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Planning for Differentiated Instruction: Comparing Instructional Leadership Practices as Perceived by Administrators and Teachers in Middle School

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PLANNING FOR DIFFERENTIATED INSTRUCTION: COMPARING INSTRUCTIONAL LEADERSHIP PRACTICES AS PERCEIVED BY ADMINISTRATORS AND TEACHERS IN MIDDLE SCHOOLS

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DEDICATION

First and foremost I dedicate this dissertation to my wife, life coach, and best friend, Kim. Her support to pursue any goal, encouragement, and belief in my abilities sustained me throughout this process. This doctoral pursuit was never just about me. It is always been about us. Kim, as I have always said, you are my life. I love you.

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ABSTRACT

Scholars have purported that teachers infrequently implement differentiated instruction due to self-imposed obstacles or misconceived notions that promote barriers. This study was designed to generate an awareness of the differences between school administrators' and teachers' perceptions of instructional leadership practices towards implementation of differentiated instruction. From the existing research, six functions of instructional leadership and 27 practices were identified as being effective in supporting the implementation of differentiated instruction. These functions of instructional leadership along with related practices served as the basis for a two-part, six subset, and 27 item researcher-designed survey. Data were collected from 34 middle school administrators and 171 teachers from a major metropolitan school district in the southeast United States.

When viewed separately, the middle school administrators' and teachers' perceptions derived from this study reflected a high degree of agreement with the positive statements of the survey. Similar findings were discovered when examining administrators' and teachers' perceptions of instructional leadership in support of differentiation among middle schools of different school achievement status. However, when comparing administrators' and teachers' perceptions, teachers were not in complete agreement with administrators in 4 of 6 subsets including the total average of all subsets. Teachers consequently perceived survey statements about supervision and evaluation of instruction, protection of instructional time, providing incentives for teachers, and providing professional development as not being experienced to the same extent as believed by administrators to be in practice. These results are in alignment with the literature indicative of teacher perceived barriers towards the differentiation of instruction often hampered by a lack of administrative support. Additional evidence for this viewpoint may

be seen in the results of the total average of all subset functions of instructional leadership practices. A high degree of disagreement between administrators and teachers for the statements of the survey raises the concern that misconceptions exist. Given this outcome, school administrators may not be as attuned to the teachers' perceptions of their support for the practice of differentiated instruction.

Future research into the impact of competing priorities upon administrators' focus of instructional leadership may offer insights into the attentiveness of administrators toward teachers' instructional needs. Furthermore, policy makers should take into account the perceptions of principals for an innovation before requiring its institutionalization.

The researcher concluded by asserting that administrators have the responsibility to attend to teachers' perceptions. A misalignment of beliefs and attitudes held for innovations by school administrators and teachers can unfortunately contribute to creating additional barriers for implementation. Planning for differentiated instruction, or any instructional change, should be informed by the perceptions of all stakeholders for the innovation.

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CHAPTER 1

INTRODUCTION

This study of planning for differentiated instruction explored, from the perspectives of administrators and teachers, functions of instructional leadership practices used in support of teachers' approaches towards differentiation in the middle school classroom. Researchers recognize the middle school setting as being hallmarked by the diversity of the learning needs of students within typical classrooms (Tomlinson, Moon, & Callahan 1998). This classroom diversity requires the differentiation of instruction to address the spectrum of learners whose prism includes learning disabilities to that of the gifted and talented student (Munro, 2010; Tomlinson, 1999). Scholars have viewed differentiated instruction as being an effective approach towards teaching and learning for students with a diversity of learning needs (Geisler, Hessler, Gardner, & Lovelace, 2009; McQuarrie, McRae, & Stack-Cutler, 2008; Rock, Gregg, Ellis, & Gable, 2008; Tieso, 2005). Despite this knowledge, researchers on the topic of the practice of differentiated instruction have reported that teachers frequently displayed an unwillingness to employ differentiation in their classroom practices (Goddard, Neumerski, Goddard, & Salloum, 2010; Hertzberg-Davis, 2009). Researchers have indicated that school administrators' support of the classroom teachers through instructional leadership practices can counter-act negative dispositions towards differentiated instruction and remove obstacles perceived by teachers as impeding implementation (De Neve, Devos, & Tuytens, 2014; Hertzberg-Davis & Brighton, 2006; Smit & Humpert, 2012; Tomlinson, 2002).

Implementation of differentiated instruction places new requirements on teachers' skills involved in the process of adapting content to the needs of individual students within a diverse group (Holloway, 2000). According to Tomlinson (1999, 2000a, 2001a), differentiated

instruction is a process that involves planning for instruction to match the learning needs, strengths, and interests of students, as well as adapting the content associated with the curriculum and the process by which students engage in the content. The importance of differentiated instructional approaches toward student learning and outcomes is prevalent in the literature. Subban (2006), citing the research of various authors (Hall, 2002; McCoy & Ketterlin-Geller, 2004; Tomlinson, 2004a), stated "contemporary student populations are becoming increasingly academically diverse" (p. 938). Rock et al. (2008) purported the importance of differentiated instruction as a means of addressing the changing demographics of the classroom and the relative impact on instructional practices. The authors referred to statistics included in the United States Department of Education (USDOE) 26th Annual Report to Congress on the Individuals with Disabilities Education Act or IDEA. The report indicated that 96% of general education teachers have students with disabilities (SWD) in their classrooms and that increasing numbers of students have cultural or linguistically diverse backgrounds presenting challenges to traditional schooling (Lapkoff & Li, 2007). For educational innovations such as differentiated instruction to positively impact upon student learning needs, researchers found that school administrators' support of teachers to be critical in institutionalizing challenging classroom practices (Hertberg-Davis & Brighton, 2006).

Goddard et al. (2010) purported that school leaders' instructional support was a significant predicator in motivating teachers to incorporate challenging teaching approaches, such as differentiated instruction, into everyday practices in their classroom setting. The concept of instructional leadership emerged from the effective schools research of the early 1980s and is often referred to as managing and leading the school's teaching and learning (Goddard et al., 2010; Hallinger, 2003). Early researchers (Glickman, 1985; Pajak & Glickman, 1989; Schon,

1988) defined the role of the instructional leader to be one of helping teachers towards obtaining goals. Blasé and Blasé (1998) found that researchers had identified specific instructional leadership behaviors related to improving the teaching and learning process. Accountability legislation of the past decade, such as No Child Left Behind (NCLB) (2002), has brought about a re-examination of the role of the principal as the primary instructional leader. Along with the changing conception of principal leadership, Clifford (2012) and Lee, Walker, and Chui (2012) envisioned a type of instructional leadership that encourages teachers to problem solve, revise practice through self-reflection, collaborate in professional learning, monitor progress, and define teachers' roles in the process of improving instruction. Noonan and Hellsten (2013) maintained that as a result of a consistent stronghold in leadership literature, instructional leadership is held as the model for emulation by school leaders for its part in monitoring, mentoring, and modeling effective teaching and learning practices for teachers' classroom instruction.

Background of the Study

Differentiated instruction is accepted by scholars as being effective in improving student learning outcomes (Campbell, Campbell, & Dickerson, 1999; Koeze, 2006; Tomlinson, 2007). Differentiation requires teachers to change the teaching process based on instructional strategies aligned to the large span of academic diversity represented in today's contemporary classrooms (Tomlinson, 1999, 2001a; Valiande, Kyriakides, & Koutselini, 2011). Research into school effectiveness has produced a variety of studies that supported the idea that principals' instructional leadership can influence change in the instructional practices of teachers (Blasé & Blasé, 1998; Goddard et al., 2010). As a result of increases in accountability associated with school effectiveness and performance research, leading instructional efforts towards promoting

teacher effectiveness has evolved into a primary role for principals (Stronge, Richard, & Castano, 2008).

Since this study of planning for differentiation took place in a school district within the State of Georgia, it is critical to understand the historical context which led the State of Georgia's Department of Education (GaDOE) to emphasize differentiated instruction and its perceived impact on effective teaching and learning. The A Plus Education Reform Act of 2000 signaled the end of the decade-long Quality Based Education era in Georgia. In their study, Eady and Zepeda (2007) outlined the major focus of change brought about by the mandates associated with the statue. The authors wrote about the relative impact A Plus's accountability placed on "most notably principals, the person responsible for supervision, evaluation, and staff development" (p. 1). Eady and Zepeda further noted that, as a result of the mandate, teacher accountability had increased in that the "academic gains of students assigned to a teacher" would be reflected as "a component of the teacher's evaluation" (p. 2).

The Federal enactment of NCLB in 2002 required Georgia and other states receiving federal money for education to amend the A Plus Act to include conditions targeting institutional accountability for student growth and achievement, regardless of educational services (Gruenert, 2005). School leaders and their staffs would be assessed by measures of Adequate Yearly Progress (AYP) (USDOE, 2007). Higher standards of principal leadership also were implemented as principals were expected to plan, lead instructional initiatives, develop teachers, and affect progress through strategically-based school improvement change efforts. Failing schools faced local and state sanctions. Likewise, teacher performance standards increased with the state adoption of nationally aligned student-focused performance-based standards to promote high levels of teaching and learning referred to as the Georgia Performance Standards or GPS. In

establishing GPS, Georgia defined for its school leaders and teachers the expectations for acceptable instructional practices.

In 2009, the American Recovery and Reinvestment Act (ARRA) ushered in another round of reforms in Georgia with the Race to the Top (RTT) grant provision of four billion dollars in funding for new approaches to school improvement. Race to the Top was designed to incentivize states to engage in comprehensive educational innovation and reform across four areas: 1. standards and assessments; 2. data systems to support instruction; 3. persistently low-achieving schools; and 4. teaching and leadership (Governor's Office of Student Achievement, 2014). Georgia was amongst a handful of states who were awarded support through the federal RTT grant (GaDOE, 2014). With the absence of the reauthorization of NCLB (2002), the Obama administration in September of 2011 granted Georgia a waiver from the NCLB law in exchange for state-developed plans of the type of reforms sought by the Federal government's RTT grant (USDOE, 2009). Georgia's waiver consisted of a comprehensive platform for school improvement emphasizing school accountability to meet specific criterion associated with content mastery and progress as well as teacher effectiveness (USDOE, 2015).

Over the past 30 years, the GaDOE has sought to impact classroom outcomes directly through accountability-based policy requiring school leadership to implement evaluation instruments designed for building teacher effectiveness. Examples of teacher evaluation tools include: Georgia Teacher Evaluation Program and the corresponding Georgia Teacher Observation Instrument, circa 1984; Professional Assessment Instrument, 2002; Class Keys Classroom Teacher Evaluation System, 2009; and most recently the Teacher Keys Effectiveness System, predicated on the work of Stronge (2011), and adopted in 2012. The Teacher Keys Effectiveness System (TKES) is comprised of 10 performance standards of which differentiated

instruction is recognized by the GaDOE as key to effective teaching and learning for ever increasing levels of classroom diversity (GaDOE, 2012). Through the TKES evaluation instrument, school leadership is held accountable for the implementation of strategies for differentiation in the practices of classroom teachers.

As the emphasis on the importance of effective teaching practices, such as differentiated instruction, began to increase in the State of Georgia so did a renewed focus on the role of school administrators as instructional leaders to carry out the mandates prescribed by legislated reforms (Bottoms & O'Neill, 2001). Horng and Loeb (2010) purported that the literature portrays instructional leaders as inspiring teachers to focus their teaching skills to impact student learning directly. Salo, Nylund, and Stjernstrom (2015) reported instructional leadership, as a mediating leadership practice, has largely been overlooked by scholars. According to the authors, not much is known about why, when, and how school administrators influence teachers' work in the classroom. In the view of the authors, the concept of instructional leadership has evolved over recent years with a significant interest in the intentional, goal-oriented practices by which school leaders relate to teachers' responsibilities for teaching and learning, and thus serving as the focal point of this study of planning for differentiated instruction.

Statement of the Problem

Despite the knowledge that differentiated instruction is effective in addressing the diverse learning needs of students, researchers on the topic of the process of differentiated instruction have reported that teachers frequently displayed an unwillingness to employ differentiation in their classroom practices (De Neve et al., 2014; Goddard et al., 2010; Hertberg-Davis, 2009; Smit & Humpert, 2012; Tomlinson, 2002; Van Tassel-Baska & Stambaugh, 2005). Previous research into the challenges or obstacles involving teachers' implementation of differentiated

instruction found that teachers did not differentiate due to: 1. a lack of professional development to support practice; 2. a lack of administrative support; 3. logistical time constraints; 4. impact on classroom management; 5. concerns about equity grading practices; 6. requirements associated with standards-based instruction discourage implementations; 7. teachers' resistance to change; and 8. misconceptions perpetuated by a lack of knowledge of strategies related to approaches toward differentiated instruction (Nunley, 2006; Weber, Johnson, & Tripp, 2013). Collectively, these obstacles can pose a very specific challenge to school leaders' abilities as an instructional leader to successfully institute differentiation as a common instructional approach toward teaching and learning.

With the legislative impact of the State of Georgia's newest educational reform efforts, the College and Career Readiness Performance Index (CCRPI) was enacted in 2012 as a measure to break away from the constraints of NCLB (2002). The GaDOE sought more state control by choosing to align instructional standards to a national common core and in setting targets of student performance for local schools. New paradigms for the operation of schools shaped the way educators and administrators work. Ever increasing demands of accountability place the responsibility on school officials to carry out the policies of reform and for teachers to implement instructional innovations (Printy, 2008).

For school administrators to meet the expectations established by state mandates for teachers' implementation of differentiated learning, they must frequently enact a model of instructional leadership practice that removes challenges or obstacles that impede teachers' implementation of differentiated instruction. These practices should support teachers in dispelling misconceptions about differentiation and promote a willingness to employ the process in their classroom practices (Goddard et al., 2010; Hertberg-Davis, 2009; Weber et al., 2013).

Understanding the teachers' perceptions of instructional leadership practices toward differentiated instruction will help administrators to plan for strategies in working with teachers to the implement the process.

Purpose of the Study

The purpose of this study was to identify, from the perspectives of administrators and teachers, functions of instructional leadership practice used by school administrators in support of teachers' approaches towards differentiation in the middle school classroom. Twenty-seven instructional leadership practices, identified in the literature as supporting the implementation of differentiated instruction (Carolan & Guinn, 2007; Goddard et al., 2010; Hertzberg-Davis & Brighton, 2006; MacAdmis, 2001; Page, 2000; Petig, 2000; Quinn, 2002; Suppovitz, Sirinides, & May, 2010; Tomlinson & Allan, 1997), were examined across six core functions of instructional leadership. These features of instructional leadership were derived from the works of Hallinger (1983 2005), Hallinger and Heck (1998), and Hallinger and Murphy (1985) on the topic of effective principals' instructional leadership practices. The six core functions of instructional leadership consist of communicating school goals, supervision and evaluation of instruction, monitoring student progress, protecting instructional time, providing incentives for teachers, and providing professional development. The selection of these leadership behaviors is predicated upon the indication by researchers as being common to the daily functions of school administrators engaged in instructional leadership (Hallinger, 2005; Waters, Marzano, McNulty, 2003).

This study is designed to generate an awareness of the differences between school administrators' and teachers' perceptions of instructional leadership practices towards implementation of differentiated instruction. Perceptions are the reality in an educational context.

It is of paramount importance to recognize teachers' perceptions of leadership practice and identify any misconceptions held by school administrators of their influence on teaching and learning. Consequently, this research may assist school leadership engaged in the troughs of implementing mandated instructional interventions in better aligning practices, across the six core functions of instructional leadership, in support of teachers' differentiating instruction in the classroom.

Theoretical Framework

The theoretical framework is the lens through which a study is viewed and guides the research (Butin, 2010; Creswell, 2009). Multiple theories may be relevant in shaping the research questions, design, methodology, and finally the analysis of the findings derived from the study.

One of the theoretical frameworks for this study is derived from the realm of developmental psychology. Vygotsky's (1978) Social Constructivist Learning Theory has been viewed by researchers as central to the delivery of educational innovations, interventions, and changes tailored to the instructional needs of students (Blake & Pope, 2008; Subban, 2006). Across time, scholars (Derry, 1999; Kim, 2001; Lave & Wenger, 1991; McMahon, 1997; Wertsch, 2005) have applied Vygotsky's theory towards the understanding of how individuals construct knowledge with relevance to teaching and learning. According to Derry (1999), social constructivism stresses the significance that culture and context have on understanding what events occur within society and the knowledge constructed through these experiences. Kim (2001) detailed the following three assumptions related to constructivist theory:

1. Reality is constructed through human activity and meaning created through these interactions.
2. Knowledge is socially and culturally constructed.

3. Learning is viewed, through the lens of social constructivism, as a social process when human beings interact.

McMahon (1997) observed learning from a constructivist's perspective as being shaped by external factors. These assertions of scholars are essential in understanding the theoretical framework for differentiated instruction. However, as it concerns this research study, learning is envisioned as the socially constructed realities, or perceptions, of school administrators and teachers while engaged in the process of implementing differentiated instruction as required by policy.

The social interaction (Wertsch, 2005) between school administrators and teachers factor in on teachers' abilities in formulating knowledge of how to differentiate instruction or how to be motivated to employ the approach in the classroom. Referring once again to Kim (2001), constructing social meaning "involves inter-subjectivity among individuals" where "personal meanings shaped through these experiences are affected by the inter-subjectivity of the community to which they belong" (p. 3). Kim drew upon Lave and Wenger (1991) who suggested that "a society's practical knowledge is situated in the relations among practitioners, their practice, and the social organization" (p. 5). Therefore, the development of knowledge and social meaning are formed by interactions and experiences consequently influencing the personal beliefs, attitudes, and perspectives of individuals in the context of the workplace.

The implications of social constructivism are relevant to this study in that this theory alludes to the existence of beliefs or attitudes derived from "constructs or perceptions of principals and teachers relating to shared ideas" (Kim, 2001, p. 5). Thus, the importance of appreciating the principles of the social constructivist theory is a primary step in the formulation and answering of the research questions.

In addition to Vygotsky's (1978) Social Constructivist Learning Theory, Michael Fullan's (1982) work on educational change is of equal importance answering this study's research questions. Fullan (1982, 2001, 2005, 2014) focused on the roles of the human participants taking part in the change process. In partnering with Stiegerlbauer in 1991, Fullan stressed that there was enormous potential for true, meaningful change simply in building coalition with other change agents, both within one's own group and across all groups (Fullan & Stiegerlbauer, 1991). In his concept of the initiation stage of the change process, Fullan identified advocacy from administration and teachers as being the two local factors affecting change. For the change momentum to continue he emphasized that skilled and committed administrators and teachers would be needed. Fullan's (1982) educational change model provides an underpinning to this study by indicating that a new educational initiative, such as differentiated instruction, has to involve dedicated stakeholders like school administrators and teachers to collaborate in planning and implementation. Furthermore, Fullan's work (2001) indicated that teachers' perceptions of actors involved in educational innovations to be a critical factor in the success of initiatives to improve teaching and learning (Hermann, Tondeur, van Braak, & Valcke, 2012). Therefore, any discussion on teachers' resistance to implementing differentiated instruction should involve the consideration of teachers' attitudes toward change alongside of any understanding of the importance of the social context in influencing the perceptions of both school administrators and teachers.

Conceptual Framework

Spillane, Halverson, and Diamond (2004) wrote:

> To study leadership activity, it is insufficient to generate thick descriptions based on observations of what school leaders do. We need to observe from

> within a conceptual framework if we are to understand the internal dynamics of leadership practice. (p. 4)

Serving as an overarching frame of reference for studying school leadership practice, Argyris and Schon's (1974, 1978) framework for theories of practice "offers an intriguing approach towards understanding the critically important work of school principals in an era of government-mandated school reform" (Houchens & Keedy, 2009, p. 51). Houchens and Keedy (2009) purported that by examining the structure of theories of practice, as put forth by Argyris and Schon (1974), implications for the rationale behind the actions of school leaders when confronting policy-based reforms can be understood. Theories of practice, as defined by Argyris and Schon (1974), are notions for action grounded in response to problems emerging from a workplace context. Theories of practice, according to Houchens and Keedy, are "routines, procedures, and specific practices for dealing with problems common to the practice environment" (p. 50). The authors described a practice as a sequential series of actions that are repeated with aspects of previous methods present in new approaches to problem solving. Thus, new theories of action are built from a revision of a set of values, beliefs, and assumptions. Theories of practice are comprised of "a set interrelated theories of action" specific to a given situation and "yield intended consequences" (p. 50).

Influenced by the ideas put forth by Argyris and Schon (1974), Keedy and Achilles (1997) and Keedy (2005) proposed that principal-developed theories of practice were "a means of creating new norms of behavior within schools" (Houchens & Keedy, 2009, p. 53) and have the potential to improve upon principal effectiveness. Keedy and Achilles argued that school administrators' theories of practice had the greatest bearing on the impact of a principal's influence on relationships developed with teachers. Houchens (2008) drew connections between

the cognitive mapping of principals' instructional leadership theories of practice to that of "specific effects upon teachers' attitudes, and behaviors" (Houchens & Keedy, p. 56). In this way, the concept of theories of practice is relevant to this study in that it corresponds to the emphasis on the theoretical underpinnings related to school administrators functioning as instructional leaders. It also can be used to explain a leader's disposition towards decision-making and the consequent impact on the attitudes of teachers when dealing with new norms for instruction in their schools (Houchens & Keedy) and in formulating the research questions of this study.

Assessing Principal Instructional Leadership

As indicated in Hallinger (2009), the concept of quantitatively assessing instructional leadership practices had its origins within leadership models proposed during the 1980s. Works by Andrews and Soder (1987), Bossert, Dwyer, Rowan, and Lee (1982), Hallinger and Murphy (1985), Leithwood and Montegomery (1982), Leithwood, Begley, and Cousins (1990), Van de Grift (1987), and Villanova, Gauthier, Proctor, and Shoemaker (1982) resulted in a body of knowledge on principal instructional leadership (Hallinger & Heck, 1996b, 1996c, 1998). Andrews and Soder (1987) sought to measure strategic interactions between principals and teachers. The authors conceived the role of leadership in terms of behaviors such as: 1. resource provider; 2. instructional support; 3. communicator; and 4. a visible presence. The authors' findings suggested that "teacher perceptions of the principal as an instructional leader were critical" to teachers' impact in the classroom (Andrews & Soder, p. 11). Other authors, such as Leithwood and Montegomery (1982), developed a model for planned change that involved assessing a principal's knowledge about leadership behaviors that improve the effectiveness of schools. Van der Grift (1987) conducted research on leadership practices and their relationship to

school outcomes in the Netherlands. The author developed a concept of categorizing leadership across six behaviors: 1. coordinates instruction; 2. emphasizes achievement; 3. frequent evaluates pupil progress; 4. provides an orderly atmosphere; 5. sets instructional strategies, and 6. supports teachers. When examined collectively, these scholars' works offer a fundamental description of the leadership functions and behaviors of school leaders that potentially impact teachers' perceptions of instructional leadership.

Hallinger and Murphy (1985) offered a conceptualization for assessing a principal's instructional management across three dimensions comprised of leadership activities. These three dimensions consisted of: 1. defining the school mission; 2. managing the instructional program; and 3. developing the school learning culture (Hallinger, 1983; Hallinger, Murphy, Weil, Mesa, & Mitman, 1983). The authors further delineated the three dimensions into ten functions of leadership as put forth by Hallinger (1982, 1983, 1987) in the framework for the Principal Instructional Management Rating Scale (PIMRS) (Hallinger & Murphy, 1985; see Figure 1).

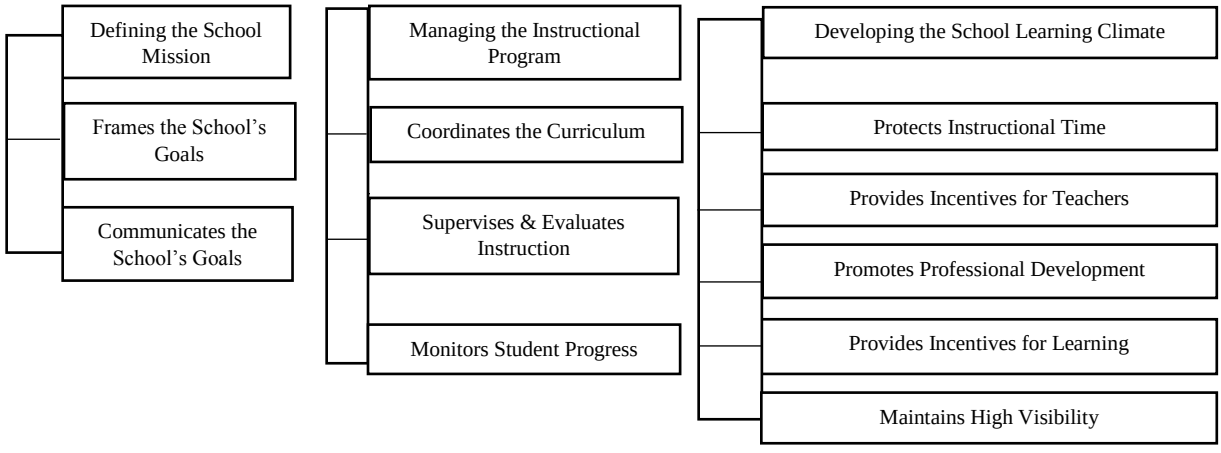

Figure 1. Principal Instructional Management Rating Scale (PIMRS) conceptual framework.

The first dimension of defining the school mission is broken down by Hallinger and Murphy (1985) into two leadership functions of framing and communicating the school's goals

expressed in measurable performance targets (Bossert, et al. 1982; Davies, Ellison, & Bowring-Carr, 2005; Kantabutra, 2005). These performance objectives include student achievement data, staff responsibilities in achieving objectives, regular communication, and review of the school's most crucial goals (Brookover et al., 1982; Leithwood, Day, Sammons, Harris, & Hopkins, 2006).

