leadership opportunities in the building, the likelihood of these teacher leaders moving towards building administration is stronger than teachers who were never identified as leaders in the first place. This example could explain a continued presence of former core content area teachers in building administrator roles. These administrators could identify more readily with those teachers who are following similar paths to the principalship, therefore fulfilling the prophecy and cycle of continuing to identify core teachers as leaders within the building.

In regards to Table 2.1 above, it is important to note the discrepancies between administrator data and teacher self-reported data. Administrators consistently rated core subject areas higher than those teachers rated themselves proportionally and rated elective teachers less than those teachers rated themselves. Further discussions and analysis of these discrepancies as well as statistical data will be discussed in the upcoming breakdown.

This analysis provides an interesting opportunity to dive deeper into the impact that administrators have on building culture and teacher leadership. As Angelle and DeHart (2011) discuss, a building administrator's role in providing leadership opportunities is key to the successful implementation and longevity of distributed leadership models like teacher leadership.

It is clear within the data of this study that there is a discrepancy as to how teachers self-identify themselves as exhibiting leadership and how building principals do. To fully understand the utility of this analysis, more study would need to be done focusing on building climate and administrator leadership. For example, what is the relational effect on teacher's self-perception based on who the administrator identifies as a teacher leader? For example, if a building administrator never identifies a Performing Arts teacher as a leader in their building, do Performing Arts teachers overall perceive themselves as less capable of leadership? Further, if many teachers within the Math department are given opportunities to exhibit leadership throughout the building, do Math teachers perceive their role as leaders more regularly than their colleagues, or attempt to exhibit leadership behaviors more often?

While these questions belong to further studies and rely on the assumption that administrators are actively engaging the individuals they identified as leaders to hold leadership positions, the data shown in Table 2.1 helps answer the secondary research question of this study. To further explore the relationship between teacher leader data and building administrator data, a linear regression model was run to demonstrate the effect of each variable on the other. As can be seen in Table 2.2, administrator teacher selection does not prove to be a statistically significant variable in determining how teachers will self-report their teacher leadership behaviors. The linear regression data further supports the study's finding that the two variables are not related. However, while the data demonstrates the independent relationship between teacher self-reported data and administrator rankings, there is more to be understood within these dynamics. Given the demands and limitations of this study, there is not complete information to make the determination that the two variables are completely uncorrelated. To further validate the results, more longitudinal and observational data could be needed to better understand

building traits and track the development and identification of teacher leaders by their building administrator. Even so, the data revealed within this study supports the need for further research in these areas.

Table 2.2
Linear Regression of TLI Average Score and Admin Overall Content Scores

Source	SS	df	MS			
Model	5.161	18.000	0.287	Number of obs = 287.000		
Residual	44.924	268.000	0.168	F(18,268) = 1.710		
				Prob > F = .040		
				R-squared = 0.100		
Total	50.085	286.000	0.175	Adj R-squared = 0.040		
				Root MSE = 0.420		
TLIScore	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ELA	0.003	0.103	0.020	0.981	0.201	0.206
Math	-0.118	0.105	1.130	0.259	0.324	0.088
Performing Arts	-0.224	0.118	1.900	0.058	0.456	0.008
PE	-0.368	0.164	2.250	0.025	0.690	-0.046
Science	-0.069	0.108	0.650	0.519	0.281	0.142
Social Studies	-0.050	0.118	0.430	0.669	0.282	0.181
SPED	-0.193	0.104	1.860	0.064	0.398	0.012
World Language	-0.072	0.124	0.580	0.561	0.317	0.172
Visual Arts	0.220	0.155	1.420	0.158	0.085	0.525
CTEScore	-0.076	0.760	0.100	0.921	1.573	1.421
ELAScore	0.050	0.152	0.330	0.741	0.249	0.349
MathScore	0.258	0.414	0.620	0.534	0.558	1.074
PerformingArtsScore	0.549	0.672	0.820	0.415	0.775	1.873
PEScore	-0.243	0.409	0.590	0.553	1.049	0.563
ScienceScore	-0.364	0.370	0.980	0.326	1.093	0.365
SocialStudiesScore	0.123	0.419	0.290	0.769	0.702	0.949
SPEDScore	0.348	0.367	0.950	0.343	0.374	1.071
WorldLanguageScore	1.057	0.628	1.680	0.093	0.179	2.294
VisualArtsScore	0.000	(omitted)				
_cons	2.252	2.177	1.030	0.302	2.034	6.538

The goal of the secondary research question within this study was to identify if building administrators demonstrated any patterns, or potential selection bias in how they identified teacher leaders in their building. As Table 2.1 demonstrated, there are clear differences as to how building administrators identify teacher leaders based on their content area. Administrators were far more likely to identify teacher leaders in the core content areas of ELA, Math, Science, and Social Studies than teachers within elective content areas such as Visual Arts or Career and Technology Education (CTE). Of particular interest, data demonstrated a stark difference as to how building administrators identified teacher leaders and how teachers identified themselves. Not only did administrators rank core content teachers higher than those teachers ranked themselves, there was an inverse relationship between how teachers in Visual Arts rated themselves and how they were identified by administrators. Visual Arts teachers consistently scored themselves higher than their peers within the TLI but were least likely to be identified by administrators as teacher leaders in their buildings. This data further supported within Tables 2.2 and 2.3 demonstrates that the building traits of teacher leadership as identified by teacher reported data have no relationship to administrator selection. Adding further support to the independent nature of self-reported scores and admin rankings, Table 2.2 shows similar TLI regression data after adding in the administrator score within the regression sample. This is an important finding as it suggests an independent relationship between administrator selection and identification and how teachers exhibit teacher leadership behaviors.

The design and implementation of the research methodology supported the two research questions of this study as well as provided further insights into the relationships between building administrator ratings and teacher self-reported characteristics. As discussed throughout this chapter, the data supports the notion that teachers do exhibit teacher leadership

characteristics differently and at different rates based on their content. While there were no statistical differences in many of the content areas, those teachers within PE, SPED, and Performing Arts all identified themselves less often compared to their colleagues.

Further, data suggests that administrators identify teacher leaders very differently than how teachers identify themselves. Administrator rankings showed a clear distinction between teachers within the core subjects of ELA, Math, Science, and Social Studies when compared to teachers within the elective content areas. This data supports the notion that teacher leaders are more likely to be identified as such if they are teachers within the core curricular subjects. An additional area of interest that data suggested was that the rankings of administrators when compared to self-reported data of teachers appeared to not have an influence on one another. This finding is of particular interest when discussing building culture dynamics and the development of teacher leaders within a building. These implications will be further discussed in the coming chapter.

Chapter 5

Discussion

Summary

This study focused on two key research questions related to teacher leadership behavior and administrator selection of teacher leaders within their respective buildings. The primary research question focused on if teachers identified their leadership behaviors differently based on their teaching content area. In order to answer this question, secondary teachers participated in a survey that asked them to identify how often they participated in a variety of teacher leadership characteristics and behaviors. These results were then analyzed and compared based off of the primary teaching content area of the teacher. Overall, teachers' results were quite similar, with small discrepancies between most content areas. This data remained consistent overall as well as when determining differences within the four subgroups of teacher leadership that made up the overall survey. However, it was determined through statistical analysis that teachers in the subject areas of Physical Education, Special Education, and Performing Arts all rated themselves significantly lower in how often they displayed those particular behaviors as demonstrated within a linear regression model.

The secondary research question sought to determine how building administrators identified teacher leaders within their building based on content area. Overall, the identification of teacher leaders by administrators showed large levels of variance between content areas. Data supported trends of building administrators identifying teacher leaders in the content areas of ELA, Math, Science, and Social Studies more often than their colleagues as well as identifying teachers within these areas as stronger teacher leaders. Further results of the study shown through regression models demonstrated that building administrator's identification of teacher

leaders did not independently affect the teacher self-reported data. The identification of a building trait of teacher leadership was also insignificant as to how teachers reported their own data.

Overall, this study determined that teachers identify themselves differently as teacher leaders based on their content area as to how often and to what extent they exhibit teacher leadership characteristics and behaviors. Further, building administrators demonstrate a distinct preference of identifying teachers in the core content areas as teacher leaders than in other areas. It was determined that neither administrator identification nor overall building teacher leadership traits impacted how teachers identified themselves as teacher leaders.

Conclusions

As discussed throughout the literature review, most literature related to teacher leadership focused on the definition of what teacher leadership is and the roles that teacher leaders play within a school community, the importance of professional development on teacher leadership, as well as the impact that teacher leaders have on student achievement and school culture. The overall findings of this study substantiate the importance of these themes as well as demonstrate the lack of research within the specific areas of job specialization and teacher leadership development.