Next, in the second dimension of managing the instructional program, Hallinger and Murphy (1985) emphasized the instructional leadership functions of supervising and evaluating instruction, coordinates curriculum, and monitors student progress as they relate to the development of teachers' instructional capacity (Hallinger & Wang, 2015).

Lastly, Hallinger and Murphy (1985) conceived of a third dimension within the PIMRS (1983) framework comprised of four leadership functions as seen by the authors that create work structures and enable teachers' instructional practices (Hallinger & Heck, 1998; Leithwood et al., 2006). This dimension is detailed further with the use of five instructional leadership functions.

1. The first instructional leadership functions associated with the third dimension of the PIMRS framework, protecting instructional time, deals with leaders' provisions for blocks of learning time that are free of interference from unnecessary interruptions (Bossert et al. 1982; Lasley & Wayson, 1982).
2. The second instructional leadership function of maintaining high visibility for teachers serves to increase the interactions between school administrators and educators as well as students that impact on discipline and classroom instruction (Barth, 1990; Hallinger & Wang, 2015).

3. Providing for incentives for teachers is the third instructional leadership function that pertains to motivating staff through praise and recognition resulting in incentivizing and promoting a positive school climate (Anderson, 1982; Leithwood & Beatty, 2008).
4. The fourth instructional leadership function is supporting professional development. Research conducted by Robinson, Lloyd, and Rowe (2008) found the principal's support for and participation in the professional development of staff to have the largest effect on school learning outcomes.
5. Finally, the fifth instructional leadership function of providing incentives for learning by creating a school climate where student academic achievement is visibly celebrated and rewarded (Hallinger & Wang, 2105; Lasley & Wayson, 1982).

PIMRS Instrument

Hallinger, Wang, and Chen (2013) offered a description of the PIMRS instrument as having 10 subscales and a total of 50 items for which "the rater assesses the frequency with which the principal enacts a behavior or practice associated with the particular instructional leadership function" (p. 276). Items are rated on a Likert-type scale that ranges from (1) almost never to a rating of (5) almost always. The method for scoring the instrument is completed by the calculation of mean for the items that make up each subscale resulting in a data-based profile of the principal in the performance of instructional leadership functions. The PIMRS instrument has three parallel forms with identical items for completion by supervisors, administrators, and teachers with stem changes to accommodate differences in perspectives of the role the rater plays in the organization. Hallinger, et al. (2013) noted that multiple studies (Howe, 1995; Jones, 1987; Taraseina, 1993; Wotany, 1999) have included extensive assessments of the reliability and validity of the PIMRS yielding similar results across P-12 educational settings.

Well established in the literature for reliability and validity in collecting data on instructional leadership (Hallinger, 2000, 2008; Hallinger & Heck, 1996; Hallinger & Murphy, 1987; Hallinger et al., 2013; Howe, 1995; Jones, 1987; Taraseina, 1993; Wotnay, 1999), Hallinger's (1983b) PIMRS instrument provided a second construct for the conceptual framework for this study in developing a research perspective from which to view multiple instructional leadership functions relative to promoting teaching and learning, and in designing a research instrument to collect data on the instructional leadership practices of school administrators.

Teacher Keys Effectiveness System

The third construct of the conceptual framework is derived from the State of Georgia's Department of Education's Teacher Keys of Effectiveness System (TKES) (GaDOE, 2013, 2014). The significance of TKES to this study can be seen in the evolution of teacher evaluation through federal policy (Zepeda, 2015). However, an understanding of the origins of the TKES evaluation instrument and the expectations for teacher performance entailed in Standard 4, Differentiated Instruction, is essential to the purpose of this study as well in developing the rationale behind the design of the data collection instrument.

Zepeda (2015) stated that "the face of teacher evaluation has been heavily influenced with the NCLB Act 2002 and its call for highly qualified teachers and standards-based classrooms" (p. 36). The author goes on to say that NCLB "set the stage for teacher quality" (Zepeda, p. 40) as a central tenant of reforming education and utilizing certification as a means of requiring districts and schools to hire educators to teach in field. With the advent of the ARRA in 2009, "influential federal priorities found in initiatives such as the Race to the Top (RTT) program" ushered in a paradigm shift away from teacher quality as a core focus of reform and

"situated teacher evaluation systems matching student success on standardized tests with a teachers' effectiveness" (Zepeda, p. 36). "RTT moved education policy out of the shadow of NCLB and the stigma of Adequate Yearly Progress" (AYP) and brought about a "focus on teacher effectiveness measured in teachers' student performance" through value-added models (Zepeda, p. 36).With the incentives associated with the RTT grant, subsequent waivers released states from the auspices of NCLB (2002). A majority of states chose to place teacher evaluation at the forefront of educational accountability and reform. TKES was developed to assist with Georgia's RTT plan (GaDOE, 2012). Warnock (2015) noted that Georgia as an RTT grant recipient, committed to developing and implementing a teacher evaluation system for the purposes of improving the overall conditions of teaching and learning as well as to improve the quality of current classroom teachers (GaDOE, 2012).

Zepeda (2015) purported that "teacher evaluation aspires to focus on accountability for teacher effectiveness" (p. 37). The author noted that "more purposefully, teacher evaluation systems engage leaders to enact their role of ensuring the instructional programs are being carried out by a competent teacher and that underperforming teachers are able to get the support they need to improve" (p. 37). TKES was designed with the intent to "breathe life into Georgia's new evaluation system so that it would become an opportunity and vehicle to provide the professional learning and growth opportunities needed to support Georgia teachers in becoming the most effective teachers possible" (GaDOE, 2012 as cited in Warnock, 2015, p. 25).

The origins of the GaDOE Teacher Keys Effectiveness System (TKES) instrument is founded upon the research and scholarly works on teacher evaluation conducted by Danielson (2001), Danielson and McGreal (2000), the Joint Committee on Standards for Educational Evaluation (2009), Shinkfield (1994), Stronge (2006), Stronge and Tucker (2003), and Wheeler

and Scriven (2006). Collectively, these works speak to teacher effectiveness. The GaDOE (2014) took the position that teacher effectiveness is "the most influential school-related factor in student achievement" and that "if teacher quality is the pillar of the success of education" then "it logically follows that a robust teacher evaluation system should be in place" following the purpose of the assessment in developing effective teachers (p. 6). Following Stronge and Tucker (2003), the GaDOE stipulated in the rationale behind adopting TKES that a well-designed evaluation instrument is the underpinning for the conveyance of effective educational programs as well as school improvement. The purposes as well as the benefits of a quality teacher evaluation system involve teacher professional growth and accountability toward improving instructional programs and student performance. Stronge (2006) spoke of one such benefit of a teacher evaluation system as including clearly established standards for teachers.

The 10 standards that comprise TKES are predicated on research-based approaches towards planning, instruction, differentiation, assessment, the learning environment, and communication (GaDOE, 2012). For this research, the elements of Standard 4, Differentiated Instruction, and related literature were examined for: 1. the research behind the standard and teacher performance indicators, and 2. specific references to dimensions of instructional leadership as framed by Hallinger and Murphy (1985).

The GaDOE (2012), in Standard 4 of the TKES instrument, cited the research of Brighton, Hertberg, Moon, Tomlinson, and Callahan (2005), Carolan and Guinn (2007), Dunn, Griggs, Olson, Beasley, and Gorman (1995) Tomlinson (2001), and Weiss (2003) as illuminating the effectiveness of the teaching strategy of differentiated instruction as a means of "providing appropriate content and developing skills which address individual learning differences" (p. 15). Brighton et al. (2005) alluded to aspects of teacher practices that used the instructors' knowledge

of individual student performance data and the need for an instructional framework that included a type of flexible classroom management that facilitated student-focused instruction. Carolan and Guinn (2007) wrote of diversity in the classroom and the potential of differentiated instruction to maximize student learning by responding to diversity with an instructional approach that offered a variety of ideas, perspectives, and solutions towards problems. Dunn et al. (1995) conducted research on the efficacy of teaching students through learning-style preferences finding significant differences between groups with or without instructional interventions. Tomlinson (2007) detailed how differentiated instruction had application across all facets of instructional practices tailored to meeting the diverse learning needs. The author's work is reflected across TKES, Standard 4, in the areas of teachers' planning and adapting instruction to meet student needs as well as in utilizing assessments specifically targeting the impact of strategies on student learning outcomes. Weiss (2003) offered a detailed explanation of what effective teaching of differentiation initially requires. The author purported that a single pedagogy was an ineffective approach given the knowledge that student learning occurred in a variety of ways and rates. Weiss stated that differentiation, as a cornerstone of effective teaching, was a means to maximize learning for individual students and a necessary shift away from single pedagogies.

When viewed collectively, the aforementioned literature provided the research-base for the GaDOE's (2015) sample performance indicators for Standard 4, Differentiated Instruction, which are comprised of the following teacher actions to meet students' individual learning needs:

1. implementation of differentiated instruction, as required by TKES, that teachers differentiate the instructional content, process, product, and learning environment;
2. challenge students by providing enrichment or acceleration and support the learning of the struggling student through remediation;

3. flexible grouping strategies are used towards classroom management to promote appropriate peer interactions and to accommodate student learning needs/objectives;
4. data derived from assessment is used to inform instructional modifications for individual students;
5. provides learning experiences that promote critical and creative thinking skills at the appropriate degree of challenge for students; and
6. demonstrates high learning expectations commensurate with students' developmental levels (GaDOE, 2014).

It follows then that the TKES instrument, when seen as a tool for policy, requires teachers to implement differentiated instruction, provide tiered instruction, use classroom management strategies to facilitate accommodations for student learning, use data to derive instructional strategies, and align learning experiences appropriate to the learning needs and developmental levels of students.

The GaDOE (2014) recognized that as "general education classrooms are increasingly inclusive; differentiation is becoming more essential" for students to learn at optimal levels and "despite the importance of differentiation that teachers are not implementing it on a regular basis" (p. 30). Referring to the findings of Latz, Neumeister, Adams, and Pierce (2009), who noted among several reasons that the lack of implementation as being related to teachers not receiving administrative support, the GaDOE further recognized leaderships' role in building upon exiting teacher strengths and practices toward specific standards. Specifically, the GaDOE (2012) clearly stated the need for leadership to "identify appropriate actions to take as instructional leaders" (p. 2).

The resulting TKES system brings together the school administrator, acting as an instructional leader, with teachers to interact for the purpose of assessing student learning, engaging in professional discussions on effective instruction, and planning for professional development to improve practice. Ultimately, the relevance of TKES to this study occurs in the context of teacher evaluation where administrators and teachers form their perceptions of one and others' effectiveness as instructional leaders and teachers.

Conceptual Model

The Georgia State Department of Education (GaDOE, 2012) stated in its theory of action for the Teacher Keys Effectiveness System (TKES) that "if teachers focus classroom practice on behaviors that increase student learning, then leaders will need to provide support for teachers to develop and implement those behaviors" (p. 1). Beginning with the theoretical underpinnings of practice held by school administrators, in the function of an instructional leader (Argyris & Schon, 1974), this conceptual model attempts to explain the perceived relationships between Hallinger's (1983) dimensions of instructional leadership functions as noted on the PIMR and the related practices to TKES (GaDOE, 2012). By examining similarities between the expectations for teacher performance associated with TKES, Standard 4, Differentiated Instruction (GaDOE, 2012), and the instructional leadership functions of PIMRS, distinct parallels can then be drawn to the literature on instructional leadership practices that support teachers' implementation of differentiated instruction reviewed later in Chapter 2. See Figures 2 and 3 for visual representations of the comparisons.

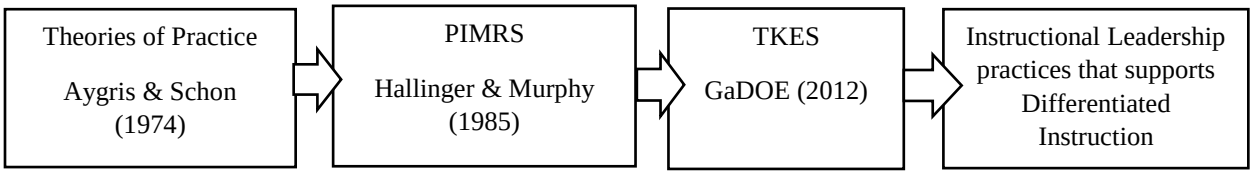

Figure 2. Conceptual Model.

The Conceptual Model (Figure 2) illustrates the conceptualization of both the relationship between constructs utilized in this study of planning for differentiated instruction and the development of the rationale behind the design of an instrument for data collection for answering the research question. Following Figure 2, Figure 3 diagrams the dimension of instructional leaders functions (Hallinger & Murphy, 1985) used in this study, their relationship to TKES (2012), and an example of an instructional leadership practice identified in the literature as conducive to supporting teachers' implementation in the classroom.

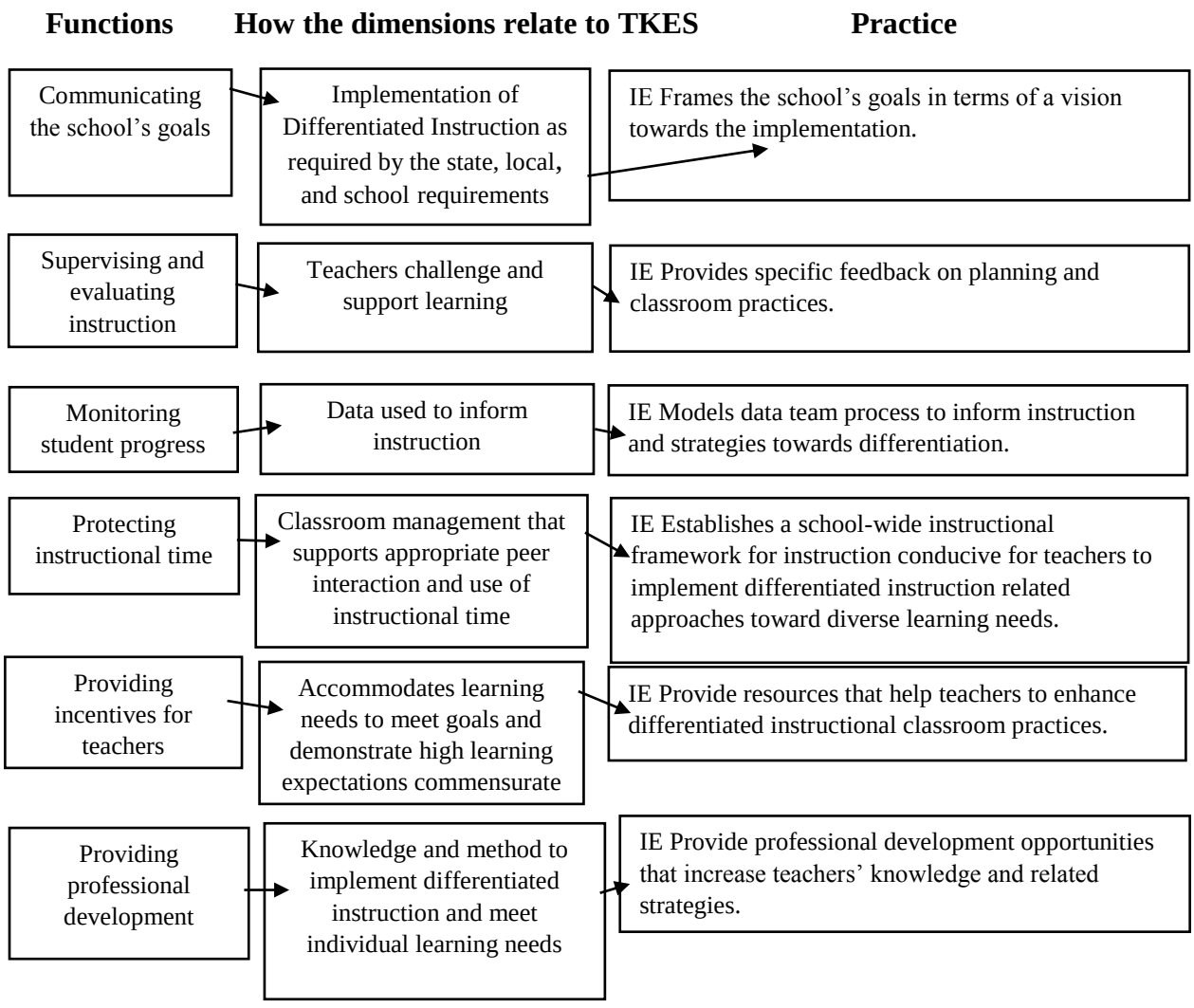

Figure 3, Diagram of Perceived Relationships.

The Diagram of Perceived Relationships (Figure 3) outlines perceived relationships in the functions of instructional leadership, TKES, and practices that support differentiated instruction. It also illustrates the conceptualization of the relationships between 6 of 10 dimensions of instructional leadership envisioned by Hallinger and Murphy (1985) and the TKES (GaDOE, 2012) expectations of teacher performance in differentiating instruction and examples of instructional leadership practices that, according to the literature, support teachers in overcoming obstacles towards implementation of differentiation (Carolan & Guinn, 2007; Hertberg-Davis & Brighton, 2006; Tomlinson, 2005).

Research Questions

In order to learn more about the instructional leadership practices used in support of teachers' approaches towards differentiation in the middle school classroom, the following research questions were examined:

1. What are instructional leadership practices toward differentiated instruction as perceived by middle school administrators and teachers?
2. Are there any significant differences in instructional leadership toward differentiated instruction as perceived by middle school administrators and teachers?
3. Are there any significant differences in school administrator and teacher perceived instructional leadership toward differentiated instruction among high, middle, and low achieving schools?

Study Design and Methodology

Gay, Mills, and Airasian (2009) offered a description of quantitative research as a process by which a researcher designs the study, answers questions, determines the method by which data are collected and analyzed statistically. In this study, a survey methodology was used with a

causal-comparative approach to determine if significant differences exist between school administrators' and teachers' perceptions of instructional leadership practices in support of teachers' implementation of differentiated instruction. A self-designed survey instrument was used to solicit the responses of the school administrators and teachers. A pilot study was conducted to test the validity and reliability of the instrument. Data collection was done on-line using the surveymonkey.com platform.

Population

Lezotte (1991) stated that the principal was not the sole leader in a school, but "the leader of leaders" (p. 3) and so all school leaders and teachers from 25 middle schools from a metropolitan school district were solicited to participate in the study. The potential survey population totaled 108 principals and assistant principals and over 1,499 teachers. Principals from 20 of the district's middle schools agreed to allow their schools to participate. Less the staff of the pilot study school and one other school that did not launch the questionnaire, the estimated survey population derived from the remaining 18 participating middle schools was comprised of 76 school administrators along with 1,149 classroom teachers. Participants answered an on-line survey consisting of two parts made up of a total of 27 closed-ended questions and took on average approximately 20 minutes to complete.

Instrumentation

The researcher employed an original researcher-designed survey based on elements from existing instruments [e.g. Hallinger's (1983) PIRMS and Stetson's (2007) Differentiated Instruction Self- Assessment Tool or (DISAT)]. The survey was intended to collect data on the following: (a) the self-perceptions of principals engaged in the role of an instructional leader supporting the implementation of differentiated instruction; and (b) teachers' perceptions of

instructional leadership practices relative to the implementation of differentiated instruction. The instrument reflected 6 of the 10 instructional leadership functions derived from Hallinger's (1983) PIMRS containing between 3 to 6 questions for each domain totaling 27 questions. Survey questions were constructed by adopting the context of questions from the PIMRS and adapting the wording of the questions to be reflective specifically of instructional leadership practices toward teacher implementation of differentiated instruction. Each item was rated by the participants using a Likert-type scale ranging from (1) never to (5) always. Demographic information was requested from the participants in Part One of both surveys. Additionally, survey data were used to examine if differences exist in the perceptions of administrators and teachers for instructional leadership practices in support of the implementation of differentiated instruction among schools of different achievement levels. In order to distinguish between high, moderate, and low-achieving schools, 2015 CCRPI performance ratings were used to determine a schools' achievement status. Georgia Milestone testing results from School Year 2015 accounted for over 65% of a school's CCRPI score.

Pilot

An external pilot survey was administered to a small group of judges comprised of school administrators and teachers who did not participate in the general survey. The pilot study was conducted with the support of a principal, four assistant principals and 22 teachers representative of all grade levels and subject areas at a middle school from a metropolitan Atlanta, Georgia school district involved in this study.

The following procedures were utilized with the pilot study data to test for the validity and reliability of the instrument:

Test for Validity. After obtaining the consent of the pilot survey judges (Appendix E), the proposed survey instruments were sent out for critique. Judges received separate surveys and were asked to make commentary on the instruments in the following areas: (a) Content – Do the contents reflect the purpose of the study? Are there any other items to be included or deemed unnecessary?; (b) Language – Is the language of the instruments appropriate, understandable, or ambiguous?; (c) Format – Is the format of the instruments appropriate for the intent of the study? Are there excesses in the number of items? Should an open-ended question be included versus other quantitative formats? The judges' commentary provided the basis for revision.

Test for Reliability. The revised survey instrument was again given to the judges to solicit actual responses to the items. The completed surveys were returned, and the data were entered into an Excel spreadsheet. Survey items appeared in columns on the worksheet, whereas the judges' responses were recorded in rows. Using the Cronbach Alpha method in IBM's (2015) Statistical Package for Social Sciences (SPSS), a reliability test for internal consistency was conducted utilizing an alpha value range from 0.00 to 1.0. The resulting alpha must be at 0.7 or close to being acceptable. In instances where an alpha of 0.7 was not obtained, a rotation analysis of each section was performed to identify items causing the inconsistency. The rotation analysis resulted in the deletion of items from the original questionnaire.

All revisions derived from the pilot study resulted in the more extensive survey being ready to be distributed to the administrators and teachers of the 19 participating middle schools.

Significance of the Study

Scholars have recommended future research examining principals' influences on sustaining differentiated instruction as a focus and priority in the classroom. This study may add to the knowledge of how to best support and develop teachers' commitment and expertise in

differentiating instruction over time (Hertberg-Davis & Brighton, 2006). Goddard et al. (2010), although in sum, reported principal support of teaching is vital to teachers' use of differentiated instruction (Carolan & Guinn, 2007; MacAdmis, 2001; Page, 2000; Petig, 2000; Quinn, 2002; Suppovitz et al., 2010; Tomlinson & Allan, 1997) and illustrated the need for school leaders' support. However, research does not demonstrate a statistically significant link between teachers' reports of principal support for instruction and school-wide norms centered on differentiated instruction. According to the authors, this lack of statistical significance constituted a gap in the literature to be addressed by future research.

As Hertberg-Davis (2009) noted:

> As systemic change reforms focus on differentiated instruction, future research on principals' influence on sustaining differentiated instruction as a focus and priority in the classroom would add to the knowledge of how best to support and develop teachers' commitment and expertise in differentiation over time. (p. 101)

Awareness of instructional leadership practices which facilitate the implementation of differentiated instruction can better enable leaders in buffering the challenges to implementation. School administrators with the knowledge of how to help teachers deal with the challenges to differentiation, through support and encouragement, are more likely to increase the implementation of differentiated instruction within their school norms of practice (De Neve et al., 2014; Smit & Humpert, 2012; Tomlinson, 2002).

Limitations of the Study

Antonakis et al. (2003) stressed the limitations imposed by the design itself in the questionnaire or format selected in conducting survey research. Creswell (2009) and Vogt (2007) both cautioned about sampling methods and size as other considerations that may impact

reliability and validity. However, the benefits of gathering the potential representativeness of a population make field survey studies useful to "find small amounts of information from a wider selection of people in the hopes of making a general claim" (Driscoll, 2011, p. 163).

This study was informed by the literature on methodological issues associated with survey research (Vogt, 2007). As described in Isaac and Michael (1995), along with Browne and Keeley (1998), these limitations may include:

1. findings limited by the reliability and validity of the instruments;
2. findings potentially constrained by the participants' honesty, understanding of the instruments, volunteerism, or rater bias resulting in measurement error;
3. findings may be subject to the limitations of the data collection approach; and
4. findings limited by the fact that the survey data collection methods do not provide for open responses from the participants.

In addition to considering the assertions of Issac and Michael (1997), Browne and Keely (1998), and Vogt (2007), there were other foreseeable limitations to this study. Only one school district in the State of Georgia was used, thereby limiting the scope of the study. The duties and responsibilities prescribed to school administrators in the State of Georgia may vary between other settings in other states and potentially imposes a threat to generalization. Participation in the survey may have been impacted by the timing of study in the context of the school district's calendar year of events. "Survey fatigue" also is real consideration given the number of surveys required by the state and or district to be taken by administrators and teachers during the school year (Backor, Golde, & Nie, 2007). Limitations imposed by the school district's institutional review board (IRB) on the data collection approach may have created delays in launching the survey. The number of potential participants may have been reduced by a lack of schools

participating or withdrawing from the study. Lastly, instructional goals vary from different leaders and their administrative teams. It is possible that participation in the study may have been hampered by school administrators' focus on primary goals other than differentiated instruction.

Despite these limitations, the researcher was confident that the study is rigorous and provides useful information to contribute to the literature.

Assumptions

The following assumptions were made while conducting this research. It was assumed that school administrators and teachers responded honestly to the questionnaire; the emphasis that school administrators place on the importance or effectiveness of differentiated instruction to meet the needs of the students may vary from school to school; and teachers participating in the study subscribed to the opinion of the benefits of differentiation as an instructional strategy.

Delimitations of the Study

The researcher recognized several delimitations involved in the design and method related to this study. In order to promote generalization, P-12 schools could well have been selected for the setting of this study. However, scholars stated that research into the insights of middle school administrators is limited (Gale & Bishop, 2014) and therefore supports the researcher's curiosity to learn more about the perceptions held by school leaders of their day-to-day practices as concerns support for a state mandated instructional approach. As to the choice to develop a self-design survey to answer the study's research questions, the exclusion of an open-ended questioning format for the closed-ended Likert-type scale responses in the survey was done to maintain a closer alignment to existing instruments used to rate school administrators instructional leadership practices. Although following a purer model of Hallinger's (1983) PIMRS may have increased the potential for validity, the decision to reduce the number of

domains was based on three factors: 1. to avoid overlaps in leadership practices; 2. to align the instrument more closely with the research questions and the expectations for teacher practice associated with TKES Standard 4; and 3. time required to complete the survey following considerations employed in similar dissertations. After this initial study, future research involving a mixed-methods approach towards answering this study's research questions may satisfy the option to include open-ended responses to a qualitative-based questionnaire.

Definition of Terms

Throughout Chapter 1 and the later chapters, several terms are defined to establish clarity. Operational definitions are used in instances where a standard definition is lacking. The terms necessary in understanding this study are defined as follows:

Classroom Diversity: Varying learning needs of students within typical classrooms relating to the culture, language, learning styles, learning disabilities, and gifted or talented attributes of students (Tomlinson et al., 1998).

Coordinates the Curriculum: An instructional leadership function made up of practices that involve school administrators engaged in indicating to staff individuals responsible for the coordination of the curriculum, monitoring the curriculum in the classroom to provide evidence of alignment with the school's objectives, utilizing student achievement data to inform curricular decisions, and actively reviewing curricular materials to ensure appropriateness in meeting both the learning needs of students and school goals (Hallinger & Murphy, 1987).

Communicates the School Goals: An instructional leadership function associated with leadership practices of school administrators that includes: communicating the mission of the school to all stakeholders, discussion of academic goals with staff and students, and makes reference to goals in making curricular decisions (Hallinger, 1982, 1983; Hallinger & Murphy,

1985). For the purpose of this study, the instructional leadership function of Communicates the School Goals will be expressed as a sub-scale on the self-designed survey.

Concept of Leadership: The concept of leadership is difficult to define (Yukl, 2006). Gutherie and Schuerman (2010) offered a three-part definition of leadership as:

1. being a process of motivating and influencing others to strive willingly towards achieving the organizational mission;
2. implementing coaching and facilitating skills to encourage employees to improve their work; and
3. improving the organization through change. However for this study, leadership may be conceptualized as a process that involves the exertion of influence, within the context of a group, upon the actions of followers involved in goal attainment (Northouse, 2004).

Data Team Process: Data-driven decision making conducted by classroom practitioners that follow a specific step-by-step process in examining student learning outcomes and applying instructional strategies to address perceived deficiencies. The strategies are then monitored through common assessments, and the decision to maintain current approaches or renew the cycle of the data team process is made by the team members. The data team process mirrors research design, methods, and analysis in conducting educational research (McNulty & Besser, 2011).

Defining the School Mission: One of three dimensions of Hallinger and Murphy's (1987) instructional leadership framework (ILF) that requires instructional leaders to exhibit the ability to maintain a clear vision of the school's goals while leading staff toward goal attainment, hallmarked by engaging staff with direct communication for their role in achieving objectives.

This dimension includes two instructional leadership functions: framing the school goals and communicates the school goals.

Developing the School Learning Climate Program: One of three dimensions of Hallinger and Murphy's (1987) ILF. Within this dimension of Developing the School Learning Climate Program, school administrators engage in practices associated with being highly visible to staff, creating a recognition system for student achievement, establishing clear standards, and participating in professional development (Hallinger & Murphy, 1987). Three of five key leadership functions are central to the construct of the survey instrument associated with this study: 1. protects instruction, 2. provides incentives for teachers, and 3. promotes professional development.

Differentiated Instruction (DI): A process that involves planning for instruction to match the learning needs, strengths, and interests of students, as well as adapting the content associated with the curriculum and the process by which students engage in the content (Tomlinson, 1999, 2000, 2001).

Differentiated Instruction Self-Assessment Tool (DISAT): A teacher's self-assessment instrument to assess the degree of teachers' implementation of differentiated instructional approaches in the classroom. Employs a Likert-type scale to generate a rating for each item included in the instrument (Stetson, 2007). Synthesized with items and a format derived from Hallinger's (1983) PIMRS to construct questions for the items of this study's researcher-designed survey instrument.

Domains of Leadership Practice: Instructional leadership functions of school administrators' specific to day-to-day operations, based on Hallinger (1982, 1983), that serve as

both the construct for the items of the questionnaire and sub-scales to be examined through the survey instrument.

Educational Change: Efforts to adapt to changing paradigms and reforms within education arising from the origination of new concepts and requirements (Fullan, 1982, 1991; Waks, 2007).

Effective Schools Research: A movement of the early 1980s involving research into the effective practices for teaching and learning of high achieving schools. Consequently, the scholarly works of the Effective Schools Movement became the framework of the school improvement process of the early 1990's. Early researchers included Glickman (1985), Pajak and Glickman (1989), and Schon (1988), who defined the role of the instructional leader to be one of helping teachers towards obtaining goals.

Instructional Leadership: A simple definition of instructional leadership is the approach towards leadership emphasizing teacher behaviors that directly impact student learning (Leithwood & Jantzi, 1999). However, a definition more closely aligned to this study, from Hallinger and Murphy (1985), refers to the influence of instructional leadership upon teaching and learning through actions associated with identifying the school's mission and vision, motivating staff to meet goals, and coordinate classroom-based approaches toward school improvement.

Instructional Leadership Framework: Hallinger and Murphy (1985) conceived of a framework of instructional leadership comprised of three dimensions that include: 1. defining the school mission, 2. managing the instructional program, and 3. promoting a school climate program. The authors went on to further delineate this concept into 10 functions of instructional

leadership which serve as the background for the domains of the survey instrument designed for this study.

Instructional Leadership Functions: Hallinger and Murphy (1985) delineated their framework of instructional leadership into 10 instructional leadership functions. Six functions were adapted from the PIMRS (Hallinger, 1983) instrument for this study and are as follows: 1. communicating the school's goals; 2. supervising and evaluating instruction; 3. monitoring student progress; 4. protecting instructional time; 5. providing incentives for teachers, and 6. providing professional development.

Leadership Practice (leadership behavior): It is the leadership implementation process that constitutes the interactions of leaders, followers, and their school's situation or context in the execution of a particular administrative task (Spillane et al., 2004).

Manages the Instructional Program: One of three dimensions of Hallinger and Murphy's (1985) ILF. Within this aspect of the instructional framework, school administrators are engaged in working with teachers on the evaluation of teaching, professional development, and the implementation of curriculum and instruction (Hallinger & Murphy, 1987). This dimension entails instructional leadership functions for coordinating curriculum, supervision and evaluation of teaching, and for the monitoring of student progress. The Manages the Instructional Program is central to the research design of the study and the survey instrument's design toward answering the research questions.

Monitors Student Progress: An instructional leadership function in which school administrators engage faculty in discussions based on weaknesses and strengths associated with student academic data and informs all stakeholders of student progress on standardized

assessments (Hallinger & Murphy, 1985). Serves as one of the domains of leadership relevant to the developing of the survey instrument and in answering research questions.

Perception: Defined as the process by which people "extract meaningful information from physical stimuli" (Sainn & Ugwuegbu, 1980, p. 90). The authors, according to Choy and Cheah (2009), listed three key points when defining perception. Key to this research is the notion that perception is determined by a person's experiences, intentions, and needs.

Population: It is the group of elements, whether individuals, objects, or events, that conform to specific criteria or characteristics to which the researcher would like the findings of a study to be generalized (Fraenkel & Wallen, 2006; Fricker, 2012; McMillan, 1996).

Principal Instructional Management Rating Scale (PIMRS): A survey instrument originally designed by Phillip Hallinger (1982) to provide a profile of a principal's instructional leadership across 10 functions of leadership to measure the frequency of instructional leadership practices (Hallinger 1982, 1983).

Providing Professional Development: An instructional leadership function in which school administrators provide for a process of improving the skills and competencies of educators needed to improve teaching and student learning outcomes (Hassel, 1999) through training and education. Hallinger and Murphy (1987) offered that professional development focused on instruction be aligned with the school's goals, have active participation by leadership alongside staff, and incorporate teachers' suggestions into the planning of professional development. Serves as one of the domains of leadership relevant to the developing of the survey instrument and in answering research questions.

Protecting Instructional Time: An instructional leadership function in which school administrators actively ensure that instructional time is free of interruption from non-

academically related activities and maximized by teachers for the purposes of focusing on issues related to curriculum and instruction (Hallinger & Murphy, 1987). It serves as one of the domains of leadership relevant to the developing of the survey instrument and in answering research questions.

Providing Incentives for Teachers: An instructional leadership function in which school administrators develop and sustain a system for recognition of teachers for performance, contribution, and reward (Hallinger & Murphy, 1987). It serves as one of the domains of leadership relevant to the developing of the survey instrument and in answering research questions.

School Administrator: He/she is an educational leader who promotes student success through the facilitation of the development, communication, and assurance that the vision of learning is shared with all stakeholders (Interstate School Leaders Licensure Consortium, Standard 1).

School Leadership: It is the daily enacting of leadership routines, functions, and structures (Hallinger & Heck, 1998).

Social Constructivist Learning Theory: It refers to Vygotsky's (1978) developmental theory in which the individual student must be studied within a particular social and cultural context and that such situatedness is necessary for the development of higher order functions cultivated in the social interaction and is fundamental to cognition (Subban, 2006).

Supervising and Evaluating Instruction: It is an instructional leadership function in which school administrators ensure that teachers' classroom priorities are aligned with school goals and conduct classroom observations to provide teachers with feedback on instructional practices

(Hallinger & Murphy, 1987). It serves as one of the domains of leadership relevant to the development of the survey instrument and in answering research questions.

Target population: It is the population including all demographical characteristics to which the researcher desires to generalize and draw inferences from (Fraenkel & Wallen, 2006; Fricker, 2012: Lumsford & Rae-Lumsford, 1995).

Teacher Effectiveness: Teacher effectiveness "usually refers to teachers' abilities to positively influence student outcomes" (Harris, Ingle, & Rutledge, 2014, p. #). It is the teacher's ability to provide instruction to different students at various levels of ability while incorporating instructional goals and assessment of the effective learning styles of students (Vogt, 1984).

Teacher Keys Effectiveness System (TKES): The Teacher Keys Effectiveness System, predicated on the work of Stronge (2011), was adopted by the GaDOE 2012 to be fully implemented across the State of Georgia in 2014. TKES is comprised of 10 performance standards of which differentiated instruction (IE Standard 4) is recognized by the GaDOE as key to effective teaching and learning for ever increasing levels of classroom diversity (GaDOE, 2014).

Transitional Change: Transitional change is most common, improves the current state through minor to gradual changes in people, structures, procedures, and technology (Gilley, Gilley, & McMillan, 2009).

Transformational Change: Transformational change is a fundamental, radical shift that rejects current paradigms, and requires leadership driven modifications of culture, formulation of drastically different strategy, or demands for conformity from followers (Kuhn, 1970).

Transformational Leadership: Transformational leadership can be defined as a leadership approach that results in significant changes in the individuals and structures of an organization toward higher levels of motivation and success (Bass, 1998; Burns, 1978).

Vision: It is the school leaders' articulation of a core of ideas communicated to the school's stakeholders surrounding the instructional direction and purpose of the organization (McEwan, 2003).

Summary

The GaDOE (2012) has sought to impact classroom outcomes directly through accountability-based policy requiring school leadership to implement evaluation instruments designed for building teacher effectiveness. Through the TKES evaluation instrument, school administration is held accountable for the implementation of strategies for differentiated instruction as part of the classroom practices of teachers in response to increasing classroom diversity comprised of a spectrum of learners including students with learning disabilities to that of the gifted and talented student.

Despite the knowledge that differentiated instruction is effective in addressing the diverse learning needs of students, researchers on the topic of the practice of differentiated instruction have reported that teachers frequently displayed an unwillingness to employ differentiation in their classroom practices. School administrators, to meet expectations required by state mandates for teachers' implementation of differentiated learning, must frequently enact a model of instructional leadership practice that removes challenges or obstacles that impede teachers' implementation of differentiated instruction, dispel misconceptions, and promotes a willingness to employ differentiation in their classroom practices.

The purpose of this study was to identify, from the perspectives of administrators and teachers, functions of instructional leadership practice used by school administrators in support of teachers' approaches towards differentiation in the middle school classroom. This study has merit because it provides school administrators with the knowledge of how to help teachers deal with the challenges associated with the implementation of differentiated instruction within their school norms through instructional leaderships' administrative support.

Organization of the Dissertation

This chapter comprises an overview of the study, including an introduction to the topic, statement of the problem, the purpose of the study, the significance of the study, the research questions, and definitions of terms associated with the study. Chapter 2 will be a review of the literature used to inform this study. Chapter 3 will offer detailed information about the research design and methodology, including a description of the participants, instruments, data collection and analysis, and a summation. Chapter 4 will be a presentation of the research findings. Chapter 5 will be a report that entails a discussion on the conclusions, recommendations, and implications drawn from the study.

CHAPTER 2

LITERATURE REVIEW

This study of differentiated instruction explores, from the perspectives of school administrators and teachers, functions of instructional leadership practices used in support of teachers' approaches towards differentiated instruction. The review of the literature will examine the theoretical base for differentiated instruction along with empirical studies that provide insights into the subject. Although differentiation is recognized by scholars as being an effective teaching strategy, research indicated that teachers infrequently differentiated instruction in the classroom due to challenges to implementation. Researchers De Neve, Devos, and Tuytens (2014), Hertberg-Davis and Brighton (2006), Smit and Humpert (2012), and Tomlinson (2002), purported that barriers towards teachers' implementation of differentiated instructional strategies could be offset by supportive instructional leadership practices across multiple leadership functions of the school principal. Marsh (2000), Pellicer and Anderson (1995), Smylie, Conley, and Marks (2002), and Spillane and Kenney (2012) recognized, that due to current educational reform trends in accountability, the principal is not the sole instructional leader within schools. Therefore, any analysis of functions of instructional leadership practices in support of teachers' approaches towards differentiated instruction should include the perceptions of both school principals and administrators, such as assistant principals, along with the teachers lead by them. By contrasting the views of instructional leadership practices held by school administrators with that of teachers, this study may contribute to an understanding as to what functions of instructional leadership practices are employed in support of teachers' commitment to delivering differentiated instructional strategies intended to meet the diverse learning needs of students in the 21st-century middle school classroom.

In this chapter, an examination of the literature strands is reviewed in four sections. In the first section, the historical background and educational reform impacting this study is discussed in relationship to the teaching strategy of differentiated instruction. Next, the second section is comprised of the main literature strands: (a) a discussion of educational change; (b) an examination of the efficacy of differentiated instruction based on teachers limited implementation of differentiation; and (c) a review of instructional leadership practices impacting differentiation, relative to the resurgence of the concept of instructional leadership due to the accountability policies of the last three decades of educational reform. Section three is a review of recent research on principals' and teachers' perceptions about teaching and learning. Finally, in section four, research involving school ranking by student academic achievement is included.

Literature Search Procedures

The literature review for this study was conducted in several phases. The first phase involved an examination of published dissertations based upon applicability to this study. The second phase consisted mainly of searches related to keywords associated with this study utilizing on-line databases that included ProQuest, ERIC, JSTROR, along with the search engine Google Scholar. Online print editions from peer-reviewed journals were also used. Keywords used in identifying studies and articles about differentiation were conducted by combining terms such as "educational change", "differentiated instruction", "effectiveness of differentiation", and "teachers' perceptions for the implementation of differentiated instruction". Likewise, a keyword search was conducted for "instructional leadership", "principals' instructional leadership practice," and "principal" or "teacher" with "perception of instructional leadership". Finally, a search was conducted for "instruments" and "measuring the impact of instructional leadership".

The third phase involved an overview of references derived from books, dissertations, and journal articles. The literature search procedure brought about a review of 100 dissertations, books, referenced book chapters, and journal articles.

Background

This study of planning for differentiation is rooted in the educational reforms of the post-No Child Left Behind (NCLB) (2002) era of school accountability. As part of the Elementary and Secondary Education Act (ESEA), NCLB was intended to improve public education through increased measures of accountability and the enforcement of higher standards for teaching and learning. The United States Congress declined to reauthorize NCLB in 2007, due in large part to criticisms from educators combined with increases in the number of schools failing to meet the standards established by the targets of Adequate Yearly Progress (AYP). The American Recovery and Reinvestment Act of 2009's (ARRA) incentive program, Race to the Top (USDOE, 2014), encouraged states to apply for funds to engage in comprehensive educational innovation and reform. Four areas specifically targeted for change were: 1. standards and assessments; 2. data systems to support instruction; 3. persistently low-achieving schools; and 4. teaching and leadership. In 2010, the administration of President Barack Obama proposed changes to the NCLB pass-fail system by requiring an accountability system that focused on individual student growth to replace AYP. In 2010, the United States Department of Education (USDOE) announced that the federal government would grant waivers to states willing to adopt Career and College Ready Performance Index (CCRPI) standards for academics that would also require the states to establish new measures for evaluating teacher and principal performance (Century Foundation, 2015). The results that impact this study include the adoption of Common Core State Standards (CCSS), in English Language Arts and Mathematics, by the State of

Georgia, along with 45 out of the other 50 states. Georgia also acted to align increases towards rigorous curricula to that of revised standards for effective teaching and leadership. As reported by Ruffini, Makkonen, Tejawani, and Diaz (2014), along with Dodson (2015), more than 30 states, since 2009, had overhauled teaching evaluation instruments to comply with Federal guidelines associated ARRA's (2009) incentive program Race to the Top (USDOE, 2014).

Georgia's Educational Reform and Differentiation

The Obama administration in September of 2011 granted the State of Georgia a waiver from of the NCLB law in exchange for state-developed plans of the type of reforms sought by the Federal government's Race to the Top grant (USDOE, 2014). Georgia's waiver consisted of a comprehensive platform for school improvement emphasizing school accountability to meet specific criterion associated with content mastery and progress as well as teacher effectiveness (USDOE, 2014). According to the Georgia Department of Education (GaDOE, 2010), the adoption of the CCSS would improve teaching and consequently better prepare students for success in college or work. Furthermore, CCSS, as seen by the GaDOE, would serve as an improvement upon the already existing Georgia Performance Standards (GPS) and allow for meaningful assessments of the academic achievement and readiness of Georgia's students in comparison with students from other states.

Over the past 30 years, the GaDOE has sought to impact classroom outcomes directly through accountability-based policy requiring school leadership to implement evaluation instruments designed for building teacher effectiveness (Eady & Zepeda, 2007). The Teacher Keys Effectiveness System (TKES), predicated on the work of Stronge (2011), was adopted in 2012 to be fully implemented across the state in 2014. The TKES is comprised of 10 performance standards. Standard 4, Differentiated Instruction, is recognized by the GaDOE as

key to effective teaching and learning to meet the needs of ever increasing levels of classroom diversity (GaDOE, 2012). Georgia is not alone in its emphasis on differentiated instruction as being a skill set of an effective teacher. The researcher conducted a state-by-state review of teaching evaluation instruments and performance standards. The review revealed that, while only 22 states, or 44% of the states, referred directly to differentiation, 23 others or 46% of states' teaching standards reflected a reference to concepts associated with the theory of differentiated instruction. Therefore, 90% of all states related some aspect of differentiation to effective teacher performance or practices (see Appendix A).

The following factors have contributed to the impetus for this study:

1. the importance that the GaDOE has placed on differentiated instruction as an effective teaching strategy to reach the diverse learning needs of students;
2. how this mandate manifests itself at the local school level;
3. the reflection of this emphasis on differentiation in the teacher evaluation instrument and the need for school leadership to train, provide professional development, and support staffs with meaningful resources;
4. the potential adverse impact of a lack of administrative support upon teachers willingness to employ differentiation in their classroom practices (De Neve et al., 2014; Goddard et al., 2010; Hertberg-Davis, 2006; Smit & Humpert, 2012; Tomlinson, 2002; Van Tassel-Baska & Stambaugh, 2005); and
5. challenges to the practice of instructional leadership of school administrators responsible for teachers' implementation of differentiated teaching strategies in the classroom.

Review of the Literature Strands

Educational Change

Educational change is described by the authors Fullan (1982, 1991) and Waks (2007) as efforts to adapt to changing paradigms and reforms within education arising from the origination of new concepts and requirements. Recent decades have seen an increasing emphasis placed on change as a critical for organizational success (Drucker, 1999; Gilley, Gilley & McMillan, 2009). Other authors such as Speck (1996) emphasized the need for an understanding of "the dynamics of change and implications of change" as a "powerful means for the successful implementation of educational innovations" (p. 71).

According to scholarly works such as Kanter, Stein, and Jick (1992), leaders may function as change agents or those responsible for change strategies by creating a vision of change, identifying the need for change, and implementing change gradually or radically.

Transitional Change

Gilley et al. (2009) defined change "when viewed from an evolutionary perspective" (p. 76) and transitional change as being the most common. The authors referred to transitional change as improving the current state of an organization "through minor, gradual changes in people, structures, procedures, and technology" (p. 76). Greaves, Hayes, Wilson, Gielniak, and Peterson (2010) offered that most educational changes have historically been first order changes. The authors cited Cuban (1988) who defined first order change as "reforms that assume existing organizational goals and structures were adequate" and "what needs to be done is to correct deficiencies in policy and practice" (p. 6). Cuban purported that first order changes often result in improving existing practices, but accomplish very little in altering the basic structures such as scheduling, the physical school plant, or the organization of teachers and students.

Transformational Change

Fullan (2005) stated that change is also often characterized as secondary. Second order change (Leithwood, Begley, Cousins, 1994) is a fundamental shift from the status quo signaling a transformation in organizational philosophies, methods, and structures (Greaves et al., 2010). Research conducted by Collins and Halverson (2009), Cunningham (2009), Prensky (2010), and West (2012) found that second order change, although often met with resistance, had a profound effect on teaching and learning. Kuhn (1970) described transformational change as involving radical shifts in organizationally held paradigms often involving "leadership driven modifications of culture, formulation of drastically different strategy, or demands for conformity" (Gilley et al., 2009, p. 76). However, as transformational change can be disruptive to an organization, Denning (2005) noted the outcomes of transformational changes are commonly identified as being successful.

Transformational Leadership and Implementing Innovations

Stewart (2006) delved into the empirical literature on the development of transformational leadership. The author sifted through works of scholars (Avolio, 1999; Bass, 1998; Burns, 2003; Leithwood, 1992) who voiced contrasting opinions to the effectiveness of this model of leadership in implementing change. Stewart concluded that transformational leadership "will continue to evolve in order to adequately respond to the changing needs of school in the context of educational accountability and school reform" (p. 24).

Transformational leadership (Bass, 1998; Burns, 1978, 2003) can be defined as a leadership approach resulting in significant changes in the individuals and structures of an organization toward higher levels of motivation and success. Stewart (2006) purported transformational leadership to be "the primary model reflecting the secondary change directed at

changing an organization's normative structure" (p. 8). Referring to transformational leadership practices, Stewart wrote that "vision building, individual support, intellectual stimulation, modeling, and holding high expectations" for the work of the followers were helpful in fostering organizational change (p. 18). Accordingly, Abu-Tineh, Khasawneh, and Omary (2009) explained,

> transformational leadership has the potential for building a high level of commitment in teachers in relation to the complex and uncertain nature of the school reform agenda as well as fostering the capacities teachers need to respond positively to change. (p. 266)

Betz (2000) wrote that practices associated with transformational leadership are a key element in the implementation of innovations in education. Abu-Tineh et al. (2009) framed their research around a review of the empirical literature on leadership and purported to have shown that transformational leadership is "positively associated with principals' effectiveness at implementing a reform agenda" (p. 266). According to Stocklin (2010), "transformational leadership may be an effective leadership approach in building capacity" (p. 76). Aligned with the motivational component of transformational leadership practice, Fullan (2005) described building capacity in an organization as involving the "developing the collective ability-dispositions, skills, knowledge, motivation, and resources-to act together to bring about positive change" (p. 4). Nine years later, Fullan (2014) offered that building professional capacity in association with innovations should be considered a true driver for change in public education.

It is important to note that contradicting points of view towards transformational leadership have surfaced over the past four decades (Avolio, 1999; Bass, 1998; Burns, 2003; Leithwood, 1992). One such study by Robinson, Lloyd, and Rowe (2008) compared the impact of instructional and transformational leadership styles on teaching and learning. The authors'

conducted a meta-analysis of the literature on school leadership. The authors' indicated that the average effect of instructional leadership on student outcomes was 3 to 4 times that of the effect of transformational leadership. Robinson et al. conducted a second meta-analysis and produced a set of common leadership practices or dimensions from the literature on instructional and transformational leadership. These practices included: establishing goals, strategically allocating resources, evaluating teaching and the curriculum, and promoting teacher learning. Most notably, the authors' findings, controlling for the effect of leadership practice on student outcomes, produced a strong average effect for the practice dimension of promoting and participating in teacher learning and development. The outcome of the study by Robinson et al. appears to support Stewart's (2006) assumptions about the purpose of instructional leadership practices relative to changing teachers' practices and improvements in student learning outcomes. This aspect of the review of this literature strand clearly indicates that what distinguishes one model of leadership over another is the intended scope of the required change (Stewart, 2006).

Implications for Educational Change Relative to this Study

A brief overview of literature associated with educational change and related types of change established a broad context for this study of planning for differentiated instruction. When considering the expectations of educational reforms, the implications of this strand of literature reveals the need for an understanding of the dynamics of transitional and transformational change in relationship to successfully implementing educational innovations (Speck, 1998). Most relevant to this research are the scholars' findings that specific leadership approaches such as transformational leadership practices are perceived to be conducive towards implementing profound organizational change (Bass, 1998; Burns, 1978, 2003). Contemporary research findings indicated that a transformational leadership approach was instrumental in altering the

dispositions of individuals, organizational structures, and building capacity within organizations to bring about positive change (Abu-Tineh et al., 2009; Stewart, 2006). Additional findings indicated that contradictory views existed that favored instructional leadership approaches towards changing teaching and learning practices over transformational leadership (Avolio, 1999; Bass, 1998; Burns, 2003; Leithwood, 1992; Robinson et al., 2008). Within this construct, the literature purported that instructional leadership practices seek to change teachers' practices and in improving student learning outcomes. Whereas, transformational leadership seeks to change whole individuals, systems, and structures of organization in order to meet performance goals (Stewart, 2006).