Research has failed to define the notion of teacher leadership as to who exactly is included in this category. Mostly, this research has concentrated on identifying the traits that separate teacher leaders from their peers or categorizing the roles and positions that teacher leaders hold (Snell & Swanson, 2000). This study sought to explore the differences in traits both related to teachers within different content areas but also explore the impact that overall building traits associated with teacher leadership have on teacher leaders' self-reported behaviors. This

study identifies which content areas demonstrate teacher leadership behaviors overall as well as show that in most areas, teacher leaders identify themselves similarly to their colleagues. These findings suggest that past research is relevant to the work within this study. A focused approach on the identification of distinguishable traits between teachers and in the case of this study, by content area, could further support the research already completed and research still to be done in this area.

The results of the study indicate that teachers in the areas of Special Education, Performing Arts, and Physical Education all identify themselves as demonstrating teacher leadership less often. The findings should provide insight and questioning to those associated within these content areas as well as those in charge of professional development for these teachers. If a goal of a school or district is to develop teacher leaders and a culture of shared decision making, all teachers from all content areas must contribute. Considering the possible explanations of these results, it would seem relevant to discuss how teachers in these areas collaborate with each other, what the expectations of collaboration time are as well as to how the creation of teaching and class schedules and the development and implementation of curriculum could impact these research findings. If the goal of policy makers and school leaders is to bring all stakeholders into the decision-making process, more time and planning must go into how to support and encourage teacher leadership within these areas.

On the other hand, this study showed that teachers in the core content areas such as ELA, Math, Science, and Social Studies as well as other contents such as Visual Arts, World Language, and Career and Technical Education areas all self-reported similarly to each other. As discussed throughout this study, the four key subjects of ELA, Math, Science, and Social Studies have been revered throughout American educational history. It is plausible to think that given

the importance placed on these subject areas over time that these teachers continue to feel validated both in their teaching careers and pre-service programs. In addition, with many required classes being taught within these subjects, resources within schools and within school districts are regularly allocated towards teacher professional learning as well as curriculum audits and support. Given these factors, it would seem appropriate to believe that these reasons give potential answers as to why teachers in these areas reported similarly to their colleagues and at higher levels of teacher leadership engagement than teachers in SPED, Performing Arts, and PE.

In regards to teacher data from the content areas of World Language, Visual Arts, and CTE, answers to why these teachers results did not show significant differences may be more anecdotal to the setting of the study. Within the district studied, there is a strong support system for teachers in these areas both in the area of curriculum development but teacher development as well. Within the school district the study took place, there is a strong push for cohesiveness district-wide in these areas that regularly evoke teacher engagement in their own professional learning and have expectations of classroom teachers to engage their colleagues at the district level in developing curriculum, assessments, and professional learning. Given these factors are far more prevalent within these departments when compared to those in SPED, PE, and Performing Arts with the school district, it is plausible that the expectations and modeling of teacher leadership characteristics that have become ingrained in World Language, Visual Arts, and CTE allow teachers to feel more engaged and involved in teacher leader behaviors.

This study also sought to identify how administrators identified teacher leaders and to determine if a preference, or bias existed based on teacher content area. This data relates to past research that focused on the professional development of teacher leaders both within buildings, at a district level, as well as in the pre-service arena. Overall, teacher leadership and distributed

models of educational leadership have been shown to positively impact building culture and student achievement. As discussed within the literature review, teacher leader identification and development are paramount to the overall success of the building, to student achievement, and to school reform (Darling-Hammond, 1998). Data revealed within this study demonstrated that building administrators identified teacher leaders very differently than teachers identified themselves. Data further supported the notion that building administrators were consistent in their rating both in volume and in strength of leadership that teachers within the core content areas of ELA, Math, Science, and Social Studies were stronger teacher leaders across all buildings involved within the study. This finding strengthens other research-based conclusions that the professional development of teachers is paramount to the overall development of teacher leadership as a distributed form of school leadership. If content bias is present by building administrators, as indicated within this study, professional development must be changed to support a more well-rounded approach to distributed leadership within schools, both for administrators as well as teachers.