Ultimately, according to Fullan (2001), teachers are the single-most principal school-based actor in determining the results of the change process. Tai (2013) asserted that teachers' attitudes towards change can influence individual behaviors and responses. Despite the approaches of leadership taken in the course of educational change, the literature generated by Fullan (1982, 2001, 2005, 2014), Fullan and Stiegerlbauer (1991), and Hermann, Tondeur, van Braak, Valcke (2012) argued for the importance to take into consideration teachers' attitudes and perceptions toward change. Works by Fullan (1999, 2001) and Kin and Kareem (2016) offered that a critical factor in the success of innovations such as differentiated instruction may well hinge on teachers' perceptions of the change agents involved in implementing educational initiatives. Fullan (1999) suggested that planning for educational change need include consideration for teachers' experience, subject taught, and attitudes affected by age, gender, and ethnicity as being determining factors in the degrees of implementation. Fullan (1999) also stated that "educational change depends on what teachers think and do" (p. 117). Therefore, an understanding for educational change, leadership approaches relative to enacting change, and

considerations for the impact of educational reform upon teachers' attitudes toward change can be seen as imperative in answering the research questions of this study.

Differentiated Instruction

According to Chapman and King (2005), O'Meara (2010), and Tomlinson, (1999), the concept of differentiated instruction emerged from the need for teachers to deliver instruction that was differentiated to meet the diverse learning needs of students in the general classroom setting (Bender, 2012). The teaching practice of differentiated instruction has its origins in the work of Gardner (1983), who identified eight intelligences in children as being the independent yet interacting cognitive capabilities of children and serves as a critical function that contributes to how teachers view learning (Gardner & Moran, 2006). Gardner's theory of multiple intelligence is comprised of the following abilities:

1. verbal-linguistic or capacity to understand spoken and written language;
2. logical-mathematical or the ability to use logic and numerical operations, patterns, and realize the interconnectivity between separate sources of information;
3. musical or the ability to understand and apply the principles of music;
4. spatial or the ability to orient, visualize, and manipulate objects in three-dimensional space;
5. body-kinesthetic or the ability coordinate physical movements;
6. naturalistic or the ability to distinguish and categorize objects or phenomena in nature;
7. interpersonal or the ability to interact with others; and
8. intrapersonal or the ability to interpret, explain and use thoughts, emotions, preferences, perceptions, and interests. (Bender, 2012)

Bender (2012), citing the writings of Sousa and Tomlinson (2011), Tomlinson (2011), and Tomlinson, Brimjon, and Navarez (2008) further noted that,

> while the multiple intelligences construct has served a crucial function in the development of the instructional approach of differentiation, educators today look to a wider variety of learning styles and learning preferences than are typically presented within multiple intelligences theory. (p. 7)

Tomlinson (1999) "described the diverse learning needs of students regarding the various abilities which Gardner (1983) referred to as intelligence" (Bender, 2012, p. 3). Tomlinson incorporated a broad range of studies including instructional strategies derived from learning and brain-compatible research (Gardner & Moran, 2006; Goleman, 2006; Vygotsky, 1978) into her conceptualization of differentiated instruction. Tomlinson's work encouraged teachers to know their students' learning abilities, academic performance, and learning styles as well as learning preferences in tailoring instruction efforts to meet the distinctive learning needs of students.

Tomlinson (1999) purported that teachers should differentiate learning across three areas related to mastering content. The first of these areas is content or variations in what is taught in the classroom regarding presentation, modeling, and student engagement. The second is process or how the content is mastered by students through instructional strategies and supports that best align with the learning needs of students. The third area is product or how the knowledge is articulated by students and assessed by teachers. Aspects of student choice of how content mastery would be displayed and multiple summative activities are commonly associated with Tomlinson's notion of product. The learning environment and alteration of the physical classroom setting to accommodate particular approaches toward differentiated instructional have emerged as a fourth dimension to Tomlinson's original conception (Hunt & Seney, 2001).

Tomlinson (2005) defined differentiated learning as "a philosophy of teaching that is based on the premise that students learn best when their teachers accommodate for the differences in their readiness levels, interests, and learning profiles" (Subban, 2006, p. 940). Subban (2006) stated that the working definition provided by Tomlinson is reflective of Vygotsky's (1978) socio-cultural theory wherein the primary tenant resides in the social interactional relationship that occurs between teachers and students. Subban also maintained that Tomlinson's definition of differentiation aligned to Vygotsky's notions for the role and impact of the teacher upon the student as the authority through Tomlinson's (2004b) vision of a teacher as a professional who guides students through the use appropriate techniques toward their fullest potential within the learning context.

Additionally, Subban (2006) asserted that differentiated instruction sees learning experiences as "social and collaborative with the responsibility of what happens in the classroom first to the teacher" (p. 940) and referred to the works of Tomlinson (2000b, 2005) as noting that if teachers willingly use the philosophy of differentiated instruction in the classroom they are exercising an option for a more efficient practice that is responsive to the needs of diverse learners. Robinson et al. (2014) stated that although the definition of differentiated instruction differed between and among users, the goal of reaching all students with regards to learning differences was essential the same. Levy (2008) offered that the focus of differentiated instruction was to make sure that all students reached the same academic objectives and that the process of obtaining these goals together was unique for each student given the teacher's strategic applications of differentiation towards these ends.

Efficacy of Differentiated Instruction

Scholars have reflected upon the effectiveness of differentiated instruction to meet the diverse learning needs of students. Tomlinson et al. (2003) proposed that effective differentiated instruction responds to learner readiness, interest, and type. According to the authors, an effective differentiated instruction is proactive rather than reactive, employs the use of flexible grouping, varies the materials used by individual students or small groups, varies the pacing of teaching to address learner needs, is knowledge-centered, and is learner-centered. Subban (2006), referring to the works of Tomlinson (2001a, 2001b, 2004b, and 2005) stated that differentiated instruction "presents an effective means to address learner variance" (p. 940) through brain-based research that is supported by the theoretical underpinnings of multiple intelligences and various learning styles present in contemporary classrooms. Lewis and Bates (2005) conducted a study of elementary teachers who practiced an undifferentiated approach resulting in students scoring a proficiency rating of 79% on an end-of-year state required assessment. The authors discovered that after five years of teachers using differentiated instructional approaches in their classroom practice had produced an increase of 16% in students' proficiency. Fisher, Frey, and Williams (2003), who conducted a 5-year long study of differentiated instruction, produced documentation of increases in high school students' grade level reading levels from 5.9 to increase to 8.2. In a case study, McAdamis (2001), who researched low-scoring math students in the Rockwood School District in the state of Missouri, found students who received differentiated instruction demonstrated significant improvement in test scores.

Huebner (2010) conducted a synthesis of the research on differentiated instruction in mixed-ability classrooms. The author stated that a growing body of research had shown positive

findings that supported the impact of differentiation in mixed-ability classrooms (McQuarrie, McRae, & Stack-Cutler, 2008; Rock, Gregg, Ellis, & Gable, 2008). Collectively, this research provided evidence for the effectiveness of differentiated instruction to benefit students with learning disabilities when compared to students in general education. Huebner cited the work of Tieso (2005), who researched the effect of differentiation on high-ability math students, found that between pre-and-post assessments students who were taught within the context of a differentiated curriculum, resources, and grouping out-performed students who received undifferentiated instruction in a whole-group setting. Tieso provided a conclusion that revision and differentiating curriculum, in concert with grouping strategies, may significantly improve students' achievement in the area of math further noting a positive impact on gifted students.

Huebner's (2010) review also included the work of Lawrence-Brown (2004), whose work focused on students with a range of abilities that included gifted to serve and confirmed that differentiated instruction could be used to provide an appropriate education for students in mixed-ability or inclusive classrooms. By adapting curriculum to meet the needs of students' individual educational plans (IEP), Lawrence-Brown stated that students' IEP goals could be fulfilled through the use of manipulatives, visual and audio aids while enriching the curriculum for the gifted students. Finally, Huebner, building upon the work of Baumgartner, Lipowski, and Rush's (2003) study of students enrolled in a reading program in the elementary and middle school setting, reported improvements in students' reading abilities that were taught using the differentiated instructional strategies of varied reading text, grouping, and choice.

Valiande, Kyriakides, and Koutselini (2011) investigated the impact of differentiated instruction on mixed-ability student achievement. An experimental group received systematically differentiated instruction and was compared to a group that did not. The authors found through

regression analysis in between and among groups that positive changes in students' achievement provided evidence of differentiation being "considered as an effective theory of learning in mixed ability classrooms" (p. 15). Based on the evidence derived from their research, the authors further stipulated that differentiated instruction had proven to be effective in promoting equity by providing all students with opportunity to make improvement.

Trends in research topics on the effectiveness of differentiated instruction upon student learning outcomes varied across a continuum that included: learning style, learning profiles, closing the achievement gap, longitudinal studies, experimental research designs, and dissertations. Sullivan (1996) conducted a meta-analysis of experimental research based on Dunn and Dunn's (1978) model of learning styles and concluded that improved student achievement could result from flexible teaching practices that addressed students' learning styles. Sternberg (1997) reported that when the instruction is matched to students' learning preferences significantly better performances have been found to exist over groups of students whose instruction had not been so aligned. Similar findings were noted by Sternberg, Torff, and Grigorenko (1998) where students had received instruction in learning-preferred models achieved at higher levels of achievement over those students not provided with the same consideration.

The impact of differentiation achievement gap between low and high achieving students has been examined Beecher and Sweeny (2008) whose findings included a narrowing of the achievement occurred in a case study set in an elementary school setting. The authors reported that the achievement gap in reading, writing, and math had dramatically closed between minority students with low socio-economic backgrounds and white students as a result of differentiated instruction being provided for all students. Sullivan (1996) reported a similar impact on the

achievement gains across cultural groups as a result of differentiated instruction and again with Tieso (2002), who found increases in pre and posttest results occurred amid socioeconomic and achievement levels for students taught in adequately differentiated classroom settings. Experimental research designs in examining the effects of differentiated instruction on student achievement in between and among groups of students were revealed by the work of Brighton, Hertberg, Moon, Tomlinson, and Callahan (2005). The authors conducted a study of differentiated middle school classrooms and reported statistically significant learning outcomes between a treatment and a control group. Tomlinson, Brimijon, and Narvarez (2008) conducted a longitudinal study of both an element and high schools and found positive achievement gains for students from all ranges of performance levels and across content areas as a result of differentiated instruction.

Finally, dissertations reflect a degree of doctoral student interest for the topic of effective differentiated instructional methodology and its impact on student achievement. Rasmussen (2006) conducted research on high school students receiving a greater degree of differentiation compared to a group of students with less differentiated instruction and found the group provided with the higher levels of differentiation outperformed their counterparts on the American College Test (ACT) in math, English Language Arts, and reading. Ferrier (2007) conducted a quasi-experimental study of elementary students to determine the impact of differentiation on achievement and found statistically through an Analysis of Covariance that students receiving differentiated instruction scored significantly higher than students served in traditional settings.

Challenges to Implementing Differentiated Instruction

Subban (2006), his position reflecting the works of Tomlinson (1999, 2000b), described the challenge of differentiated instruction for educators regarding differentiation forcing

"teachers to shift their thinking from completing the curriculum, and compels them to cater to individual student needs" (p. 940). Challenges to teachers' implementation of differentiated instruction are prevalent in the literature. An early work by Tomlinson (1995) revealed that teachers being directed by district policy to implement differentiated instruction elicited dissent and impacted negatively on teachers' sense of self-efficacy. The author described additional barriers to implementation as including teaching staffs' perception that differentiation was a passing fad, generated concerns of time involved in planning differentiated lessons, student performance on standardized tests, and classroom management as a result of employing differentiated instructional approaches to teaching. Five years later, Tomlinson (2000a) purported that teachers and school leaders, who stated a belief that variances existed in student learners, reflected feelings that recent demands for standards-based instruction posed an impediment and discouraged implementation. Holloway (2000) cited research that revealed the implementation of differentiated instruction placed new requirements on teachers' skills related to adapting content to meet the needs of individual students within the context of a diverse group.

In research conducted between 2005 and 2008, McTighe and Brown (2005), Rock et al. (2008), Tomlinson (2005), Van Tassel-Baska, and Stambaugh (2005), Wormeli (2005) expanded upon Tomlinson's (2000a) and Holloway's (2000) research that conditions created by standards-based instructional reforms and teachers' lack of preparedness to adapt content were acting as impediments toward meeting the needs of diverse learners. McTighe and Brown (2005) found teachers felt unable to differentiate instruction due in large part to be bound by the rigidity of national and state-required standards. Tomlinson's (2005) research believed that differentiation posed an ethical challenge. The subjects in Tomlinson's study relayed a hesitancy to differentiate

instruction due to a feeling that grading would be inequitable if students were not doing the same work. Van Tassel-Baska and Stambaugh (2005) purported, among several reasons, that the primary cause for the lack of differentiated instruction in the classroom stemmed from a lack of the necessary content knowledge needed to extend and differentiate content area curriculum to cater to diverse learners. The authors further stated that a lack of differentiated instruction occurred due to a deficit in teachers' classroom management skills necessary to facilitate differentiation and a disbelief held by some teachers that learning variances exist in students.

Rock et al. (2008) and Wormeli (2005) produced similar findings to Van Tassel-Baska and Stambaugh (2005) and uncovered misconceptions held by teachers for differentiated instruction. The authors reported that teachers believed that students would be unprepared for standardized tests due to differentiating instruction. The authors indicated that teachers' misconceptions led to the notion that differentiation created an unfair workload and grading practices for students. The authors further offered that teachers believed that students receiving differentiated instruction would not be able to compete with other students taught under traditional approaches. Lastly, the authors noted that the most pervasive notion held by teachers was that there was only one way to differentiate instruction.

Within this same period of research conducted between 2005 and 2008, Nunley (2006) reported findings on obstacles to implementing differentiated instruction drawn from teachers' personal beliefs for what they perceived were the challenges to delivering differentiation in the classroom. Nunley's interviews revealed that teachers appeared resistant to change, lacked the knowledge and training to implement approaches towards differentiation and that logistical constraints of time, resources, curriculum/grading were impediments towards teachers' willingness to differentiate. The author noted that teachers preferred the method of whole group

instruction over differentiating lessons and that perceived challenges to classroom management generated feelings that teachers would lose control over their students' behaviors while delivering differentiated instruction. Finally, Nunley indicated that teachers reported feelings of being overwhelmed with the scope and pace associated with content required by state curriculum. Ultimately, the author believed that the teachers' beliefs posed a mental barrier that acted as an impediment to the implementation of differentiated instruction.

As research developed on the topic of challenges toward teachers' implementation of differentiated instruction, researchers attempted to synthesize previous findings. Goddard et al. (2010) reported that previous research into the challenges or obstacles involving teachers' implementation of differentiated instruction found that teachers did not differentiate due to several factors. First, the authors purported that teachers' believed that differentiated instruction involved too much time to plan lessons. Second, the authors noted that teachers reported a lack of professional development to support practice did not exist in their schools. Finally, Goddard et al. indicated that a lack of administrative support was evidenced in teacher commentary as to why they not consistently differentiating instruction.

Building on the work of Rock et al. (2008) and Wormeli (2005), Weber et al. (2013) further elaborated on the notion that common misconceptions held by teachers for differentiated instruction posed challenges to implementation. The authors' findings included that teachers believed that differentiation was a strategy for teaching limited to only students with disabilities and that it was too complicated and challenging for general education teachers to implement. Additionally, Weber et al. found that teachers' misconceptions about differentiated instruction are centered on a lack of general knowledge of strategies and approaches associated

differentiation that perpetrated myths such as the belief that differentiation required a different lesson plan each day.

\Finally, Robinson, et al. (2014) contributed to the literature by reaffirming previous research findings on obstacles to the implementation of differentiated instruction. The authors reported that teachers feared losing control over students while engaged in differentiated lessons (e.g., classroom management) or lacked the willingness to change by learning different or new ways of teaching. Additionally, the authors uncovered myths surrounding differentiation that the process required teachers having to teach all subjects at once or having to attempt to try too many new ideas at one time.

Implications and Recommendations from the Literature on Differentiated Instruction

In summary, the literature strands on differentiated instruction revealed that this instructional approach is rooted in the need to serve the increasing degrees of diversity found within the context of student learners. The effectiveness of differentiated instruction has been studied, and research has recommended for the implementation of differentiation in contemporary classrooms largely because of the nature of the approach to align with diverse student learning needs. Subban (2006) concluded that aspects of differentiated instruction continue to require investigation into the impact of differentiation on teachers' self-efficacy. The author also indicated the need to examine several other topics such as teaching staffs' responses to new models of instruction, the difference between differentiated instruction and tracking, the impact of teachers' experiences on the ability to differentiate instruction, and how time and resources are utilized during instruction. Lastly, Subban suggested research into teaching staffs' perceptions of the challenges and strengths experienced during the implementation of techniques and strategies associated with the approach.

The review of the literature on differentiated instruction revealed that challenges related to teaching staffs' implementation of differentiated instructional strategies are compounded by teacher held misconceptions or perceived obstacles to implementation imposed by state curricular requirements. Research exists (Carolan & Guinn, 2007; MacAdmis, 2001; Page, 2000; Petig, 2000; Quinn, 2002; Suppovitz, Sirinides, & May, 2010; Tomlinson & Allan, 1997) that specifically claimed that support in the form of principals' instructional leadership practices helps teachers overcome challenges to a lack of implementing differentiated instruction. De Neve et al. (2014), Smit and Humpert (2012), and Tomlinson (2002) purported that by understanding which instructional leadership practices facilitate the implementation of differentiation, leaders can buffer challenges to implementation. Collectively, the authors stated that by developing a critical understanding of how to help teachers deal with these difficulties, leaders learn to be supportive and encouraging of teachers' implementation.

Instructional Leadership

Hallinger (2005) referred to instructional leadership as the lasting legacy of the effective school movement. The author stated that the term instructional leadership has been institutionalized into the vocabulary of educational administration. Hallinger went on to say that after two decades the instructional leadership construct still exists in contemporary leadership within the areas of policy, research, and practices of school leadership and management. The emphasis on instructional leadership in the accountability era has reignited interest in the viability of the concept to improve teaching and learning (Hallinger, 2001, 2005; Hallinger & Heck, 1996). Hallinger (2005) described instructional leadership as being originally conceived of as a role carried out by principals (Bossert et al., 1982; Dwyer, 1986; Edmonds, 1979). During this time frame, the author stipulated that the 1980s research that identified principals in effective

schools as exercising strong instructional leadership had contributed to educational reform policies' throughout the United States and the firm emphasis on instructional leadership to improve schools.

Goddard et al. (2010) reflected upon the origins of instructional leadership as an idea that emerged from the effective schools movement of the 1970's. From this perspective, the authors maintained that the concept of instructional leadership referred to managing and leading a school's teaching and learning. Scholars have purported a variety of definitions for instructional leadership. Differing slightly from Hallinger and Murphy (1985), Andrews and Soder (1987) described a principals' instructional leadership to include four areas of responsibility: 1. resource provider; 2. instructional resource; 3. communicator; and 4. visible presence in the school. One such definition of instructional leadership as put forth by Hallinger and Murphy (1987a) stated that "instructional leadership must be defined regarding observable practices and behaviors that principals can implement" (p. 55).

Leithwood (1994) defined instructional leadership to include only the practices that directly affected curriculum, teacher instruction, staff development, and supervision. Yang (1996), in Gulcan (2012), stipulated that a broader definition of instructional leadership can be stated as the process of performing all leadership activities that may affect learning at school. The author also conceived of a narrow definition of instructional leadership as a function within the context of management with the actions of leadership directly related to teaching and learning. Shepard (1996) also subscribed to the notion that the narrower view of instructional leadership encompassed the principals' responsibilities and actions. Whereas, other scholars examining the broader definition of instructional leadership, such as Donmoyer and Wagstaff

(1990), and Murphy (1988), purported that principal leadership included all activities that affected student learning.

Horng and Loeb (2010) called for a different perspective of the broader view of instructional leadership comprised of personnel and resource allocation practices as being central to instructional improvement. The authors proposed a model of instructional leadership that emphasized organizational management for instructional improvement over that of the day-in-day-out teaching and learning. The authors cited the work of the Wallace Foundation (2004) and Louis, Leithwood, Walhstrom, and Anderson (2010), who cautioned against a narrow focus on instructional leadership concluding that leaderships' influence upon teachers' knowledge and skills was far less efficient than by affecting teachers' motivations and working conditions. Reflecting upon the work of Stronge (1993), Noonan and Hellsten (2013) countered Horng and Loeb's (2010) position by purporting instructional leadership necessitates an understanding of teaching and learning, as well as assessment, to affect improvements. The authors stated that defining instructional leadership continued to be a challenge due to the narrow definition of instructional leadership cast against the numerous roles of the principal.

Instructional Leadership as Conceptualized in the Literature

Hallinger and Heck (1998) conceptualized instructional leadership as being a two-dimensional construct comprised of leadership functions and administration processes. The authors' conceptual framework allowed for the consideration of variations in instructional leadership due to the influence of different school contexts and the benefit of how principals could exercise strong instructional leadership using different leadership styles. Hallinger and Heck's framework of instructional leadership is comprised of eight functions representing the core of the principals' instruction leadership role: 1. framing and communicating school goals; 2.

supervising and evaluating instruction; 3. coordinating curriculum; 4. developing high academic standards; 5. monitoring student progress; 6. promoting professional development; 7. protect instructional time, and 8. developing incentives for students and teachers. The authors' conception of leadership process included six guiding activities: 1. communication; 2. decision-making; 3. conflict management; 4. group processes; 5. change processes; and 6. environmental interaction. Yet, other authors would envision these functions of instructional leadership as being shared amongst an administrative team.

The Center for Educational Leadership (CEL) (2012) purported that instructional leadership was a critical aspect of school leadership for the improvement of the quality of teaching and the enhancement of learning. The CEL furthered envisioned an instructional leadership practice that resided in a team of leaders with the principal as the chief instructional leader that spans four dimensions of activity: 1. vision; 2. improved instructional practices; 3. allocation of resources, and 4. management of people and processes. Clifford (2012) and Walker (2012) found within the literature a changing conception of principal leadership. The authors offered that principals' instructional leadership should encourage teachers to problem solve, revise teaching practices through self-reflection in conjunction with collaborative learning amongst teachers and that school administrators lead curriculum improvement, monitor progress, and provide a role for teachers in the process. As a result, the authors foresaw a form of principal instructional leadership with the potential to establish a strong vision of high expectations that included programs to model effective instruction, and coach teachers to engage in a reflective practice toward problem-solving.

Salo, Nylund, and Stjernstrom (2015) offered a perspective of instructional leadership that is constituted by various professional practices that are conducted simultaneously. The

authors stated that their vision of instructional leadership contained practices aimed at enhancing teachers' professional learning and growth co-existing alongside various other mediating educational and organizational practices. The authors purported that the traditional concepts of instructional leadership are outdated and offered that instead of supervision, instructional leadership practices be concentrated on mediating school processes.

Instructional Leadership Practices towards Teaching and Learning

Stronge, Richard, and Castano (2008) stated that leading instructional efforts have evolved into a primary role for principals as a result of increases in accountability associated with school performance. Based on existing research related to instructional leadership, the authors cited methods principals used to exhibit leadership to meet school goals and purported there to be 11 processes that comprise principals' instructional leadership. According to the authors, principals' instructional leadership included building and sustaining school vision, practicing shared leadership, tapping into the expertise of teacher leaders, collaborating in leadership, and leading the learning community. Additionally, Stronge et al. noted that principals' instructional leadership practices, such as principals as learners and teachers as learners, were valuable perspectives in framing discussions on data to make instructional decisions, monitoring curriculum and instruction, as well as when visiting classrooms.

The early research of Blasé and Blasé (1998) found that researchers had identified specific instructional leadership practices related to improving the teaching and learning process. The authors offered that effective approaches toward instructional leadership should expand teachers' instructional range with carefully designed support and assistance. Furthermore, the authors cited three effects of instructional leadership that affected teacher performance: 1. leaders teaching with teachers; 2. leadership promoting professional development: and 3.

leadership that fosters teacher self-reflective practice toward improving student learning outcomes.

Southworth (2009) argued that a significant portion of instructional leadership that affects teacher performance takes the form of modeling, mentoring, monitoring instruction, and assumes that the principal can model effective instruction, lead others to effective instruction, recognize effective teaching, and understand that data is an intricate part of instructional leadership. May and Huff (2009) examined instructional leadership as a viable leadership approach toward improving teaching and learning. The authors stated researchers and policymakers had agreed that a principals' instructional leadership is key to increasing student achievement as well as being central to focusing their schools on improving teaching and learning. The authors noted principal instructional leadership activities included 1. planning, setting and developing goals towards school improvement; 2. monitoring and observing teaching; 3. supporting teachers; 4. providing for professional development; 5. analyzing data; and 6. modeling instructional practices.

Researchers Hopkins (2001) and Day, Harris and Hadfield (2001), in Noonan and Hellsten (2013), indicated that instructional leadership involved setting the direction, developing teachers engaging in collaboration, using data and research as indicators of effectiveness. Day et al. (2001) identified what the authors believed to the most effective practices within instructional leaderships' components and found that effective school leaders encouraged data teams to impact teaching practices and improve student learning.

Instructional Leadership Practices Impact Implementation of Differentiated Instruction

Salo et al. (2015) stipulated that concept of instructional leadership has evolved in recent years with a significant interest in intentional goal-oriented practices through which principals

communicate teachers' responsibilities for teaching learning to their staffs. Carolan and Guinn (2007) suggested a distinct need for leadership support for teachers implementing differentiated instruction in the middle school context. The authors' findings noted fewer obstacles to differentiation as a result of the supportive instructional leadership practices of principals. Hertberg-Davis and Brighton (2006) examined characteristics of principals that impacted teachers' willingness and ability to differentiate instruction. The authors found that principals' support was essential in promoting teachers' willingness to implement differentiation.