The impact of these research findings supports that there is potential inequity within educational systems as it relates to teacher leadership. The self-reported teacher data demonstrates a disproportion of displayed teacher leadership traits and characteristics between content areas. In addition, varied inequities of teacher leader identification by content area from building administrators was also present within this study's findings. The research focus of Elliot and Smith (2004) on job specialization and its effects on job promotion closely resembles the specialization of skills of teachers within different content areas. Meaning, those individuals who are most likely to be promoted or identified by management are also those that already were selected or identified for specific jobs leading up to their promotion. Specifically, as it relates to

school organizations, teachers within different content areas have different access to curriculum development, collaborative opportunities, and benefit from their overall dominance of school curriculum as determined by graduation requirements and standardized testing focus. This bias exists based on the notion that specific skills and abilities inherited or developed by teaching a specific content area could be more easily transferred to match the skills needed to be a teacher leader. This signifies that teachers within certain content areas potentially already have a greater opportunity to demonstrate teacher leadership skills or to be identified as such. This finding has substantial implications as to how a school or school district develops their vision and culture as well as how educational systems organize their professional development plans and teacher leadership programs.

“If true and lasting change is to take place in public schools, the chasm that exists between theory and practice must be bridged. Teacher leadership can be an important starting point to fulfill this goal” (Suranna & Moss, 2000). This quote validates the importance of a model of professional development for teacher leaders that provides equal opportunity for teachers who do or have the potential to demonstrate leadership traits. As a building administrator, understanding an underlining bias when identifying teacher leaders from the same content could create a more centralized focus on teacher leadership qualities, characteristics, and behaviors from teachers not within core areas. This approach could provide new opportunities for teachers, provide alternate viewpoints and work experiences, and overall, identify an untapped population of teachers who would otherwise not be identified and developed by administrators. This approach to distributed leadership could further support the goals of the school and bring new success to developing and sustaining reform within a school’s mission and vision. The findings of this study support the need for professional development of teacher

leaders to be tailored to specific content areas, especially those that rate themselves lower than their colleagues and are identified less often by administrators.

Limitations

Data conducted within this study focused on one large suburban school district. This district has had a strong history of identifying and developing teachers both as teacher leaders and promoting from the classroom to building administrator positions. This district is consistently recognized as one of the top performing districts in the region as well as nationally, so it does not resemble most districts within the state or region. Due to this, most teachers and administrators were well versed in the concept of teacher leadership and distributed models of leadership throughout the school system. Therefore, the findings within this study may not be fully transferable to other settings based on accolades and merit of the school district setting. While the number of both teacher and administrator respondents were relatively high, there were multiple limitations within the design of the study as well as regarding data collection.

One of the key limitations of this study focused on the lack of individual demographic data collected from each participant, specifically, the gender, race, and years of teaching experience of each participant. The concept of inequity or discrimination due to race or gender has been studied significantly within the areas of wage discrimination and overall lack of opportunity for minority employees. Maume (1999) researched the impact of race and gender on promotions within the workplace. This research showed that white males were more likely to be promoted than black men or women overall when holding a job within the same company the promotion occurred. The findings went on to describe how white men had a “glass elevator” towards promotion while black men and women had a “glass ceiling” when it came to overall opportunity (Maume, 1999). This research is relevant to the limitations of this study regarding

teacher leadership identification. Given there are multiple studies that support the importance of race and gender on job specific identification and promotion, not having these factors included within the statistical analysis is a key limitation to the overall impact and application of this study's research findings. If this data had been collected, it would have provided the opportunity to determine how gender and race impact the regressions within this study. This data could have provided additional insight as well as application to the implications and lasting effects of the research findings. This demographic data could have also significantly altered the existing data as presented within the linear regression models signifying different conclusions or explanations of the data to be made.

Another item of teacher demographic data that was not collected was regarding teaching years of experience. Angelle and DeHart (2011) researched the impact of years of teaching experience had on teacher perception of teacher leadership. Within this study, it was seen that teachers with more years of experience perceived teacher leadership differently than their less experienced peers, both in sharing experience and sharing leadership. These findings suggested that experienced teachers were more readily available to support other teachers in regards to instructional and pedagogical practice, but less available to support the school and staff in other capacities. This data while significant to the overall field of research regarding teacher leadership, was not included in this study as it dealt exclusively with teacher perception of teacher leadership at a building level. This study focused on the self-reported data of teachers to determine if they themselves were exhibiting leadership. However, examining effects and differences of years of experience as it related to self-reported data could have led to data that was significant, especially when compared and controlled by teacher content area.