Tomlinson (2005) stated that leaders can help offset challenges to differentiated instruction by providing planning, resources, ensuring access to differentiated curriculum, offering incentives to teachers to develop knowledge of how to differentiate instruction, creating an environment conducive for professional growth and practice, and ensuring local policy supports differentiated instruction. Robinson et al. (2014) indicated that overcoming obstacles towards teachers' implementation of differentiation required support for effective classroom management, facilitating professional learning communities that encourage collaboration, building on knowledge, and sharing experiences all in the execution and delivery of differentiated instruction. The authors also noted that teachers need support in learning how to scaffold tasks and become competent in the use of a set of strategies before taking on new approaches. Byars (2011) offered that principals' instructional leadership could support and maintain instructional innovations through four actions. The author concluded that the most impactful instructional leaders developed a vision, delegated leadership, committed resources to the classroom, and leveraged knowledge of instructional practices toward improving teaching.

Researchers MacAdamis, (2001), Page (2000), and Petig (2000) emphasized time be allotted to teachers by leadership when attempting to institutionalize such a challenging teaching

innovation as differentiated instruction. Petig (2000) stressed that differentiated instruction requires a significant systemic change that takes lots of time and effort suggesting that teachers be allowed to differentiate instruction at their pace and support teachers' attempts to implement differentiation over time. MacAdamis (2001) noted that a five-year period is required before differentiated instruction is instituted as a school norm. The author emphasized the importance of leadership support, curriculum coordinators, principals, and peers as being an instrument to these ends. Page (2000), in contrast to MacAdamis, found three years to be the required length of time allowed for the institutionalizing of differentiated instruction and indicated the necessity of administrator support for teachers as they work towards implementing differentiation.

Lack of Administrative Support

Common themes emerged from the strands of literature on the impact of instructional leadership upon teachers' differentiation of instruction. Researchers reported the importance of leaderships' administrative support in planning for professional learning, development of knowledge through collaboration, allocation of time for practice, and dedicated resources targeting staff needs as having resulted in altering teachers' dispositions towards implementation of differentiation (Byars, 2011; MacAdamis, 2001; Page, 2000; Petig, 2000; Robinson et al., 2014; Tomlinson, 2005). Additionally, scholars (Hertberg-Davis and Brighton, 2006; Santoli, Sachs, Romey, & McClurg, 2008) have alluded to the impact of principals' positive dispositions toward differentiated instruction upon teachers' perceptions of the innovation as having priority.

Researchers have studied the implications of a lack of administrative support on teachers' willingness to differentiate instruction. Authors (Bays & Crockett, 2007; Billingsley & Cross, 1992; Cancio, Albrecht, & Johns, 2013; Holloway, 2000; Renick, 1996) offered that a lack of administrative support revealed itself through school leadership having competing instructional or organizational priorities. The authors cited teachers' perceptions of leaders being unavailable,

not providing feedback, or not attending to teachers' need for time, collaboration, or resources to support differentiation as all contributing in the creation of barriers toward differentiating instruction. Renick (1996) reported teachers as having experienced barriers toward differentiating that were promoted by insufficient materials, planning, and a lack of adequate administrative support. Additionally, the author purported that specific barriers to differentiated instruction occurred through leaderships' oversight of providing staff development as well as not allocating planning time for teachers to design and deliver instruction. Santoli et al. (2008) concluded administrative support for differentiation was a significant factor in positively or negatively affecting teachers' perceptions towards the process. When viewed collectively, these works provide evidence that a lack of administrative support negatively impacts teachers' perceptions of instructional leadership and potentially creates unintended barriers for the implementation of differentiated instruction.

Implications for Instructional Leadership Practices Relative to this Study

Collectively, De Neve et al. (2014), Smit and Humpert (2012), Tomlinson (2002) offered that by understanding which instructional leadership practices facilitated the implementation of differentiated instruction school, administrators can buffer the challenges to implementation. By developing a critical understanding of how to help teachers deal with these difficulties, administrators can determine how they are to be supportive, and the methods used to encourage teachers to implement differentiation.

Goddard et al. (2010) identified a gap in the literature that is significant to this study of differentiated instruction. The authors' review of the literature found principal support of teaching to be vital to teachers' use of differentiated instruction and illustrated the need for school leaders' support (Carolan & Guinn, 2007; MacAdmis, 2001; Page, 2000; Petig, 2000;

Quinn, 2002; Suppovitz et al., 2010; Tomlinson & Allan, 1997). However, the research did not demonstrate a statistically significant link between teachers' reports of principals' support for instruction and school-wide norms around differentiation constituting a gap in the literature to be addressed by research. The authors found that the most effective principals encouraged differentiated instruction through a display of a belief in that anything is possible, and that changing teachers' practices takes time. Implementation of differentiated instruction suggests a long-range plan with time allotted for sustained collaboration and evaluation necessary in encouraging teachers as they differentiate instruction in their classrooms (MacAdamis, 2001; Page, 2000; Petig, 2000). Hertberg-Davis and Brighton (2006) recommended future research to examine principals' influence on sustaining differentiated instruction as a focus and priority for classroom instruction would add to the knowledge of how to best support and develop teachers' commitment and expertise in differentiating instruction over time.

Principal and Teacher Perception Differences

Perception, as defined by Engel and Snellgrove (1989), is the process of interpretation. In this study, the perceptions of principals', assistant principals', and teachers' interpretations of leaderships' support of differentiated instruction through instructional leadership practices are explored. Several studies were reviewed that focused on examining the perceptions of principals for their instructional leadership, teachers' perspectives on expectations for performance, and research dealing with both teachers' perceptions of principal leadership or principals reflecting on teaching and learning.

Studies on Principals' Perceptions

Minsky (2016) conducted a quantitative research report on principals' perceptions of their role in implementing the curriculum. The author's findings were grouped across three

domains of the knowledge of the principals' role, support systems, and the leadership component needed for implementation. Minsky reported that principals felt more emphasis should be placed on the implementation process that allowed principals more time to plan resources in support of preparing and training staffs.

Another study concerned with implementation, Lim, Gronlund, and Anderson (2015) conducted a quantitative study of Swedish primary and high school principals' perceptions of an instructional technology innovation which they were expected to implement as directed by policy. The authors' believed their findings indicated that a misalignment of beliefs and attitudes held for the innovation by principals and stakeholders contributed to creating an obstacle for its implementation. As such, the authors purported that policy makers should take in account the perceptions of principals for the innovation before requiring it become institutionalized.

In a qualitative case study conducted by Eady and Zepeda (2007), the attitudes and practices of three middle school principals were investigated in a rural setting regarding the evaluation and supervision of teachers. The authors discovered that the principals' dispositions towards policy mandated practices were "indicative of the manner in which the three rural principals implemented" (p. 7) the evaluation and supervision of their teachers. The authors concluded that under conditions imposed by accountability policy and the challenges of the school context principals must gain a broader knowledge of the formative processes involved in evaluating and supervising of staff to improve instruction.

Relative to the work of Zepeda (2015) on the State of Georgia's TKES instrument, Warnock (2015) examined principals' perceptions towards having to implement the TKES instrument in their schools. Although the author's findings would be indicative of negative perceptions of change experienced by school principals while engaged in the requirements of

instituting TKES, the principals reported that TKES made little difference in teacher practices and that the requirements to conduct multiple classroom observations posed new challenges to principals' work load in terms of time. On the other hand, the author sited the perceptions of principals' of a positive impact on the effectiveness of their instructional leadership to promote improvements in professional learning.

In yet another qualitative study on the work of effective middle grades principals conducted by Gale and Bishop (2014), principals' perceptions of effective school leadership were examined. The authors reported that the necessity of leaders being "well versed in developmentally responsive and relational leadership" (p. 12) to be useful in the middle school context.

Lastly, two mixed method research studies on principals' leadership revealed values held by leadership can influence behaviors. One study was conducted in Canada by Noonan and Hellsten (2013) of principals' perceptions of instructional leadership in regards to large-scale assessment reforms. The authors used survey methodology combined with qualitative responses from the participants. The findings revealed that "whether or not principals were aware of their engagement in instructional leadership, they were engaging in its practice" and "calling upon themselves to do it" (p. 25). The authors proposed future study by contemplating the motivation of principals who chose to implement change rather than resisting it.

In another study conducted by Provost, Boscardin, and Wells (2010), perceptions of principals' instructional behavior during a recent educational reform period in Massachusetts were examined. The authors discussed a shared perspective as concerns principal leadership behavior. Provost et al. reported that specific leadership behaviors, such as data-based decision-making and strategic planning, could "direct the attention of school leaders so that specific

leadership behaviors are more likely to be assigned a higher value when placed in the context of a forced choice" (p. 555).

Studies on Teachers' Perceptions

Two qualitative studies on teachers' perceptions for differentiated instruction provide insight into teaching staffs' views of practice and challenges associated with implementation. Roiha (2014) conducted case study research into teachers' perceptions of the practice and problems of differentiation in content and language integrated learning. The author reported that teachers perceived of differentiation in different ways. However, as concerns practice, it was observed by the author to have correlated with teachers' perceptions. Outside the greatest challenges towards differentiation of time, material, and the learning environment, the author stressed the need for teachers to develop a consciousness of the nature of differentiation for it to be implemented purposefully and systemically.

In another qualitative case study, Bailey and Williams-Black (2008) conducted interviews of three classroom teachers engaged in differentiated instruction to discover if and how the teachers differentiated instruction. The authors' findings were focused on the approaches towards the key themes of differentiation of content, process, and product (Tomlinson, 1999). The authors' notated that, although all three teachers differentiated, they placed different emphasis on where to differentiate the lesson. One teacher differentiated the content, whereas, the other two choose to differentiate the learning process. The authors indicated the limitation of sample size and recommended further examination to determine the classroom factors that present a hindrance or block teachers from utilizing differentiation in the classroom.

Three additional contemporary works focusing on teachers' perceptions of a working knowledge for differentiated instruction examined the attitudes of pre-service, novice, and veteran teachers towards differentiation. In a qualitative study, Logan (2011) solicited the responses of middle school teachers in the State of Georgia to determine what they considered essential practices and conditions essential toward implementing differentiated instruction. The author also inquired of the participants as to what constituted a myth about differentiation. Logan's findings indicated a level of disagreement with what teachers considered to be the principles of differentiated instruction. The author also concluded that novice teachers reflected a knowledge deficit for differentiated instruction that may be linked back to teacher preparation. Looking back at teacher preparation, Santangelo and Tomlinson (2012) examined the uses of differentiated instruction, based on Tomlinson's model (1999, 2001), by teacher educators. The authors' findings suggested that teacher educators were not fully acknowledging the benefits of modeling differentiated instructional approaches to pre-service teachers. In concluding, the authors posed a question about the abilities of novice teachers to effectively implement differentiated approaches in the classroom.

Lastly, two research studies into teachers' perceptions of differentiated instruction considered the demographic variables of teachers' age, gender, and experience as affecting teachers' attitudes while engaged in implementing differentiation. John and Joseph (2015) researched the impact of pre-service training in core skills for differentiating reading instruction on the self-efficacy of pre-service and novice teachers. Using pre-and-post student reading achievement data, the authors discovered that teachers with the core skills in differentiation positively impacted students' reading skills. In addition, the authors' reported that pre-service teachers trained in differentiated instruction believed they possessed the abilities to meet the

learning needs of students over untrained prospective teachers. Hewitt and Weckstein (2012) examined teachers' perceptions relative to struggling to implement differentiated instruction and reported the need for researchers to consider the variable of teachers' age in investigating resistance to change. The authors cited the work of Aronson (1969) on cognitive dissonance and maintaining the status quo practices that overtime may not be best for students. The authors indicated that when teachers experienced differentiation in their own evaluations that "the dissonance between pushing against differentiated instruction is resolved and teachers become more amenable to and even embrace differentiation" (p. 36).

Studies on Principals' and Teachers' Perceptions

Goddard et al. (2010) conducted an exploratory quantitative study of teachers' perceptions of principals' instructional leadership in support of differentiated instruction in the elementary school setting. The researchers questioned if principals' instructional support was predictive of differences amongst schools' normed use of differentiated instruction. The authors' argued that their findings demonstrated that teachers' perceptions of principals' instructional support could significantly predict the extent to which differentiation was a norm for teacher practice in schools. Furthermore, the authors indicated that leadership was a key factor in teachers' implementation of differentiated instruction as was earlier suggested in qualitative works by McAdamis (2001), Page (2000), Pettig (2000), and Tomlinson and Allan (2000).

Two other quantitative studies of principal and teacher perceptions indicative of the range of topics vary from site-based management (Yau & Cheng, 2014) to organizational trust (Bas, 2012). Yau and Cheng (2014) examined perceptions of elementary school principals and teachers towards the implementation of site-based management. The authors discovered that, although evidence of the core principles of site-based management was being implemented

across the primary schools of Hong Kong, implementation did not occur to the same degree. This study supports that the extent of implementation from school to school may vary due to perceived value or need and is seen as a limitation. Bas (2012) sought to discover if a correlation existed between principals' instructional leadership behaviors and teachers' perceptions of organizational trust. The author reported a significant correlation existed between the leadership behaviors of school principals and the organizational trust of teachers. The author further stated that principals who "demonstrate dynamic instructional leadership practices are supportive of teachers, and yet provide direction" (p. 13) maintain high degrees of performance. The researcher recommended training for principals on instructional leadership to develop a theoretical perspective that supports a better application of instructional leadership behaviors and policy changes to enforce the demonstration of this expectation for leaders.

Frequent references to qualitative research design into the perceptions of principals and teachers engaged in teaching and learning appears in the literature. Blasé and Blasé (1999) examined teachers' perspectives on the method that principals use to promote education and learning. The authors' key findings revealed that principals' communication with teachers to support reflective practice about instruction and professional growth, when reported by teachers as effective instructional leadership, had "enhancing effects on teachers emotionally, cognitively, and behaviorally" (p. 137). In other research, Gedifew (2014) conducted a qualitative case study focused on principal's and teachers' perceptions of instructional leadership. The author's findings denoted very few differences existed between the principal's and teachers' perceptions of instructional leadership. Although "both the teachers and the principal identified the importance of personal and professional support that was necessary so that both could do their jobs" (p. 549), there was a distinct difference in the perceptions of the principal's perspective for

instructional leadership as an ends to impact school culture. Whereas, teachers believed that instructional leadership should focus on supervisory support needed from the principal. Interestingly, another difference was noted by the author. Teachers defined instructional leadership through a lens of the personal characteristics of the principal as opposed to the principal's definition as being one of leadership activities to enhance teaching and learning.

Lastly, Bellibas (2015) studied teachers' perceptions of middle school principals' instructional leadership and the influence of practices upon classroom instruction. Based on interviews, the author found that the teachers' perceptions of the principals' indirect influence on instruction and the principals' direct involvement in teaching were limited by a sense for the need for leaders to strengthen their content knowledge and skills in working with teachers on improving instruction. The author noted that there were implications for the research for policy, practice, and research. As to policy and practice, the author indicated that teachers' efficacy for the principals' capabilities to improve instruction required strengthening of principals' content knowledge and skills in working with teachers. The author suggested training through universities for administrators to develop content knowledge. Additionally, the researcher noted a lack of coherent instructional leadership activities among leaders, as perceived by teachers was substantial in "devaluating principals' involvement in activities that were directly connected to teaching" (p. 12) and recommend that leaders use data derived from classroom observation to determine teachers' needs for improved practice. Future research is suggested by the author toward unveiling "the nature of practices used by principals to influence classrooms either directly or indirectly" (p. 12).

Dissertations and other Research using PIMRS

Hallinger (2008) reported over 119 doctoral studies had used the Principal Instructional Management Rating Scale (PIMRS) as a data collection instrument in research conducted over a span of twenty-five years (circa 1983 to 2008). Four such studies conducted after 2008 were reviewed for their relevance to the study and research question.

Sinha (2009) examined teachers' perceptions of principals' leadership skills across high and low performing high poverty schools using the PIMRS instrument to measure the perceived instructional leadership of four middle school principals. The middle schools in this study were given the designation of average and unsatisfactory. The author's findings indicated that teachers in high-poverty schools rated their principals higher on the PIMRS instrument in the leadership functions of supervising and evaluating instruction, coordinating the curriculum, and monitoring student progress than did teachers at poorly performing schools.

Lyons (2010), using descriptive statistics, sought to determine what specific PIMRS leadership functions (Hallinger, 1983) demonstrated by principals at a state recognized and non-recognized middle schools across a sampling of principals and teachers from New York state. Although administrators reflected that they perceived their practice to include three to four leadership functions, teachers' perceptions revealed that only one was recognized as being frequently demonstrated. The researcher reported that principals at recognized schools more often displayed leadership functions, as assessed in PIMRS, than did their counterparts in non-recognized schools.

Atkinson (2013) examined the perceptions of assistant principals as they perceived themselves in the role of an instructional leader compared to the perceptions of principals and teachers across P-12 education. The author adapted the PIMRS instrument to apply to assistant

principals. The research findings indicated that mean scores given by the administrators were the highest overall as opposed to the teachers registering the lowest. The author recommended future study continue to examine the instructional leadership of principals and be expanded to include assistant principals.

Finley (2014) examined relationships between teachers' perceptions of principals' instructional leadership behaviors and transformational behaviors. This quantitative study utilized both Hallinger's (1983) PIMRS and the Multifactor Leadership Questionnaire (MLQ) (Avolio & Bass, 2004). The MLQ includes subscales of idealized influence or attributes, idealized influence or behaviors, inspirational, motivation, intellectual stimulation, and individual consideration. The author applied all subscales of the PRIMS instructional leadership functions. The researcher's findings portrayed a strong relationship between leadership behaviors associated with instructional and transformational leadership. As a product of a regression analysis, the author identified three predicators of instructional leadership that included intellectual stimulation of teachers, idealized influence or perceived behaviors, and individual consideration. However, the principals' level of education and teaching content area background were found not to be forecasters of effective instructional leadership.

In sum, these studies provided evidence supporting Hallinger's (2008) report that the PIMRS instrument is widely used by doctoral students and versatile in its application to a range of interests in examining principals' and teachers' perceptions of school leaders' instructional leadership practices**.**

Implications for School Administrators' and Teachers' Perceptions Relative to this Study

The implications of the strands of literature on the perceptions of school administrators and teachers for instructional leadership reveals that the potential for significant differences in

interpretation may be found based on an understanding of the concept (Gedifew, 2014; Lim, Gronlund, Anderson, 2015) or for the degrees that this form of school leadership is believed to be part of the practices of principals and administrators (Gedifew, 2014). Most relevant to this research study are the scholars' findings that specific leadership behaviors were perceived, by the respondents, to support instructional practice (Goddard et al., 2010; Roiha, 2014). Additional findings indicated that leadership behavior can provide motivation, develop professional growth (Blasé & Blasé, 1999) and inform policy (Bellibas, 2015), as well as reveal a common concern for limitation and challenges to generalizability as a result of small sample size (Bailey & Williams-Black, 2008).

School Ranking by Student Academic Achievement

According to Craig, Imberman, and Perdue (2015) "accountability systems have been a rapidly growing element of the US public school education system since the late 1990's" (p. 55). The authors noted that these accountability systems "generally evaluate schools based on student achievement based on standardized tests and assign ratings based on aggregated test score result" (p. 55). So it is with the system of school designation in the State of Georgia. As a result of Georgia receiving a waiver from Elementary and Secondary Schools Act (ESEA) (USDOE, 2010), the GaDOE (2013) released the Single Statewide Accountability System (SSAS) awards that replaced AYP.

The SSAS includes awards given to schools with high academic achievement and or growth. Georgia's SSAS awards are distinct in that all non-Title 1schools are eligible for SSAS recognition. Title I schools are eligible for one of two categories for recognition as a Reward School: High Performing and Highest Progress. High Performing Rewards schools (GaDOE, 2012) receive this distinction based on average achievement of "all students" on standardized

testing that represents the top 5% of all Title I schools. Along with test performance, high schools' graduation is required to be among the highest rates of Title I schools coupled with the school making AYP the prior academic year, and was not classified as a Priority or Focus school. Highest Progress Rewards schools (GaDOE, 2012) are given a ranking based on making the most progress in improving the academic performance of "all students". The school must be amongst the highest 10% of Title I schools, or was ranked among the highest high school graduation rates, and the school was not classified as a Priority or Focus school.

Finally, the GaDOE (2012) lists three types of low-performing schools. Priority schools are non-Title I schools distinguished by the average achievement of "all students" on standardized testing equates to the least top 5% of all Title I schools; high schools' graduation is below 60% over two school years, and the school is receiving a federal School Improvement Grant (SIG). Focus schools (GaDOE, 2012) have graduation rates below 60% for the last two school years, and the school has the largest within-school achievement gap between high and low achieving sub-groups such as ethnicity or the difference in graduation rates between subgroups in high school. Priority schools receive state support over a 1-year period, whereas, Focus schools receive three years of support. The third category of the low-performing schools, Alert schools are identified yearly and receive the same state aid as a Focus school. Only one middle school is this study has been designated as a Focus school and has been ranked as "low achieving" on the academic achievement level scale developed for this research.

School performance levels in the State of Georgia are determined by a distribution of weighted scores on the CCRPI (GaDOE, 2012). Achievement points, predicated on the percentage of students passing a standardized test at the highest two levels of performance, comprise 60% of a school's CCRPI. The introduction of a new state-wide end of year

standardized test (GaDOE, 2014), fluctuation in state reporting of schools' CCRPI back to the school districts, and adjustments in initial index scores for a majority of schools have necessitated the use of a single measure to identify school level performance (See Table 1).

Table 1.

School Levels of Performance

Middle School	State ID#	2015 CCRPI	Ach#	Prog.#	Title 1	Level
0178	178	92.9	59.2	16.4	No	High Ach
0499	499	92.6	58.4	17.1	No	
0281	281	92	57.2	17.9	No	
0275	273	90.9	56	17.9	No	
0394	394	90.2	55.2	17.4	No	
0389	389	89.7	54.4	17.7	No	
4056	4056	88.9	53.6	17.2	No	
0299	299	88.9	55.7	17.1	No	
0184	184	86.9	55.2	16.2	No	Mid. Ach
0507	507	86.8	53.6	16.3	No	
0602	602	84.9	53.6	16.3	No	
0607	607	82.7	53	15.3	No	
4050	4050	79.6	52.4	16.4	No	SD 80
2560	2560	79.4	48	17.1	Yes	Pilot
1	475	78.6	47.7	17.1	Yes	
0407	407	77.5	49.8	15.5	Yes	
0280	280	76.6	51.3	16	No	Low Ach.
1056	1056	75.8	48.3	16.1	Yes	
0502	502	73.9	43.6	16.8	Yes	
0290	290	72.7	47	16.4	Yes	
2094	294	71.9	45.6	16.5	Yes	
0202	202	68.5	46.5	15.1	Yes	
5058	292	66.6	42.2	15.3	Yes	
0309	309	66.5	39.5	17.1	Yes	
1060	1060	65.1	40.7	14.3	Yes	
Total number of schools:26	Averages	80.804	50.708	16.5		

Table 1 reflects the CCRPI scores, achievements points, progress points, and entitlement status of the 26 middle schools represented in this study. Schools' achievements points have

been used to create a rank-ordered scale with the mean demarking the middle average. The schools were then divided into thirds thus creating high, middle, and low achievement levels.

Research on the topic of school ranking systems tends to depict findings on the adverse impact of equity issues involving budgeting, commercial real estate marketing, and socio-economic conditions compounded by a ranking system itself (Glynn & Waldeck, 2013; Koning & van der Wiel, 2013). However, more closely related to this aspect of the literature review on the structuring of school ranking systems, Jackson and Lunenburg (2010) examined differences between 24 middle schools with four designations of exemplary, recognized, academically acceptable and unacceptable. The school rank is based on four performance indicators included academic excellence, developmental responsiveness, social equity, and organizational structures. The authors' findings produced an evaluation of the schools' rating similar to those already assigned by the Texas State Department of Education's ranking system based on school accountability ratings.

Following the referenced works in Jackson and Lunenburg (2010), Craig et al. (2015) also conducted research in Texas and focused their study on the Texas Assessment of Academic Skills (TAAS). Under TAAS, schools were given ratings based on student achievement test scores and to lesser degrees attendance as well as dropout and graduation rates. The authors found that under the TAAS many schools "bunched" just above failure thresholds and the authors stated they could determine if this was a result of exceptions granted to schools or the system itself. The researchers were interested in investigating if policy administrators responded, in terms of funding, to the TAAS accountability ratings. The authors noted that it was difficult to ascertain if funding acceptably rated schools was a reward or to remove state sanctions. Over

time, the authors indicated that real resource investment in schools dwindled as the TAAS system became more established.

Kane and Staiger (2002) caution about the use of imprecise school accountability measures. The authors wrote of the commonalities in the elements of school accountability systems. The authors found that a typical system included testing students, reporting school performance, and rewarding or sanctioning schools based on a measure of performance. The researchers noted that about 30 states used some form of an overall performance index to construct rankings with about half of these states using one measure while the other states sought to combine test scores with attendance and graduation rates. However, the authors noted that monetary rewards and sanctions had unintended impacts on equity and quality.

For the purpose of this study, the logic and trends in state accountability systems' use of a single measure of test performance appeared to be congruent with the rationale used in designating the ranking of the middle schools based on the CCRPI achievement awarded for student performance on the Georgia Milestones end of year test.