A second key limitation to this study is its lack of observational data and longitudinal design. While the research data demonstrated that administrator identification of teacher leaders and teacher's self-reported data were independent of each other, the data did not shed light on the overall process of teacher leader identification and their development over an extended period of time. To fully understand how administrators identify teacher leaders and to see if those identified were actually developed and supported as teacher leaders by their administrator, a study with longitudinal design and a series of observations and interviews with both administrators and teachers would further substantiate the results of this study. In addition, this approach would have provided additional data, inferences, and implications of how administrator identification and development impact the overall building trait of teacher leadership as well as further identify potential bias of identification of teacher leaders based on their content area. Given this limitation, the data within this study, while significant and appropriate given the research questions being asked, leaves much opportunity for additional study and data to be collected to further understand how the content area of teachers impacts their own career growth as well as the development of teachers by their building administrator.

A final limitation of this data involves how the data was gathered. In the original design of the study, data was to be taken from each teacher along with an identifiable "tag" that would allow for direct comparison of each individual teacher to those teachers identified by their building administrator. In other words, the study was designed to compare if a specific teacher rated themselves similarly to how their building administrator rated them. However, this was not allowed by the school district as it was believed that the design of such a study lacked confidentiality for both the teacher self-reported data as well as publicizing principal's rankings of school employees. Given this design was not allowed, the study compared teacher data

grouped by content area to the content area of the teachers identified by building administrators. While this proved to be a viable option given the nature of the study, stronger data could have been collected with potential significant implications towards the overall analysis of teacher leader differences as well as overall administrative bias.

The limitations discussed above could have had significant impacts on the data analyzed within this study, especially in regards to factoring for gender of participants as well as identifying the teaching environment of teachers either in middle or high school settings. Further, consideration for tenure of teaching career could re-shape the data collected and the results of this study. Given leadership behaviors and characteristics are often crafted and implemented over time. Data recorded in regards to years of teaching experience could vastly shape the outlook of this study, and thus, the results. It is plausible to believe that teachers who are at the beginning, middle, or end of their careers would all show different levels of comfortability in exhibiting leadership to their colleagues, as well as be identified differently by their school administrator given the length of tenure in the building as well as within their career. This data combined with a longitudinal design as discussed, could re-shape the conclusions made within this study immensely.

Recommendations for Future Research

In its design, this study's focus was to search for how professional demographic characteristics related to teacher leadership behaviors. As discussed within the literature review, literature omitted a focus on demographic data related to teachers and instead focused on teacher leader's impact on building culture, student achievement, and models of professional development. It was believed that a study that contributed to the existing literature framework that identified a key variable as it relates to teachers, such as their content area, would provide

commentary to the existing discussions of who teacher leaders are and what they do. With that said, the data found and discussed within this particular study demonstrates several key implications to overall school organizations and leadership models. Furthermore, implications and limitations of the study suggest that a closer look within school districts' training and professional development of both teacher leaders and their administrators could have substantial impacts on future waves of teacher leaders and school administrators.

As this study identifies the impact of content area as the sole identifiable characteristic of teachers, future research could continue to determine how other demographic factors of teachers such as gender, race, or years of experience impact self-reports of teacher leaders as well as how administrators identify them as such. This data shown through a similar statistical methodology could have a significant impact on the existing data and regressions as detailed within this study. Further demographic information related to race and gender could seek to develop cases of administrative bias as it relates to the identification of teacher leaders, creating opportunities for research surrounding inequity within teacher leadership development and identification as well as implications related to the identification and development of formal school leaders such as principals and district office personnel.

Further research within the career tracts of teacher leaders could also lead to interesting studies within the existing vein of teacher leadership identification and development. It is often seen within school organizations that teachers who are identified as teacher leaders tend to leave the classroom and move to more formal roles of school leadership such as building and district leaders. Discussed as a limitation within the context of this study, developing a longitudinal study devoted to tracking teacher leader career paths could provide insight as to how the relationships between building administrators and their teaching staff develop or stifle teachers

from becoming leaders both formally and informally. A study within this concept could provide further insight into the existence of administrative bias as it relates to teacher content area as well as other individual demographic areas.

Overall, the limitations within the concept and implementation of this study provide new opportunities for others to engage in studies and literature related to both professional and personal teacher demographics and the corresponding impacts on teacher leadership at the individual and organizational levels. This recommended path of future research within teacher leadership has far-reaching implications within the design of professional development of teacher leaders, tailored to content bias identification as well as to bridge the gap of inequality of teacher leader identification and development. Further, research within this area could lend to a new focus at the pre-service level as university programs develop and teach their curriculum to pre-service teachers as it relates to pedagogy and professional experience. While the opportunities to re-engage research within teacher leadership are plentiful, a focus on who teacher leaders are within different stages of their career may be most interesting. This study identifies a continued need for future literature and research within the correlation of teacher leadership behavior and teacher traits. To fully understand how to better lead school organizations through models of distributive leadership models, it is strongly suggested that research within these specific areas is continued and developed as the implications for teachers, school leaders, and policy makers are substantial.