Implications of the Literature Review towards this Study

The review of the literature has provided for a broad understanding of knowledge derived from the research on the efficacy of differentiated instruction (Baumgartner et al., 2003; Beecher & Sweeny, 2008; Brighton et al., 2005; Ferrier, 2007; Fisher, Frey, & Williams, 2003; Huebner, 2010; Lawrence-Brown, 2004; Lewis & Bates, 2005; McAdamis, 2001; McQuarrie, McRae & Stack-Cutler, 2008; Rasmussen, 2006; Rock et al., 2008; Sternberg, 1997; Sternberg et al., 1998; Subban, 2006; Sullivan, 1996; Tomlinson, 2001a, 2001c, 2004c, 2005; Tomlinson et al., 2008; Tieso, 2005; Valiande et al., 2011); reasons for the lack of implementation for differentiation in classrooms (Calloway & Guinn, 2007; Holloway, 2000; McTighe & Brown, 2005; Rock et al.,

2008; Tomlinson, 2000, 2005; Van Tassel-Baska, & Stambaugh, 2005; Wormeli, 2005); instructional leadership (Hallinger & Heck, 1998); and instructional leadership practices that can promote teachers' implementation of differentiated instruction (Calloway & Guinn, 2007; Hertberg-Davis & Brighton, 2006; Tomlinson, 2005).

Along with these studies, the review of the literature examined scholarly works on principals' and teachers' perceptions of school leaders' instructional leadership (Bas, 2012; Bellibas, 2015; Blasé & Blasé, 1999; McAdamis, 2001; Page, 2000; Pettig, 2000; Tomlinson & Allan, 2000; Yau & Cheng, 2014). Specifically, studies on the topic of teachers' perceptions of principals' or school administrators' instructional leadership practices in support of instructional innovations, such as differentiated instruction, were investigated for their potential relevance to this study (Byars, 2011; Gedifew, 2014; Goddard et al., 2010).

From the research, the problem, the need, and a gap in the literature that may be narrowed by the study were identified. This study addresses the problem noted in the literature that a lack of differentiated instruction infrequently occurred in classroom teaching (Calloway & Guinn, 2007; Holloway, 2000; McTighe & Brown, 2005; Rock et al., 2008; Tomlinson, 2000, 2005; Van Tassel-Baska, & Stambaugh, 2005; Wormeli, 2005). In sum, these authors reported on the challenges that teachers believed they faced in attempting to implement differentiated instruction.

Recalling the works of De Neve et al. (2014), Smit and Humpert (2012), and Tomlinson (2002), the need for the study is aligned with the authors' recommendations that future research seeks to understand which instructional leadership practices facilitate the implementation of differentiated.

Referring specifically to Goddard et al. (2010), the authors noted that research on teachers' perception of principals' instructional support towards teaching staffs' use of differentiated instruction lacked to demonstrate a statistically significant link between teachers' reports of principals' support for instruction and school-wide norms around differentiation. The authors purported that lack of statistical evidence constituted a gap in the literature to be addressed by research.

In retrospect, an examination of the literature has indicated a need for further studies. This study strives to contribute to the literature on the functions of instructional leadership practices identified in the research as supportive of teachers' implementation of differentiated instruction. In order to appreciate the significance of this study, it is important to understand the similarities and differences in previous studies on the focus of this research topic.

The previous scholarship is similar in that: 1. perception data were collected from principals and teachers to identify instructional leadership practices that influence classroom instruction, and 2. a limited number of studies have examined the relationship between instructional leadership practices and differentiation. Goddard et al. (2010) examined teachers' perceptions of principals' instructional leadership in support of differentiated instruction in the elementary school setting reported findings that demonstrated that teachers' perceptions of principals' instructional support could significantly predict the extent to which differentiation was a norm for teacher practice in schools. Finally, Byars (2011) conclusion that principals' instructional leadership could support and maintain differentiated instruction through four actions that included developing a vision, delegating leadership, committing resources to support the innovation, and leveraging knowledge of instructional practices towards improving teaching speaks to only one of the six functions of instructional leadership embodied in this study.

However, the differences are notable when considering purpose of the study. Unlike the broad scope of instructional leadership utilized in the research discussed in this review, this study envisions the use of a narrow and specific set of six instructional leadership functions (Hallinger & Murphy, 1985) linked to the literature as being supportive of school norms of teachers' instructional practice for differentiation. Through this narrowing of the focus, it may be statistically possible to demonstrate significant differences exist between school administrators' perceived engagement in functions of instructional leadership practice and teachers' perceptions of the extent that these practices are being directed towards the practice of differentiated instruction.

The study of the perceptions of school administrators and teachers could bring about awareness of instructional leadership practices that are more likely to increase the implementation of differentiated instruction within their school norms of practice. To research these factors of instructional leadership could inform school administrators of practices that help teachers build capacity in dealing with the challenges of differentiation and consequently improve teaching and learning for diverse students.

Summary of the Literature Review

This chapter provided for a review of scholarly research used to identify the theoretical framework for this study. Vygotsky's (1978) Social Constructivist Theory was examined as a context for understanding the relationship of differentiated instruction to teaching and the manner in which adults formulate knowledge through social interactions while engaged in work (Kim, 2001). The literature associated with the conceptual theory presented ideas from a variety of scholars towards describing the perceived interrelationships of the concept of instructional

leadership with that of functions and leadership practices supporting teachers' implementation of differentiated instruction (Hallinger & Murphy, 1985, 1987a).

This chapter demonstrates the effectiveness of differentiated instruction as an approach towards teaching and learning through which teachers can meet the diverse learning needs of students in the 21st-century classroom (Brighton, et al. 2005; Tomlinson, 1999, 2005). Consequently, the review of the literature on differentiation revealed that researchers previously found that teachers infrequently implemented differentiated instruction due in large part to obstacles that were teacher imposed and were based on a lack of knowledge, misconceptions, and myths (Carolan & Guinn, 2007). Further analysis of the literature on differentiated instruction indicated that the instructional leadership support of school principals may offset challenges and increase teachers' willingness towards implementation (De Neve et al., 2014; Hertberg-Davis & Brighton, 2006; Smit & Humpert, 2012; Tomlinson, 2002). A closer inspection of these and other studies on instructional leadership identified several functions of school principals' instructional leadership, as reported by teachers, as being perceived as supportive of their implementation of differentiated instruction (Robinson et al., , 2014; Tomlinson, 2005).

Research into instructional leadership revealed that it is an important role of the school principal in improving teaching and learning. However, it is not exclusive to principals but is more commonly shared amongst assistant principals (CEL, 2012; Stronge et al., 2008). Recommendations for future research were derived from literature involving research into the perceptions of principals, assistant principals, and teachers for instructional leadership practices (Goddard et al., 2010). Future research could bring further insight into the functions of instructional leadership practices utilized in support of teachers' differentiating instruction in

schools, as well as conditions that contribute to a lack of administrative support. In turn, this research may enlighten leaderships' awareness of the possible significance of the differences in perceptions held by administrators and teachers for the effectiveness of instructional leadership practices as to the extent of their use in schools to support teachers' implementation of differentiated instruction.

In conclusion, education reform in Georgia has brought about state mandates for effective teacher practices including differentiated learning. What principals believe and know about their role as an instructional leader in relationship to the implementation of policy driven teaching practices affect teaching and learning. These beliefs ultimately shape a school leader's practice and the effectiveness of their staffs to meet targeted levels of student performance for all students.

Following this chapter, Chapter 3, will describe the research design for this study and will detail the various aspects employed in data collection and analysis within the design.

CHAPTER 3

METHODOLOGY

The purpose of this study is to identify, from the perspectives of school administrators and teachers, functions of instructional leadership used by administrators in support of teachers' approach towards differentiation in the middle school classroom. The study makes use of instructional leadership practices identified in the literature as supporting the implementation of differentiated instruction (Byars, 2011; Carolan & Guinn, 2007; Goddard, Neumerski, Goddard, & Sallom, 2010; Hertberg-Davis & Brighton, 2006; MacAdmis, 2001; Page, 2000; Petig, 2000; Quinn, 2002; Suppovitz et al., 2010; Tomlinson & Allan, 1997) and common to the daily job functions of school administrators (Hallinger, 2005; Waters, Marzano, & McNulty, 2003). This chapter depicts the research design, instrument, participants, and procedures used in the study. Additionally, details of a pilot study, the population, data collection procedures, method of data analysis, as well as a discussion on demographic variables used as controls to minimize the effect of perception comparisons are also presented before a summary of the chapter.

Research has indicated that in order for school administrators to meet the expectations set down by state mandates for managing effective teaching practices they must frequently enact a model of instructional leadership practice that removes challenges or obstacles that impede teachers' implementation of instruction. The impact of these practices on instruction should promote teachers' willingness to employ strategically-based interventions or innovations in their classroom practices (Goddard et al., 2010; Hertberg-Davis, 2009; Weber, Johnson, & Tripp, 2013).

Differences in perception may be detected by examining the perceptions held by both school administrators and teachers for the instructional leadership practices directed towards the

implementation of differentiated instruction. By raising the awareness of school leadership to the possibility that differences in perception exist, school administrators may be enabled to identify self-held misconceptions for the impact of their own practices on teaching and learning. In turn, this would allow for administrators to better align functions of instructional leadership practices, based on teachers' perceptions, in support of differentiating instruction in the classroom.

Research Questions

1. What are instructional leadership practices toward differentiated instruction as perceived by middle school administrators and teachers?
2. Are there any significant differences in instructional leadership toward differentiated instruction as perceived by middle school administrators and teachers?
3. Are there any significant differences in school administrator and teacher perceived instructional leadership toward differentiated instruction among high, middle, and low achieving schools?

Research Design

The non-experimental quantitative research design used for this study was a survey method which attempted to identify, from the perspectives of administrators and teachers, functions of instructional leadership practice used by school administrators in support of teachers' approach towards differentiation in the middle school classroom. According to Antonakis et al. (2003), researchers utilizing survey data to determine characteristics of a given population, in order to make inferences, frequently used this method to examine leadership practice focused on the "vital facts of people, their beliefs, opinions, attitudes, motivations, and behaviors" (p. 58). This particular methodology can provide for a statistical analysis of data through the use of a descriptive closed-end rating survey as a means of collecting data from the

participants (McIntyre, 1999; Mertens, 2005) and limits threats to reliability common to other forms of data collection (Suskie, 1996). Further considerations for selecting a quantitative research survey design were based on characteristics of the approaches' ability to control for respondent bias and inconsistency when attempting to sample and objectively analyze data (Bell, 1996; Glasow, 2005; Salant & Dillman, 1994).

Participants

All middle school administrators and teachers within the participating metropolitan Atlanta, Georgia, school district were invited to participate in the study.

Population

McMillan (1996) defined population as a "group of elements, whether individuals, objects, or events, that conform to specific criteria" (p. 85). The researcher intends to generalize the results of this research to all middle school administrators and teachers within the participating school district.

The targeted population (Fricker, 2012) that comprises the middle schools of the participating school district is estimated at 25 middle school principals, 83 assistant principals, and the 1,499 certified teachers who are evaluated under the TKES system. Unlike other school districts in the State of Georgia that began implementation of TKES as early as 2012, the participating school district only introduced TKES to leadership and teaching staffs in 2014. It is possible that not all school administrators may have administered the TKES evaluation instrument or that all teachers have been evaluated under the TKES platform. This limitation will make it improbable that these participants may be able to respond to the questionnaire increasing the potential for non-response bias (McMillan, 1996; Rea & Parker, 2014). As a result, exclusion criteria was applied to the target population (Lumsford & Rae-Lumsford, 1995).

Based on the timing of the survey, at least one full cycle of teacher observations had been completed in accordance with the school district's policy. This resulted in the survey population (McMillan, 1996) consisting of school administrators with at least one semester of experience in evaluating teachers and their differentiated instructional practices under the TKES instrument, as well as teachers from all subject areas in the general or special education classroom settings that had been evaluated through the TKES platform for at least one semester. Further delimiting variables (McMillan, 1996), such as the demographics of the school administrators, teachers, and schools, served as controls (Vogt, 2007) to minimize the effect on perception comparisons.

Instruments

Instructional leadership practices in this study, reflective of six functions identified in the literature as supporting the implementation of differentiated instruction, are included in an on-line self-designed survey instrument. The survey solicited the perceptions of administrators and teachers as to the extent that functions of instructional leadership practices are used by school administrators in support of teachers' approach towards differentiation in the middle school classroom.

A few instruments have been designed to examine instructional leadership. These instruments were developed by Hallinger (1983), Porter, Goldring, Murphy, Elliott, and Cravens (2006), Porter et al. (2010), Stentson (2007), and Waters, McNulty, and Marzano (2003). However, no one particular measure aligns closely enough with the literature in addressing instructional leadership practices relative to teachers' challenges in implementing differentiated instruction without being used in conjunction with other instruments (Le Clear, 2005). Therefore, an original questionnaire was adapted from Hallinger's (1983) Principal Instructional Management Rating Scale (PIMRS) instrument for rating instructional leadership.

Functions of instructional leadership related to removing barriers to teachers implementing differentiated instruction were compartmentalized into six sub-sets (De Vellis, 2003). Each sub-set was comprised of survey items reflective of the instructional leadership practices associated with each function (Hallinger, 1983; Stetson, 2007). The study's survey design was customized to include a Likert-scale, a format familiar to the participants due to its broad use by state and local agencies. The participants were asked to state their opinions as to the extent of use of instructional leadership practices by answering each question with Never, Rarely, Sometimes, Often, or Always. A pilot version of the questionnaire was field tested by administrators and teachers at a middle school not participating in the general study.

The following steps were taken to construct the questionnaire items for the data collection instrument (Hallinger, 1999):

1. An extensive review of the literature was conducted in Chapter 2 on instructional leadership and teachers' infrequent implementation of differentiated instruction in the classroom. The research revealed that scholars had identified specific instructional leadership practices that were viewed as being supportive of teachers overcoming obstacles to implementing differentiated instruction.
2. Hallinger's (1983) 10 leadership job functions were adapted to create six functions of school administrators' responsibilities. They were aligned to the professional literature on instructional leadership practices that support teachers' implementation of differentiation and the job function's relationship to Standard 4 of TKES, (implementing differentiated instruction). The six functions or sub-sets are as follows:
    - communicating the school's goals
    - supervising and evaluating instruction

- monitoring student progress
- protecting instructional time
- providing incentives for teachers
- providing professional development.

3. Survey questions were constructed by adopting the context of items from Hallinger's (1983) PIMRS and adapting the wording to be reflective specifically of instructional leadership practices toward teacher implementation of differentiated instruction. In its original form, the questionnaire was made up of between 4 to 6 items for each domain totaling 30 questions. Each item was rated by the participants using a Likert-type, 5-point response rating scale ranging from (1) Never to (5) Always. Dr. Phillip Hallinger was consulted to avoid infringement upon intellectual property as concerns the wording of the items associated with the study's questionnaire (See Appendix B).

As a result of these procedures, this study employed an original two-part questionnaire based on concepts *and* adaptation of questions drawn from Hallinger's (1983) PIMRS and elements of the items from Stetson's (2007) Differentiated Instruction Self-Assessment Tool (DISAT). They are intended to examine: 1. the self-perceptions of principals, in the role of an instructional leader, engaged in support the implementation of differentiated instruction; and 2. teachers' perceptions of instructional leadership practices about the implementation of differentiated instruction. Separate instruments are required to be created to collect data from school administrators (See Appendix C) and teachers (See Appendix D).

In its final form, the survey instruments used to collect data for this study are comprised of a Part One, which collected demographic information requesting the respondents to state their gender, years working at their schools, years of teaching experience, and years of administrative

experience that may be factored in as variables during analysis. In the case of school administrators, responding to "years of teaching experience" may provide a means to differentiate among administrators based on years of teaching in the classroom prior to going into administration.

Part Two consisted of items designed to elicit the participants' ratings of the extent to which leadership practices are used to support the implementation of differentiated instruction in the classroom. Data were collected using a Likert-type 5-point response rating scale ranging from (1) Never, (2) Rarely, (3) Sometimes, (4) Often, or (5) Always. It is estimated that this part of the survey should take no more than twenty minutes to complete.

Pilot Study

The pilot study as it is envisioned is used to pre-test the questionnaire's feasibility to answer the research questions. Blaxter et al. (1996) purported that the value of a pilot study cannot be overlooked when considering the benefits to the economy of the design. The main reasons for conducting a pilot design are outlined by Welman and Kruger (1999). The first of these reasons is the necessity to detect flaws in the measurement procedures which could include the wording of instructions. The authors' second explanation is centered on clearing out unnecessary items by identifying unclear or ambiguous items in a questionnaire. Therefore, the goal of a pilot study is to test out the study in miniature in order to sort out the problems that may ultimately contribute to the failure of the research procedure.

In order to minimize risk, an external pilot survey was conducted on a small group of judges comprised of school administrators and teachers who did not participate in the main survey. The pilot survey was executed with the support of school leadership consisting of the principal and assistant principals along with representatives of all grade levels and subject areas

at a middle school within the participating school district. A cover letter outlining the purpose of the study, the respondents' ability to contribute to the study, along with a letter of informed consent were distributed via e-mail to the judges by an administrative representative of the participating school's principal (See Appendix E). The pilot study was used to test for the feasibility of the instrument. The following sections outline how the administration of the instrument during the pilot study assisted the researcher in testing for the validity and reliability of the instrument.

Test for Validity

After obtaining the consent of the pilot survey judges, the proposed survey instruments were sent out for critique. Judges were asked to make commentary on the instruments in the following areas: a) Content – Do the contents reflect the purpose of the study? Are there any other items to be included or deemed unnecessary?; (b) Language – Is the language of the instruments appropriate, understandable, or ambiguous?; (c) Format – Is the format of the instruments appropriate for the intent of the study? Are there excesses in the number of items? Should an open-ended question be included versus other quantitative formats? The judges' commentary provided the basis for revision.

Test for Reliability

The revised survey instrument was again given to the judges to solicit actual responses to the items. The completed surveys were returned, and the data were entered into an Excel spreadsheet. Survey items appeared in columns on the worksheet, whereas the judges' responses were recorded in rows. Using the Cronbach Alpha method in IBM's (2015) Statistical Package for Social Sciences (SPSS), a reliability test for internal consistency was conducted utilizing an alpha value range from 0.00 to 1.0. The resulting alpha must be at 0.7 or close to being

acceptable. In instances where an alpha of 0.7 was not obtained, a rotation analysis of each section was performed to identify items causing the inconsistency. The rotation analysis resulted in the deletion of items from the original questionnaire.

Pilot Study Results

Test Results for Validity (Administrators). Phase One of the School Administrators' Survey pilot study included the participation of 4 judges. The demographics of the judges can be viewed in Table 2.

Table 2.

Demographics of Judges (Administrators) in Pilot Study Phase 1

Gender	Years at this Current School	Years Teaching Experience	Years Administrative Experience
Female 50%	1 Year	1 Year	1 Year
N(2)	0% N(0)	0% N(0)	0% N(0)
Male 50%	2 to 4 Years	2 to 4 Years	2 to 4 Years
N(2)	50% N(2)	0% N(0)	50% N(2)
	5 to 9 Years	5 to 9 Years	5 to 9 Years
	25% N(1)	0% N(0)	0% N(0)
	10 to 15 Years	10 to 15 Years	10 to 15 Years
	0% N(0)	25% N(1)	25% N(1)
	More than 15 Years	More than 15 Years	More than 15 Years
	25% N(1)	75% N(3)	25% N(1)

Table 2 revealed that the ratio of female to male judges to be 1:1. One hundred percent of the judges have evaluated teachers at their current school under the TKES instrument and were familiar with the expectations for differentiated instructional strategies and approaches to be observed as part of teachers' practice. The judges comprised a veteran corps of teachers with 75% having 15 or more years of classroom experiences. However, none of the judges had been evaluated under TKES as a classroom teacher. Lastly, 100% of the judges were veteran school administrators having between 2 to more than 15 years of school leadership experience.

Judges made commentary on the instruments in the following areas: (a) Contents – The judges unanimously agreed that the contents reflected the purpose of the study. No items were included or deemed unnecessary.; (b) Language – The judges found the language of the instruments to be appropriate. The judges made recommendations for changes in the wording of several items in order to be more clearly understood by the reader, to maintain a consistency for the context of differentiated instruction, and in instances where ambiguities were detected provided editorial suggestions.; (c) Format – The judges agreed upon the format of the instrument as being appropriate for the intent of the study. None of the judges suggested an open-ended question be included at the end of the survey. The judges' commentary provided the basis for all revisions. (See Appendix H)

Test Results for Reliability (Administrators). The revised survey instrument was sent to the judges, via e-mail, asking for real responses to the questionnaires. When the completed surveys were returned, the data were uploaded from Surveymonkey.com into an Excel spreadsheet. Using the Cronbach Alpha method in SPSS, a reliability test for internal consistency was conducted utilizing an alpha value range from 0.00 to 1.0. The resulting alpha for all 30 items of the questionnaire was .875 and was considered acceptable. Next, a reliability test for internal consistency for each of the six functions of instructional leadership and corresponding instructional leadership practices was conducted.

I. Communicate School Goals, items 1 through 6, were tested and produced an alpha of .818.
II. Supervise and Evaluate Instruction, items 7 through 11 were tested and resulted in an alpha of .808.

III. Monitor Student Progress, items 12 through 16 were tested and an alpha of .793 was calculated.

IV. Protect Instructional Time, items 17 through 21 were tested, and the result was less than 0.7 with an alpha of -3.636. When the alpha of 0.7 was not obtained for items 17 to 21, a rotation analysis was performed to identify items causing the inconsistency. The deletion of items 18, 19 and 21 from the questionnaire produced an increase in the alpha to .727.

V. Provide Incentives for Teachers, items 22 to 25, produced an alpha of .496. When the alpha of 0.7 was not obtained for items 22 to 25, a rotation analysis was performed to identify items causing the inconsistency. The deletion of item 24 from the questionnaire produced an increase in the alpha to .750.

VI. Provide for Professional Development, a test of questions 26 through 30 resulted in an alpha of .934.

After revisions, no alpha was less than .727 for any of the functions and resulted in only minor changes. The larger survey will be conducted using a questionnaire totaling 27 items.

Test Results for Validity (Teachers). Phase One of the Teachers' Survey pilot study included the participation of 28 judges. However, it should be noted that only 14 of the 28 judges participated in both Phase One and Two of the pilot study. The demographics of the judges were included in Table 3.

Table 3.

Demographics of Judges (Teachers) in Pilot Study Phase 1

Gender	Years Teaching at Current School	Years Teaching Experience	Subject Area Distribution
Female 69% N(9) Male 31% N(4)	1 Year 25% N(3) 2 to 4 Years 17% N(2) 5 to 9 Years 8% N(1) 10 to 15 Years 33% N(4) More than 15 Years 17% N(2)	1 Year 0% N(0) 2 to 4 Years 33% N(4) 5 to 9 Years 17% N(2) 10 to 15 Years 25% N(3) More than 15 Years 25% N(3)	ELA (Gen. Ed.) 15% N(2) ELA (Spec. Ed.) 8% N(1) Math (Gen. Ed.) 15% N(2) Science (Gen. Ed.) 23% N(3) Science (Spec. Ed.) 0% N(0) S. Studies (Gen. Ed) 8% N(1) S. Studies (Spec. Ed) 8% N(1) Connections 0% N(0) IEL/ESOL 15% N(2) Foreign Language 0% N(0) Teach multiple subjects or grade level (Gen. Ed.) 0% N(0) Teach multiple subjects or grade level (Talented and Gifted) 8% N(1) Teach multiple subjects or grade level (Special Ed.) 0% N(0)

Table 3 revealed the ratio of female to male judges to be 3:1. One hundred percent of the judges were evaluated under the TKES instrument and were familiar with the expectation for differentiated instructional strategies and approaches to be part of their teaching practice. The judges comprised a veteran corps of teachers with an average of 8 years in the classroom. Fifty-four percent of the judges teach in core content settings.

In Phase One, judges made commentary on the instruments in the following areas: (a) Contents – The judges unanimously agreed that the contents reflected the purpose of the study. No items were included or deemed unnecessary.; (b) Language – The judges found the language

of the instruments to be appropriate. The judges made recommendations for changes in the wording of several items so as to be more clearly understood by the reader. Other recommendations included maintaining a consistency for the context of differentiated instruction, and instances where ambiguities were detected provided editorial suggestions.; (c) Format – The judges agreed upon the format of the instrument as being appropriate for the intent of the study. Only one recommendation was made to remove item number 10 as being repetitious, but the majority of the judges commented that this question should be re-written and left in the questionnaire. In response to the judges' critique, item 9 was edited to read as "strengths" whereas item 10 was revised to read as "weaknesses". Fourteen-percent of the judges suggested an open-ended question be included at the end of the survey. However, this was not the recommendation of the majority, and this suggestion may be incorporated into the instrument for a future mixed-methods study. The judges' commentary provided the basis for all revisions. (See Appendix H)

Test for Reliability (Teachers). The revised survey instrument was sent to the judges, via e-mail, asking for real responses to the questionnaires. When the completed surveys were returned, the data were uploaded from Surveymonkey.com into an Excel spreadsheet. Using the Cronbach Alpha method in SPSS, a reliability test for internal consistency was conducted utilizing an alpha value range from 0.00 to 1.0. The resulting alpha for all 30 items of the questionnaire was .959 and considered acceptable. Next, a reliability test for internal consistency for each of the six functions of instructional leadership and corresponding instructional leadership practices was conducted.

I. Communicate School Goals, items 1 through 6, were tested and produced an alpha of .919.

II. Supervise and Evaluate Instruction, items 7 through 11, were tested and resulted in an alpha of .872.

III. Monitor Student Progress, items 12 through 16, were tested, and an alpha of .837 was calculated.

IV. Protect Instructional Time, items 17 through 21, were tested and the resulted in an alpha of .774. An additional test was conducted to examine the impact of eliminating items 18 and 21 from the teachers' survey in an effort to align with that of the administrators' survey. The resulting alpha was .665. Since an alpha of .7 was not achieved another test was performed by eliminating items 19 and 21. The result achieved was an alpha of .743.

V. Provide Incentives for Teachers, items 22 to 25, produced an alpha of .900. Again, another test was performed towards aligning the teachers' survey with that of the administrators' by eliminating item 24. The resulting test produced an alpha of .833.