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Appendix A – Teacher Leadership Inventory

Participation Verification

Teachers often take on leadership responsibilities in schools. Understanding teacher leadership patterns is important to determining how schools function effectively. The items which follow ask your opinion and involvement about various aspects of teacher leadership. There are no wrong answers so feel free to respond to each statement candidly. Your responses will be completely anonymous. No one who completes this survey will be identified. Thank you for your cooperation.

* Required

I wish to participate in this study. *

Yes

No

Please list your primary content area below: *

Choose 

NEXT

Teacher Leadership Inventory

For each statement below, indicate how often you demonstrate these behaviors and characteristics in your school. Mark only one response per item.

- Never
- Seldom
- Sometimes
- Routinely

I assist other teachers when they have a problem with student behavior in the classroom. *

- Never
- Seldom
- Sometimes
- Routinely

I willingly offer assistance if teachers have questions about how to teach a new topic or skill. *

- Never
- Seldom
- Sometimes
- Routinely

I share new ideas for teaching with other teachers such as through grade level/department meetings, school wide meetings, professional development, etc. *

- Never
- Seldom
- Sometimes
- Routinely

I discuss ways to improve student learning with other school faculty. *

- Never
- Seldom
- Sometimes
- Routinely

I am involved in making decisions about activities such as professional development, cross curricular projects, etc. *

- Never
- Seldom
- Sometimes
- Routinely

I am actively involved in finding ways to improve the school as a whole. *

- Never
- Seldom
- Sometimes
- Routinely

I stay current on education research in our subject area. *

- Never
- Seldom
- Sometimes
- Routinely

I willingly stay after school to work on school improvement activities. *

- Never
- Seldom
- Sometimes
- Routinely

I willingly stay after school to help other teachers who need assistance. *

- Never
- Seldom
- Sometimes
- Routinely

I willingly stay after school to assist administrators who need volunteer help. *

- Never
- Seldom
- Sometimes
- Routinely

Administrators object when I take on leadership responsibilities. *

- Never
- Seldom
- Sometimes
- Routinely

The principal responds to my concerns and ideas. *

- Never
- Seldom
- Sometimes
- Routinely

I plan the content of professional learning activities at my school. *

- Never
- Seldom
- Sometimes
- Routinely

I have opportunities to influence important decisions even if I do not hold an official leadership position. *

- Never
- Seldom
- Sometimes
- Routinely

The principal consults me for input on decisions. *

- Never
- Seldom
- Sometimes
- Routinely

I use time provided to collaborate about matters relevant to teaching and learning. *

- Never
- Seldom
- Sometimes
- Routinely

I would serve in a leadership position if appointed by building administration. *

- Never
- Seldom
- Sometimes
- Routinely

Thank you for your participation in this study.

BACK

SUBMIT

Appendix B – Principal Staff Report

Principal Survey

Teachers often take on leadership responsibilities in schools. Understanding teacher leadership patterns is important to determining how schools function effectively. For this survey, please think of 15 teacher leaders in your building. To assist in identifying these teachers, please use the examples of teacher leadership behaviors below.

Teacher leaders:

- Have a positive impact on school climate through their interactions with staff and administration
- Assist in the development of their colleague's instructional practices
- Create environments for students to experience success in their classroom
- Provide facilitation of conversation between teachers and administrators
- Regularly go above and beyond to assist staff and students

You will use the drop-down menu provided in the next section. Please rank your strongest teacher as #1, second strongest #2, and so on until the list is complete. You will only be asked to identify the teacher based on their primary teaching content area.

* Required

I wish to participate in this study. *

Yes

No

Teacher Leader #1 *

Choose ▼

Teacher Leader #2 *

Choose ▼

Teacher Leader #3 *

Choose ▼

Teacher Leader #4 *

Choose ▼

Teacher Leader #5 *

Choose ▼

Teacher Leader #6 *

Choose ▼

Teacher Leader #7 *

Choose ▼

Teacher Leader #8 *

Choose ▼

Teacher Leader #9 *

Choose ▼

Teacher Leader #10 *

Choose ▼

Teacher Leader #11 *

Choose

Career and Tech *

ELA

Math *

Performing Arts

Science

Social Studies *

Special Education

Visual Arts *

World Language

Physical Education

SUBMIT