VI. Provide for Professional Development, a test of items 36 through 40, resulted in an alpha of .915. After conducting a separate analysis of all six functions, the elimination of item 24 resulted in no alpha being less than .774 and survey consisting of 29 questions.

In order for both surveys to mirror one and another, the general survey of the teachers required being carried out utilizing a questionnaire totaling 27 items. Alignment with the administrators' survey necessitated the elimination of items 18, 19, and 21 from the teachers' version resulting in an overall alpha of .957. A rotation analysis of items 17 through 21 from the teachers' survey was conducted with the deletion of items 18, 19 and 21 achieving an alpha of .437. Next, item 18 was added back into the rotation and increased the alpha score to .665. In the following test, item 19 replaced 18 and the resulting alpha was now above .7 with a score of .743. Although the rotation analyses of Part IV, Protect Instructional Time, from the

administrators' survey revealed the need to eliminate item 19, an argument can be made to keep this lower reliability item in both surveys for consistency. Since the initial item analysis for item 17 through 21 was an alpha of .795, the elimination of items 20 and 21 did not depreciate the required alpha of .7 with the result equating to .702.

Data Collection Procedures

The researcher utilized survey methodology to collect quantitative data. Upon approval of the Institutional Review Boards (IRB) from both Kennesaw State University's (KSU) and the participating school district (See Appendices G and H), the researcher e-mailed the participating schools' principal a copy the Principals' Letter of Instruction (Appendix J), which contained an attachment of the cover Letter of Solicitation (Appendix F) that explained the purpose of the study along with the role of the respondent in the research. Hyperlinks specific to the surveys for each schools' administration and teaching staffs were embedded in the principals' instructions as well as being pasted onto the Letter of Solicitation. Next, following the school district's IRB, principals e-mailed the document out to their staffs announcing the study. Upon opening the hyperlink to the study, participants were presented with an on-line Letter of Consent (Appendix I) following KSU's IRB template that included a statement of assurances of confidentiality along with a notification that the respondent was free to terminate their participation (Salant & Dillman, 1994). After reviewing the letter, respondents were asked to agree to participate by selecting "yes" and were then taken directly to Phase One of the survey. Consequently, respondents who selected "no" were directed to a screen thanking them for their consideration to participate and ended the survey.

The Internet-based survey application, Surveymonkey.com, permitted the participants to submit completed surveys electronically and be securely stored to maintain confidentiality. Three

weeks were allowed for school administrators and teachers to receive the invitation to participate and access the survey. During the second and third weeks, the researcher kept in constant communication with participating principals as to the response rates of their schools. Principals responded positively by actively re-communicated the study and survey links to staffs. Finally, in week four, e-mail reminders to principals were distributed informing them of the closing date of the survey. This last communication prompted some principals to encourage their staffs to participate in the study before the survey window closed equating to a 10% increase in respondents.

Data Analysis Procedures

This study examines functions of instructional leadership practices, based on the perceptions of administrators and teachers in the middle school classroom, using a self-design survey instrument. The method of data analysis was employed in response to what each research question calls for. Details of data analysis are described in the following sections.

Research Questions

The first research question asked, *What are instructional leadership practices toward differentiated instruction as perceived by middle school administrators and teachers?* To answer this research question, the researcher analyzed the principals' survey data by employing descriptive statics of means, standard deviations and percentages to examine the extent of the principals' perceptions of instructional leadership practices. The same method was used to examine the extent of the teachers' perceptions of instructional leadership practices.

The second research question asked, *Are there any significant differences in instructional leadership toward differentiated instruction as perceived by middle school administrators and teachers?* A one-way Multivariate Analysis of Covariance (MANCOVA) was used to answer

this research question and investigate if any significant differences existed between the administrators' and teachers' perceptions of instructional leadership practices toward differentiated instruction. Administrators' and teachers' demographic data were included in the statistical analysis as co-variates to minimize the possible effect of these data on the perceptions of administrators and teachers so that a truer picture of the differences between administrators' and the teachers' perceptions can be displayed.

The third research question asked, Are *there any significant differences in principal and teacher perceived instructional leadership toward differentiated instruction among high, middle, and low achieving schools?* This research question was answered by using Multivariate Analysis of Variance (MANOVA) for data analysis to determine if any statistically significant difference exists in administrators' perception of leadership practices toward differentiated instruction among the three levels of school achievement status. Likewise, the MANOVA was also used in determining if any statistical differences exist in teachers' perception of leadership practices toward differentiated instruction among the three levels of school achievement status.

To prepare the data to be analyzed in response to the third research question, CCRPI ratings from School Year 2015 were used to determine the levels of school achievement in each of the 26 middle schools (See Table 4).

Table 4.

CCRPI Ratings according to High, Middle, and Low Level of School Achievement

School ID#	2015 CCRPI Score	Achievement Points Earned	Progress Points Earned	School Title I Status	Achievement
178	92.9	59.2	16.4	No	High
499	92.6	58.4	17.1	No	High
281	92	57.2	17.9	No	High
273	90.9	56	17.9	No	High
394	90.2	55.2	17.4	No	High
389	89.7	54.4	17.7	No	High
4056	88.9	53.6	17.2	No	High
299	88.9	55.7	17.1	No	High
184	86.9	55.2	16.2	No	Middle
507	86.8	53.6	16.3	No	Middle
602	84.9	53.6	16.3	No	Middle
607	82.7	53	15.3	No	Middle
4050	79.6	52.4	16.4	No	Middle
2560	79.4	48	17.1	Yes	Middle
475	78.6	47.7	17.1	Yes	Middle
407	77.5	49.8	15.5	Yes	Middle
280	76.6	51.3	16	No	Middle
1056	75.8	48.3	16.1	Yes	Low
502	73.9	43.6	16.8	Yes	Low
290	72.7	47	16.4	Yes	Low
294	71.9	45.6	16.5	Yes	Low
202	68.5	46.5	15.1	Yes	Low
292	66.6	42.2	15.3	Yes	Low
309	66.5	39.5	17.1	Yes	Low
1060	65.1	40.7	14.3	Yes	Low
Total: 26 schools	80.804 avg. CCRPI Score	50.708 avg. Achievement points earned	16.5 avg. Progress points earned		

Table 4 lists each school's CCRPI score, which is the sum of the sub-scores for achievement and progress. Directions of school progress on the CCRPI were based on a criterion that combines content mastery (i.e., results derived from standardized testing), achievement gap scores, with other indicators of progress to be identified as a reward, focus, or priority school (GaDOE, 2013). The CCRPI scores of middle schools were rank ordered from highest to lowest. The sum of all scores was calculated to determine the average CCRPI score (Avg. = 80.804). The school achievement scores above and below the mean was used to identify the high achieving schools (from 92.9 to 88.9), the middle achieving schools (from 86.9 to 77.5) and the

low achieving schools (from 76.6 to 65.1) resulting in roughly one-third of all middle schools assigned at each level.

Demographic Factors as Control Variables

The demographic information of the participating middle school administrators and teachers was collected in Part One of both survey instruments for the expressed purpose of serving as control variables to minimize their possible effect on the perception comparisons. A review of the literature on perception studies involving principals and teachers was conducted to determine what specific demographic variables were most commonly found by researchers as having a statistically significant effect on perception comparisons.

A search of the literature on perception studies of principals and teachers was conducted using the keywords "demographics", teaching experience", "age", "gender", "teaching degree", "Socio-economics" (SES), and "grade level". The subsequent review of the literature revealed some indication that researchers' (Dartnow, 1998, 2000a; Ertmer, Addison, Lane, Ross, & Woods, 1999; Fives & Buehl, 2010; Huberman, 1989; North & Noyes, 2002; Tschannen-Moran & Hoy, 2006; Williams & Dikes, 2015) use of gender, and teaching experience as control variables had produced findings to their effect on the perception comparison data between principals as well as teachers.

Shakeel and DeAngelis (2016) utilized demographics as control variables in examining principals' perceptions of school settings and found no statistical significance for gender or experience yet "positive influence was seen in setting performance standards, establishing curriculum, and in determining professional development" (p. 11). In other works controlling for gender, Dartnow (1998, 2000a) found that a teacher's sex affected engagement in reforms.

Studies conducted by Ertmer et al. (1999) and North and Noyes (2002) revealed that male teacher displayed a more positive attitude for change over their female counterparts.

Tschannen-Moran and Hoy (2006) and Fives and Buehl (2010) controlled for the effect of teaching experience as they examined the influence of various antecedents upon the teacher self-efficacy beliefs of novice and experienced teachers. The authors' findings revealed that teaching experience appeared to be related to teachers' self-efficacy beliefs. Additionally, work by Huberman (1989) found teaching experience to affect teachers' perceptions of engaging in reform. Williams and Dikes (2015) examined teachers' perceptions for burnout employing 10 demographic variables. The authors' inclusion of teaching experience and student caseload in the list of 10 variables produced the only findings that had a positive correlation to teacher burnout.

Implications of Demographic Factors as Control Variables Relative to this Study

As an outcome of the review of the literature, the demographic factors of gender and teaching experience were selected as control variables in answering Research Question Two. The rationale for this choice was based on the findings gleamed from the literature review. The research would suggest that the use of gender and teaching experience, as controlling variables to minimize their possible effect on the perception comparisons, have produced positive if not statistically significant differences when examining perceptions.

Summary

This chapter is comprised of detailed information about the research design and methodology, including the research questions, a description of the participants, instruments, procedures for collecting data, conducting the statistical analysis, and considerations involving reflection upon limitations as perceived to be associated with the study. The study specifically examined 27 instructional leadership practices drawn from the professional literature as being

supportive in teachers' implementation of differentiated instruction as perceived by school administrators and educators in the middle school setting. The descriptive research design used in the study incorporated a self-designed electronic on-line survey to sample all middle school principals, assistant principals in teachers of the participating school district. The quantitative data collected was gathered through an Internet-based survey application and analyzed through IBM's SSPS data analysis program.

In Chapter 4, the researcher presents the findings of the study as they relate to answering the research questions. Chapter 5 includes an interpretation and discussion of the findings that will be followed by the researcher's recommendations and conclusion of the study.

CHAPTER 4

FINDINGS

In Chapter 1, the researcher stated the necessity to examine school administrators' instructional leadership practices that support teachers' implementation of differentiated instruction in the classroom. The review of literature in Chapter 2 offered perspectives on educational change, the effectiveness of differentiated instruction, and the impact of instructional leadership on practices for teaching and learning. The review of the literature included research indicating that for school administrators to promote effective teaching practices, they must frequently enact a model of instructional leadership practice that removes challenges or obstacles impeding teachers' implementation of instruction. Additionally, school administrators' instructional leadership should foster a willingness on the part of teachers to employ strategically-based interventions or innovations in their classroom practices. In Chapter 3, the researcher described the methodology in relationship to the research questions along with an original survey designed to align with the literature on the functions of instructional leadership practices effective in mediating teachers' challenges associated with differentiated instruction. In the current chapter, Chapter 4, the researcher offers the findings from the data collection, statistical analyses, and a discussion on the results. Chapter 4 concludes with a summary of the findings.

Restatement of the Purpose

The purpose of this study was to identify, from the perspectives of administrators and teachers, functions of instructional leadership practice used by middle school administrators in support of teachers' approaches towards differentiation in the classroom. This research concentrated on gathering middle school administrators' and teachers' perceptions of

instructional leadership across six functions and 27 practices as indicated by the literature as being supportive of teachers overcoming obstacles to implementing differentiated instruction. The study centered on responses to a perception survey (See Appendices C and D) administered in the Fall of 2016 between November 16, 2016, to December 16, 2016. Results generated by the surveys provided insights into the middle school administrators' self-perceptions of functioning as an instructional leader in support of the implementation of differentiated instruction along with teachers' perceptions of instructional leadership practices about the implementation of differentiated instruction, within their school settings.

Description of Surveys

The primary data collection instrument of this study was a researcher-designed 27-item perception surveys employing a 5-point, Likert-type scale rated as 1 = Never, 2 = Rarely, 3 Sometimes, 4 = Often, and 5 = Always. The survey was administered online through a Surveymonkey.com application and was intended not to exceed 20 minutes for participants to finish. The perception survey was comprised of two parts. However, it was necessary to create two versions to reflect the educational roles and context in which the perceptions of the participants were formed.

School Administrators' Perception Survey

Part one of the Administrators' survey consisted of demographic questions categorically arranged as follows: Question 1 asked for respondents' gender (male or female); Question 2 inquired as to the years of experience working at current school (1 year, 2-4 years, 5-9 years, 10-15 years, 15 or more years); Question 3 queried as to the total years of teaching experience (1 year, 2-4 years, 5-9 years, 10-15 years, 15 or more years); and lastly, Question 4 requested the

participant to indicate their total years of administrative experience (1 year, 2-4 years, 5-9 years, 10-15 years, 15 or more years).

A questionnaire comprised Part Two of the survey. Administrators were asked to respond to 27 questions as to the extent perceived that they as instructional leaders performed specific functions and practices about supporting the implementation of differentiated instruction. The questionnaire was divided into six sections to reflect the 6 functions of instructional leaders and contained between 3 to 6 items per section. The sections are as follows: I. Communicate School Progress (items 1 to 6); II. Supervise and Evaluate Instruction (items 7 to 11); III. Monitors Student Progress (items 12 to 16); IV. Protects Instructional Time (items 17 to 19); V. Provide Incentives for Teachers (items 20 to 22); and VI. Provide Professional Development (items 23 to 27).

Teachers' Perception Survey

Part One of the teachers' survey consisted of demographic questions asked as follows: Question 1 asked for respondents' gender (male or female); Question 2 inquired as to the years of experience working at current school (1 year, 2-4 years, 5-9 years, 10-15 years, 15 or more years); Question 3 queried as to the total years of teaching experience (1 year, 2-4 years, 5-9 years, 10-15 years, 15 or more years); Question 4 requested the participant to indicate their content area(s) of instruction (English Language Arts for general education, English Language Arts for special education, Math for general education, Math for special education, Science for general education, Science for special education, Social Studies for general education, Social Studies for special education, Connections/Performing Arts, Intensive English Language/English for Speakers of Other Languages, reading for general education, Reading for special education, Foreign Languages, or teaching in multiple subjects or grade levels for general education, special

education, or Gifted); and Question 5 required teachers to identify the grade level(s) taught (6, 7, 8, or multiple grade levels).

In Part Two of the survey, teachers were asked to respond to the same 27 questions as the administrators. However, to reflect context, teachers have been invited to respond to each item as to the extent that they perceived their school administrator performed specific functions and practices about supporting the implementation of differentiated instruction. The teachers' questionnaire accurately mirrored the administrative survey in all aspects.

Description of the Population

The population for this study was derived from the administrative and teaching staffs of 18 out of 24 (less the pilot study school) middle schools within the participating school district. While all administrators and teachers were invited to participate in the study via email from the participating school principals, 43 of 76 middle school administrators and 242 of 1,149 teachers consented affirmatively in response to the study. Participants who actually returned their surveys are: 34 school administrators (45%) and 171 teachers (15%) (See Table 5).

Table 5.

Actual Response Rate

Population	Potential Participants	Agreed Participants	Agreed to participate but did not complete Survey	Actual Response Rate
Administrators	76	43	9	34 (45%)
Teachers	1, 149	242	71	171 (15%)
Total Participants	1,225	285	80	205 (17%)

Demographic Data

The demographic data collected for this research offered descriptive attributes of the participants and formed the independent variables for this study. Inclusive in this list of variables

are responses to questions on gender (male, female), years working at current school (1 year, 2-4 years, 5-9 years, 10-15 years, and 15 years or more), years of teaching experience (1 year, 2-4 years, 5-9 years, 10-15 years, and 15 years or more), and years of administrative experience (1 year, 2-4 years, 5-9 years, 10-15 years, and 15 years or more).

School Administrators. The perception survey instrument captured demographic data from 34 middle school administrators. Of the 34 leaders that participated in the research, 21% of the population were male, and 79% were female. The largest percentage of middle school administrators (35.3%) reported having between 5 to 9 years of administrative experience. The majority of participating administrators (39.2%) had been working at their schools from 10 to 15 school years. This figure was closely followed by administrators working at their current schools for 15 years or more (33.3%). These two categories reflected that of all participating middle school administrators, almost 70% had experience in leading over at least a decade of educational change at their current school; 45% reported having 15 years or more of teaching experience; 27% reported having 10 to 15 years of teaching experience. Overall, these participating administrators, although only representing 41% of the population, had experiences either in the classroom or in the role of an instructional leader to offer insights impacted by the current educational reforms. The frequencies of administrative experience illustrated in Table 6 also supports a reasonable claim that the administrators have had multiple interactions with teachers as regarding the implementation of TKES over the past three school years (See Table 6).

Table 6.

Participating Middle School Administrators' Demographic Data

Variables	Frequency (n)	Percent (%)
Gender		
Male	7	20.6
Female	27	79.4
Years Experience at Current School		
1 year	4	12.1
2-4 years	1	3.3
5-9 years	4	12.1
10-15 years	13	39.2
15 years or more	11	33.3
Years of Experience in Teaching		
1 year	0	0
2-4 years	2	6.1
5-9 years	7	21.2
10-15 years	9	27.3
15 years or more	15	45.5
Years of Administrative Experience		
1 year	1	2.9
2-4 years	9	26.5
5-9 years	12	35.3
10-15 years	7	20.6
15 years or more	5	14.7

Teachers. The perception survey instrument captured demographic data from 171 middle school teachers. Of the 171 teachers that participated in the research, 19.3% of the population were male, and 80.7% were female. The largest percentage of middle school teachers (42.7%) reported having 15 or more years of teaching experience. However, the responses of the majority of participating teachers (38%) revealed that they only had been working at their present schools from 2 to 4 years. The majority of veteran teachers with 10 to 15 years of experience (17.5%) to 15 or more years of instructional experience (18.1%) reported that they had been at their current school for relatively the same period. Overall, like the administrators, the teachers reflected a level of experience within the profession and at their current schools that could be seen to help shape perceptions of instructional leadership.

Participating teachers' demographic data also revealed a broad representation across content areas (See Table 7) and comprised of 39% special education teachers or teachers who instruct multiple subjects and grade levels. Demographic data from Table 7 helps to support a reasonable assumption. Based on the nature and degree of specialized instruction that is required in those class settings, it would follow that differentiated instruction is a necessary approach towards meeting the needs of diverse learners (Tomlinson, 2000a, 2001a, 2001b, 2002, 2004a). Lastly, the grade level frequency numbers reflected a relatively closeness in the percentages of participating teachers from grade level 6 (n-=40, 23.5%), 7 (n=33, 19.4%), and 8 (n=41, 24.1%). The majority of the respondents indicated that they teach students from multiple grade levels (n=56, 32.9%).

Table 7.

Participating Middle School Teachers' Demographic Data

Variables	Frequency (n)	Percent (%)
Gender		
Male	33	19.3
Female	138	80.7
Years of Experience at Current School		
1 year	20	12.0
2-4 years	63	38.0
5-9 years	24	14.5
10-15 years	29	17.5
15 years or more	30	18.1
Years of Experience in Teaching		
1 year	2	1.2
2-4 years	19	11.1
5-9 years	34	19.9
10-15 years	40	23.4
15 years or more	73	42.7
Subject Taught		
English Language Arts (Gen. Ed.)	19	11.1
English Language Arts (Special Ed.)	6	3.5
Math (Gen. Ed.)	22	12.9
Math (Special Ed.)	7	4.1
Science (Gen. Ed.)	22	12.9
Science (Special Ed.)	2	1.2
Social Studies (Gen. Ed.)	23	13.5
Social Studies (Special Ed.)	5	2.9
Connections/Performing Arts, Intensive	13	7.6
English Language/English for Speakers of Other Languages	7	4.1
Reading (Gen. Ed.)	8	4.7
Reading (Special Ed.)	3	1.8
Foreign Languages	1	.6
Multiple subjects or grade levels (Gen. Ed.)	4	2.3
Multiple subjects or grade levels (Special Ed.)	23	13.5
Gifted	4	2.3
Grade Level		
6	40	23.5
7	33	19.4
8	41	24.1
Multiple Grade Levels	56	32.9

Distribution of the Population across School Achievement Status

School achievement status is being used in this study as an independent variable so to be to take into account three levels of analysis in answering Research Question 3. The distribution of the population across school achievement status (See Table 8) revealed that amongst school administrators that 41.2% lead in low-achieving schools. This statistics was followed by 29.4% of administrators leading in the middle as well as high achieving schools.

Table 8.

Population of Administrators across School Achievement Status

School Achievement Status	Frequency (n)	Percentage (%)
Level 1 Low Achievement	14	41.2
Level 2 Middle Achievement	10	29.4
Level 3 High Achievement	10	29.4

The distribution of the population of teachers across school achievement status (See Table 9) revealed that amongst middle school teachers, 45.6% taught in low-achieving schools. The remainder of the population of teachers comprised of 32.7% who taught in middle achieving schools along with 21.6% who taught in high achieving schools.

Table 9.

Population of Teachers across School Achievement Status

School Achievement Status	Frequency (n)	Percentage (%)
Level 1 Low Achievement	78	45.6
Level 2 Middle Achievement	56	32.7
Level 3 High Achievement	36	21.6

Description of the Schools

Data of the participating schools' socio-economic status (SES) were collected from public resources (GaDOE) and entered onto an Excel spreadsheet containing the corresponding

schools' participants' response data uploaded from the SurveyMonkey web-links. The school SES data included: school size, status, percentages for free and reduced lunch, and students' ethnicity. Also entailed in the data were a range of student services such as percentages of Students with Disabilities (SWD), Intensive English for Learners/English for Speakers of Other Languages (IEL/ESOL), and Gifted. Fifty percent of all participating middle schools receive Title I support. The average SES for all participating schools was 43% with an average school size of 990 students (See Appendix L).

Data Analysis

Research Question 1

1. What are instructional leadership practices toward differentiated instruction as perceived by middle school administrators and teachers?

School Administrators. Research Question One sought to delve into middle school administrators' and teachers' perceptions of the functions of instructional leadership practices toward differentiated instruction at their local school setting. Descriptive statics were utilized to generate an answer to Research Question One regarding school administrators. The average mean score of each of the six functions of instructional leadership (S1 Communicate School Progress, S2 Supervise and Evaluate Instruction, S3 Monitors Student Progress, S4 Protects Instructional Time, S5 Provide Incentives for Teachers, and S6 Provide Professional Development) was calculated to ascertain the school administrators' perceptions of instructional leadership practices towards implementation of differentiated instruction within their school setting. The average mean scores were produced by grouping together the question items associated with each function. S1 comprised of items 1, 2, 3, 4, 5, and 6 resulting in an average mean score of 4.03; S2 made up of questions 7, 8, 9, 10, and 11 producing an average mean

score of 4.14; S3 included questions 12, 13, 14, 15, and 16 was calculating at an average mean score of 3.79; S4 contained questions 17, 18, and 19 generating an average mean score of 4.17; S5 incorporated questions 20, 21, and 22 and averaging a mean score of 3.72; and S6 consisting of questions 23, 24, 25, 26, and 27 resulted in an average mean score of 3.83. Lastly, the means of S1, S2, S3, S4, S5, and S6 were calculated to achieve a total average mean score of 3.95 (See Table 10).

Table 10 reveals the result of the analysis shown by total average (M = 3.95 on 5-point scale, SD = 3.44) and the subsets of averages. The middle school administrators' responses are all above average. This particular mean score is indicative that the administrators were in a high degree of agreement of the positive statements in the survey. Additionally, the data from Table 10 can be seen to be reflective of the existence of a general belief held by the middle school administrators that they are performing functions of instructional leadership practice supportive of teachers' implementation of differentiated instruction.

It is interesting to note that from the research a tendency has been observed of principals self-reporting themselves higher than teachers did of their instructional leadership. Gurley, Anast-May, O'Neal, and Dozier (2016) noted that their findings reflected the literature of the past thirty years to be typical of research reporting principals tending to rate themselves consistently higher than do teachers regarding principals' instructional leadership. Hallinger et al., (2013) stated as well that research indicated a tendency of principals' to self-report themselves "substantially higher than those from teachers" (p. 277).

Recalling Lyons (2010) and Atkinson (2013) from the study's literature review, the authors' findings further illustrated the tendency of administrators' reflections that they perceived their practice disproportionately to that of teachers' perceptions. Atkinson (2013) examined the

perceptions of assistant principals as they perceived themselves in the role of an instructional leader. The findings indicated that mean scores given by the administrators were the highest overall as opposed to the teachers registering the lowest.

When searching for an explanation for this phenomenon, the research suggested further study and provided little explanation. A recent work by Memisoglu (2016) offered that differences in perception possibly stemmed from "teachers' higher expectations" about leaders' competencies (p. 132). This is an interesting point to dwell on given the findings from this study. The lack of any significant differences between the perceptions of the administrators (M = 3.95) and teachers (M = 3.61) for the statements of the survey can be interpreted positively toward the extent that functions of instructional leadership are observable from the perspectives of the participants (See Tables 10 and 11).

Table 10.

School Administrators' Perceptions of Instructional Leadership Practices toward Differentiated Instruction

Subsets	N	Minimum	Maximum	Mean	Std. Deviation
S1 Avg	34	3	5	4.03	.500
S2 Avg	34	3	5	4.14	.453
S3 Avg	34	3	5	3.79	.544
S4 Avg	34	3	5	4.17	.508
S5 Avg	34	3	5	3.72	.493
S6 Avg	34	2	4	3.83	.510
Total Avg	34	3	5	3.95	.344
Valid N (listwise)	34				

Teachers. Descriptive statistics were utilized to generate an answer to Research Question One regarding teachers. The average mean scores of each of the six functions of instructional leadership, or subsets, (S1 Communicate School Progress, S2 Supervise and Evaluate Instruction, S3 Monitors Student Progress, S4 Protects Instructional Time, S5 Provide Incentives

for Teachers, and S6 Provide Professional Development) was calculated to ascertain the teachers' perceptions of instructional leadership practices towards implementation of differentiated instruction within their school setting. The process of averaging mean scores was repeated by grouping together the question items associated with each function. S1 comprised of items 1, 2, 3, 4, 5, and 6 resulting in an average mean score of 3.96; S2 made up of questions 7, 8, 9, 10, and 11 producing an average mean score of 3.65; S3 included questions 12, 13, 14, 15, and 16 calculating an average mean score of 3.77; S4 contained questions 17, 18, and 19 generating an average mean score of 3.68; S5 incorporated questions 20, 21, and 22 averaging a mean score of 3.28; and S6 consisting of questions 23, 24, 25, 26, and 27 resulting in an average mean score of 3.47 Lastly, the means of S1, S2, S3, S4, S5, and S6 were combined to achieve a total average mean score of 3.10 (See Table 11).

Table 11 reveals the result of the analysis shown by total average (M = 3.61 on 5-point scale, SD = .683) and five out of six subsets of averages show that the middle school teachers' responses are above average. This is indicative that the participating middle school teachers were in a high degree of agreement with the positive statements of the survey in S1, S2, S3, S4, S5, and S6.

The data in Table 11 are reflective of the teachers' general belief that they agree that their school administrators are performing instructional leadership practices supportive of teachers' implementation of differentiated instruction. These functions include the following: communicating school goals, supervising and evaluating instruction, monitoring student progress, protecting instructional time, providing incentives for teachers meet school goals, innovate, or enhance instruction, and providing professional development to sustain implementation.

Table 11.

Teachers' Perceptions of Instructional Leadership Practices toward Differentiated Instruction

Subsets	N	Minimum	Maximum	Mean	Std. Deviation
S1 Avg	165	2	5	3.96	.659
S2 Avg	168	1	5	3.65	.868
S3 Avg	167	1	5	3.77	.762
S4 Avg	166	1	5	3.68	.768
S5 Avg	168	1	5	3.28	.951
S6 Avg	168	1	5	3.47	.925
Total Avg	153	1	5	3.61	.683
Valid N (listwise)	153				

Research Question 2

2. Are there any significant differences in instructional leadership toward differentiated instruction as perceived by middle school administrators and teachers?

In answering Research Question 2, a Multivariate Analysis of Covariance (One-way MANCOVA) was conducted to assess whether or not significant differences exist in the perceptions of middle school administrators and teachers for instructional leadership practices that support differentiated instruction. The dependent variables were of comprised of S1 Communicate School Progress; S2 Supervise and Evaluate Instruction; S3 Monitors Student Progress; S4 Protects Instructional Time; S5 Provide Incentives for Teachers; and S6 Provide Professional Development. The independent variables were made of administrators and teachers. Gender and years of teaching experience were entered as covariate factors. The significance level is set at .05.

Additionally, the use of a One-way MANCOVA removed the effect of one or more covariate factors on the relationship between independent variables and dependent variables (Garson, 2015; Huberty & Petoskey, 2000). The control variables, or covariates, selected for this

study were based on a review of the literature. The selection of gender and teaching experience utilized in conducting the tests of between-subjects effects was based on methodologies from existing research. Drawn from the works of Datnow (1998), Datnow and Castellano (2000), Fullan (2001), Pajares (1992), and Williams and Dikes (2015), the researchers purported the variables of gender and teaching experience as factors affecting implementation. The results of the One-way MANCOVA can be seen in Tables 12, 13, 14, and 15.

Descriptive Statistics of School Administrators and Teachers. Table 12 provides the mean and standard deviation for the dependent variables comprised of the seven subsets of the functions of instructional leadership separated by the independent variables of administrators (1.0) and teachers (2.0). Table 12 also offers "Total" rows which permits means and standard deviations for the total number of administrators and teachers (N = 193) separated by the dependent variable to be known (Laerd Statistics, 2013). By examining the Total row, the mean scores are indicative of the potential degrees of agreement or disagreement between the participants for the statements of the survey.

Table 12.

Descriptive Statistics of Administrators and Teachers

Subset	Admin/Teacher	Mean	Std. Deviation	N
S1 Avg	1.0	4.03	.500	34
	2.0	3.97	.647	159
	Total	3.98	.623	193
S2 Avg	1.0	4.14	.453	34
	2.0	3.66	.853	159
	Total	3.74	.817	193
S3 Avg	1.0	3.79	.544	34
	2.0	3.76	.759	159
	Total	3.76	.725	193
S4 Avg	1.0	4.17	.508	34
	2.0	3.70	.753	159
	Total	3.78	.737	193
S5 Avg	1.0	3.72	.493	34
	2.0	3.25	.927	159
	Total	3.34	.883	193
S6 Avg	1.0	3.83	.510	34
	2.0	3.46	.920	159
	Total	3.52	.872	193
Total Avg	1.0	3.95	.345	34
	2.0	3.63	.687	159
	Total	3.69	.651	193

Multivariate Tests. Although there were several multivariate tests to select from while conducting a One-way MANCOVA, Pillai's Trace was chosen for being considered powerful and a robust statistic for basic use (Pillai, 1955; Seber, 1984). Table 13 reveals that there was a significant difference in the perceptions of the school administrators and teachers for administrators' functions of instructional leadership practice, $F(34, 159) = 5.347$, $p = .000$; Pillai's Trace = 0.148, partial $N^2 = .148$.

Table 13.

Multivariate Test: Pillai's Trace for the Effects of Gender and Years of Teaching Experience

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	.584	42.964	6.000	184.000	.000	.584
Gender	.017	.530	6.000	184.000	.785	.017
Years/teaching	.972	.887	6.000	184.000	.506	.028
Admin/Teacher	.148	5.347	6.000	184.000	.000	.148

Tests of Between-Subjects Effects. Table 14 reveals that the One-way MANCOVA test using S1's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (p = .744). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the AdminTeacher row for S1, the mean square has an average of .106 and p value of .744. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed between the perceptions of administrators and teachers in the function of communicating school progress after controlling for the possible effect of gender and teaching experience (mean square = .106, F = .272, and p = .744). These results would indicate that a high degree of agreement (p = .744) between the perceptions of administrators and teachers exists for the statements of the survey related to S1 (Communicate School Progress) averages when controlling for gender (F = .874) and years of teaching experience (F = .078) (See Table 14).

In testing for S2's averages as the dependent variable, the results indicated that the Corrected Model is significant (p = .009). This statistic shows that the model used for this analysis is appropriate to predict statistical differences. When examining the AdminTeacher row for S2, the mean square has an average of 6.453 and p value of .002. This result means that all comparison in this analysis are significant. Therefore, a statistical significance existed between

the perceptions of administrators and teachers in the function of supervise and evaluate instruction after controlling for the possible effect of gender and teaching experience (mean square = 6.453, F = 10.122, and *p* = .002). These results would indicate that a high degree of disagreement (*p* = .002) between the perceptions of administrators and teachers exists for the statements of the survey related to S2 (Supervise and Evaluate Instruction) averages when controlling for gender (F = 1.646) and years of teaching experience (F = .078) (See Table 14).

Testing for S3's averages as the dependent variable, the results indicated that the Corrected Model is non-significant (*p* = .440). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the AdminTeacher row for S3, the mean square has an average of .016 and *p* value of .864. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed between the perceptions of administrators and teachers in the function of monitoring student progress after controlling for the possible effect of gender and teaching experience (mean square = .016, F = .030, and *p* = .864). These results would indicate that a high degree of agreement (*p* = .864) between the perceptions of administrators and teachers exists for the statements of the survey related to S3 (Monitors Student Progress) averages when controlling for gender (F = 2.431) and years of teaching experience (F = .276) (See Table 14).

Using S4's averages as the dependent variable resulted in an indication that the Corrected Model is significant (*p* = .005). This statistic shows that the model used for this analysis is appropriate to predict statistical differences. When examining the AdminTeacher row for S4, the mean square has an average of 6.043 and *p* value of .001. This result means that all comparison in this analysis are significant. Therefore, a statistical significance existed between the perceptions of administrators and teachers in the function of protecting instructional time after

controlling for the possible effect of gender and teaching experience (mean square = 6.043, F = 11.706, and p = .001). These results would indicate that a high degree of agreement (p = .001) between the perceptions of administrators and teachers exists for the statements of the survey related to S4 (Monitors Student Progress) averages when controlling for gender (F = .193) and years of teaching experience (F = .958) (See Table 14).

Testing using S5's averages as the dependent variable resulted in an indication that the Corrected Model is significant (p = .027). This statistic shows that the model used for this analysis is appropriate to predict statistical differences. When examining the AdminTeacher row for S5, the mean square has an average of 5.916 and p value of .006. This result means that all comparison in this analysis are significant. Therefore, a statistical significance existed between the perceptions of administrators and teachers in the function of providing incentives for teachers after controlling for the possible effect of gender and teaching experience (mean square = 5.916, F = 7.842, and p = .006). These results would indicate that a high degree of agreement (p = .006) between the perceptions of administrators and teachers exists for the statements of the survey related to S5 (Provide Incentives for Teachers) averages when controlling for gender (F = 1.433) and years of teaching experience (F = .040) (See Table 14).

Using S6's averages as the dependent variable resulted in an indication that the Corrected Model is significant (p = .044). This statistic shows that the model used for this analysis is appropriate to predict statistical differences. When examining the AdminTeacher row for S6, the mean square has an average of 3.701 and p value of .027. This result means that all comparison in this analysis are significant. Therefore, a statistical significance existed between the perceptions of administrators and teachers in the function of providing professional development after controlling for the possible effect of gender and teaching experience (mean square = 3.701,

F = 4.998, and p = .027). These results would indicate that a high degree of agreement (p = .027) between the perceptions of administrators and teachers exists for the statements of the survey related to S6 (Provide Professional Development) averages when controlling for gender (F = 1.781) and years of teaching experience (F = 1.272) (See Table 14).

The final test using Total Averages as the dependent variable resulted in an indication that the Corrected Model is significant (p = .035). This statistic shows that the model used for this analysis is appropriate to predict statistical differences. When examining the AdminTeacher row for Total Average, the mean square has an average of 2.671 and p value of .012. This result means that all comparison in this analysis are significant. Therefore, a statistical significance existed between the perceptions of administrators and teachers in the total averages of all sub-sets after controlling for the possible effect of gender and teaching experience (mean square = 2.671, F = 6.494, and p = .012). These results would indicate that a high degree of disagreement (p = .012) between the perceptions of administrators and teachers exists for the statements of the survey related to Total Average when controlling for gender (F = 1.857) and years of teaching experience (F = .272) (See Table 14).

Table 14.

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	S1 Avg	.484	3	.161	.413	.744	.007
	S2 Avg	7.622	3	2.541	3.985	.009	.059
	S3 Avg	1.426	3	.475	.904	.440	.014
	S4 Avg	6.787	3	2.262	4.383	.005	.065
	S5 Avg	7.101	3	2.367	3.138	.027	.047
	S6 Avg	6.120	3	2.040	2.755	.044	.042
	Total Avg	3.603	3	1.201	2.920	.035	.044
Intercept	S1 Avg	91.488	1	91.488	233.836	.000	.553
	S2 Avg	98.339	1	98.339	154.249	.000	.449
	S3 Avg	86.909	1	86.909	165.249	.000	.466
	S4 Avg	78.554	1	78.554	152.182	.000	.446
	S5 Avg	79.889	1	79.889	105.910	.000	.359
	S6 Avg	75.009	1	75.009	101.288	.000	.349
	Total Avg	84.842	1	84.842	206.303	.000	.522
Gender	S1 Avg	.342	1	.342	.874	.351	.005
	S2 Avg	1.050	1	1.050	1.646	.201	.009
	S3 Avg	1.279	1	1.279	2.431	.121	.013
	S4 Avg	.100	1	.100	.193	.661	.001
	S5 Avg	1.081	1	1.081	1.433	.233	.008
	S6 Avg	1.319	1	1.319	1.781	.184	.009
	Total Avg	.764	1	.764	1.857	.175	.010
YearsTeaching	S1 Avg	.031	1	.031	.078	.780	.000
	S2 Avg	.050	1	.050	.078	.780	.000
	S3 Avg	.145	1	.145	.276	.600	.001
	S4 Avg	.494	1	.494	.958	.329	.005
	S5 Avg	.030	1	.030	.040	.842	.000
	S6 Avg	.942	1	.942	1.272	.261	.007
	Total Avg	.093	1	.093	.227	.634	.001
AdminTeacher	S1 Avg	.106	1	.106	.272	.603	.001
	S2 Avg	6.453	1	6.453	10.122	.002	.051
	S3 Avg	.016	1	.016	.030	.864	.000
	S4 Avg	6.043	1	6.043	11.706	.001	.058
	S5 Avg	5.916	1	5.916	7.842	.006	.040
	S6 Avg	3.701	1	3.701	4.998	.027	.026
	Total Avg	2.671	1	2.671	6.494	.012	.033
Error	S1 Avg	73.946	189	.391			
	S2 Avg	120.494	189	.638			
	S3 Avg	99.400	189	.526			
	S4 Avg	97.559	189	.516			
	S5 Avg	142.565	189	.754			
	S6 Avg	139.963	189	.741			
	Total Avg	77.726	189	.411			

Table 14. cont.

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Total	S1 Avg	3133.167	193				
	S2 Avg	2833.560	193				
	S3 Avg	2834.800	193				
	S4 Avg	2860.444	193				
	S5 Avg	2296.333	193				
	S6 Avg	2539.120	193				
	Total Avg	2705.441	193				
Corrected Total	S1 Avg	74.430	192				
	S2 Avg	128.116	192				
	S3 Avg	100.826	192				
	S4 Avg	104.345	192				
	S5 Avg	149.666	192				
	S6 Avg	146.083	192				
	Total Avg	81.329	192				

The results of the one-way MANCOVA in Tables 14 revealed there were no significant differences in instructional leadership toward differentiated instruction as perceived by middle school administrators and teachers relative to the statements of the survey for S1 Communicate School Progress (p = .603) and S3 Monitors Student Progress (p = .864). Conversely, Tables 14 revealed that there were significant differences in perception between the administrators and the teachers concerning S2 Supervise and Evaluate Instruction (p = .002), S4 Protects Instructional Time (p = .001), S5 Provide Incentives for Teachers (p = .006), and S6 Provide Professional Development (p = .027). However, the most important findings are presented in Table 14 were significant differences in instructional leadership toward differentiated instruction as perceived by middle school administrators and teachers as indicated by the Total Average of all functions (p = .012). Therefore, an overall high degree of disagreement was found between middle school administrators and teachers in their perceptions of the statements of the survey.

Although a Post Hoc test is suggested due to the statistically significant findings in associated with Research Question 2, there are fewer than three groups used in this analysis.

Descriptive statistics will be used in determining which group had the higher mean scores. Referring back to Table 12, it was seen that across all sub-sets including Total Average that school administrators recorded the highest mean score averages. It should be noted that for S1 and S3 administrators' (S1, M = 4.03; S3, M = 3.79) and teachers' (S1, M = 3.97; S3, M = 3.76) mean scores averages were dramatically close and may be seen as predicative of the levels of agreement for the positive statements of the survey.

Effect Size Index. Effect size is an index used to indicate the magnitude of differences obtained in results. Calculated *p* values alone are not useful indicators of study effects (Cohen, 1988; Kirk, 1996; Olejnik & Aligina, 2000). The reporting of effect size has important advantages. By conveying the effect sizes in this work, an assessment of how the study's findings fit in the context of the literature and the potential to inform analytical decisions of other researchers are seen as being beneficial to future research (Baugh, 2002; Fan, 2001). Therefore, the standardized mean effect will be used to express the differences between administrators and teachers in terms of standard deviation. Accordingly, for this study Cohen's d (1996) effect size model was used. As such, .2 or below is small, between .2 and .8 is medium, and .8 and above is large. The effect size of the comparison of mean and standard deviation statistics between school administrators and teachers can be seen in Table 15.

Table 15.

Effect Size Statistics Calculations Associated with the One-way MANCOVA (Cohen's d)

Dependent Variable	Teacher/Admin Mean/SD	N	Calculations	Effect
S1	(3.97-4.03)/0.578191	T=159; A=34; N=193	0.103772	Small
S2	(3.66-4.14)/0.682941	T=159; A=34; N=193	0.702842	Moderate
S3	(3.76-3.79)/0.660309	T=159; A=34; N=193	0.045433	Small
S4	(3.70-4.17)/0.64229	T=159; A=34; N=193	0.731757	Moderate
S5	(3.25-3.72)/0.7742421	T=159; A=34; N=193	0.633064	Moderate
S6	(3.46-3.85)/0.743808	T=159; A=34; N=193	0.49744	Moderate
Total Avg	(3.63-3.98)/0.543596	T=159; A=34; N=193	0.588672	Moderate

Table 15 reveals that among administrators and teachers in S1 and S3 there was a small effect and the results were non-significant. However, among administrators and teachers there was a statistically significant difference in S2, S4, S4, S6, and Total Average. The magnitude of the effect was moderate.

Research Question 3

3. Are there any significant differences in school administrator and teacher perceived instructional leadership toward differentiated instruction among high, middle, and low achieving schools?

Research Question Three was answered using a one-way Multivariate Analysis of Variance (MANOVA) to take into account the need for three levels of analysis as regards school achievement status with a .05 level of significance. CCRPI ratings from School Year 2015 were used to determine the achievement status of each of the participating school district's 25 middle schools (See Table 4). For interpretation purposes, a 1.0 represents a school with low

achievement status, 2.0 refers to a school with middle achievement status, and a 3.0 identifies schools with high achievement status (See Tables 16).

Table 16 offers the descriptive statistics of the middle school administrators relative to the dependent variables for each function of instructional leadership (S1 Communicate School Progress, S2 Supervise and Evaluate Instruction, S3 Monitors Student Progress, S4 Protects Instructional Time, S5 Provide Incentives for Teachers, and S6 Provide Professional Development) as well as the total average of all functions combined. The independent factor was school achievement status.

Table 16 reveals the result of the analysis. Shown by total average mean (M = 3.94 on 5 point scale, SD = .345) or subsets of averages that the middle school administrators' responses are all above average, the mean score indicated that the administrators are in high degree of agreement with the positive statements in the survey. Additionally, the data from Table 16 can be seen to be reflective of the existence of a general belief held by middle school administrators, at all three levels of school achievement status, that they are performing functions of instructional leadership practice supportive of teachers' implementation of differentiated instruction.

Table 16.

Descriptive Statistics of Administrators' Perceptions by Level of School Achievement

Subset	School Status	Mean	Std. Deviation	N
S1 Avg	1.0	3.92	.530	14
	2.0	3.94	.363	9
	3.0	4.27	.551	10
	Total	4.03	.508	33
S2 Avg	1.0	4.03	.421	14
	2.0	4.22	.273	9
	3.0	4.20	.625	10
	Total	4.13	.457	33
S3 Avg	1.0	3.60	.490	14
	2.0	4.11	.437	9
	3.0	3.72	.620	10
	Total	3.78	.547	33
S4 Avg	1.0	4.02	.546	14
	2.0	4.19	.603	9
	3.0	4.33	.351	10
	Total	4.16	.515	33
S5 Avg	1.0	3.71	.487	14
	2.0	3.70	.455	9
	3.0	3.67	.567	10
	Total	3.70	.489	33
S6 Avg	1.0	3.77	.476	14
	2.0	3.69	.657	9
	3.0	3.98	.394	10
	Total	3.81	.507	33
Total Avg	1.0	3.84	.289	14
	2.0	3.98	.375	9
	3.0	4.03	.390	10
	Total	3.94	.345	33

Multivariate Test. Table 17 reveals that there was no significant differences in the perceptions of the school administrators for functions of instructional leadership practice based on school achievement status, F = 1.132, p = .356; Pillai's Trace = 0.414, partial Eta = .207.

Table 17.

Multivariate Test: Pillai's Trace of School Achievement Status

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	.993	606.833	6.000	25.000	.000	.993
Sch. Status	.414	1.132	12.000	52.000	.356	.207

A One-way between subjects MANOVA was conducted to compare the effect of school achievement status (IV) on the perceptions of school administrators for functions of instructional leadership practices toward differentiated instruction among middle school administrators at high, middle, and low achieving schools. Using S1's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (p = .214). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S1, the mean square has an average of .403 and p value of .214. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of administrators for the function of communicating school goals after controlling for the possible effect of school achievement status (mean square = .403, F = 1.624, and p = .214). These results would indicate that a high degree of agreement (p = .214) between the perceptions of administrators exists for the statements of the survey related to S1 (Communicate School Goals) averages when controlling for school achievement status (F = 1.624) (See Table 18).

Using S2's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (p = .540). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S2, the mean square has an average of .135 and p value of .540. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the

perceptions of administrators for the function of supervising and evaluating instruction after controlling for the possible effect of school achievement status (mean square = .135, F = .629 and p = .540). These results would indicate that a high degree of agreement (p = .540) between the perceptions of administrators exists for the statements of the survey related to S2 (Supervise and Evaluate Instruction) averages when controlling for school achievement status (F = 1.624) (See Table 18).

Using S3's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (p = .081). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S3, the mean square has an average of .738 and p value of .081. Although nearly significant, this result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of administrators for the function of monitoring student progress after controlling for the possible effect of school achievement status (mean square = .738, F = 2.731, and p = .081). These results would indicate that a degree of agreement (p = .081) between the perceptions of administrators exists for the statements of the survey related to S3 (Monitors Student Progress) averages when controlling for school achievement status (F = 2.731) (See Table 18).

Using S4's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (p = .355). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S4, the mean square has an average of .283 and p value of .355. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of administrators for the function of protecting instructional time after controlling for

the possible effect of school achievement status (mean square = .283, F = 1.073, and *p* = .355). These results would indicate that a high degree of agreement (*p* = .355) between the perceptions of administrators exists for the statements of the survey related to S4 (Protects Instructional Time) averages when controlling for school achievement status (F = 1.073) (See Table 18).

Using S5's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (*p* = .973). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S5, the mean square has an average of .283 and *p* value of .973. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of administrators for the function of providing incentives for teachers after controlling for the possible effect of school achievement status (mean square = .007, F = .027, and *p* = .973). These results would indicate that a high degree of agreement (*p* = .973) between the perceptions of administrators exists for the statements of the survey related to S5 (Provide Incentives for Teachers) averages when controlling for school achievement status (F = .027) (See Table 18).

Using S6's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (*p* = .437). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S6, the mean square has an average of .221 and *p* value of .437. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of administrators for the function of providing professional development after controlling for the possible effect of school achievement status (mean square = .221, F = .850, and *p* = .437). These results would indicate that a high degree of agreement (*p* = .437) between

the perceptions of administrators exists for the statements of the survey related to S6 (Provide Professional Development) averages when controlling for school achievement status (F = .850) (See Table 18).

Using Total Average as the dependent variable resulted in an indication that the Corrected Model is non-significant (p = .407). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for Total Average, the mean square has an average of .111 and p value of .407. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of administrators for Total Average after controlling for the possible effect of school achievement status (mean square = .111, F = .926, and p = .407). These results would indicate that a high degree of agreement (p = .407) between the perceptions of administrators exists for the statements of the survey related to Total Average when controlling for school achievement status (F = .926) (See Table 18).

Table 18.

MANOVA Tests of Between-Subjects Effects of Middle School Administrators

Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	S1 Avg	.806	2	.403	1.624	.214	.098
	S2 Avg	.269	2	.135	.629	.540	.040
	S3 Avg	1.476	2	.738	2.731	.081	.154
	S4 Avg	.566	2	.283	1.073	.355	.067
	S5 Avg	.014	2	.007	.027	.973	.002
	S6 Avg	.442	2	.211	.850	.437	.054
	Total Avg	.221	2	.111	.926	.407	.058
Intercept	S1 Avg	520.575	1	520.575	2098.621	.000	.058
	S2 Avg	548.674	1	548.674	2562.252	.000	.986
	S3 Avg	462.485	1	462.485	1711.873	.000	.988
	S4 Avg	556.771	1	556.771	2112.812	.000	.983
	S5 Avg	434.876	1	434.876	1711.530	.000	.986
	S6 Avg	463.230	1	463.230	1783.149	.000	.983
	Total Avg	496.679	1	496.679	4161.786	.000	.993
Sch. Status	S1 Avg	.806	2	.403	1.624	.214	.098
	S2 Avg	.269	2	.135	.629	.540	.040
	S3 Avg	1.476	2	.738	2.731	.081	.154
	S4 Avg	.566	2	.283	1.073	.355	.067
	S5 Avg	.014	2	.007	.027	.973	.002
	S6 Avg	.442	2	.221	.850	.437	.054
	Total Avg	.221	2	.111	.926	.407	.058
Error	S1 Avg	7.442	30	.248			
	S2 Avg	6.424	30	.214			
	S3 Avg	8.105	30	.270			
	S4 Avg	7.906	30	.264			
	S5 Avg	7.623	30	.254			
	S6 Avg	7.793	30	.260			
	Total Avg	3.580	30	.119			
Total	S1 Avg	544.278	33				
	S2 Avg	570.480	33				
	S3 Avg	480.040	33				
	S4 Avg	580.000	33				
	S5 Avg	458.667	33				
	S6 Avg	487.800	33				
	Total Avg	514.785	33				
Corrected Total	S1 Avg	8.247	33				
	S2 Avg	6.693	32				
	S3 Avg	9.581	32				
	S4 Avg	8.741	32				
	S5 Avg	7.636	32				
	S6 Avg	8.235	32				
	Total Avg	3.801	32				

Since no significant difference was found in the MANOVA, a Post Hoc analysis was not conducted (Williams & Abdi, 2010).

Table 19 offers the descriptive statistics of the middle school teachers relative to the dependent variables for each function of instructional leadership (S1 Communicate School Progress, S2 Supervise and Evaluate Instruction, S3 Monitors Student Progress, S4 Protects Instructional Time, S5 Provide Incentives for Teachers, and S6 Provide Professional Development) as well as the total average of all functions combined. The independent factor is school achievement status.

Table 19.

Descriptive Statistics of Teachers' Perceptions by Level of School Achievement

Dependent Variable	School Status	Mean	Std. Deviation	N
S1 Avg	1.0	3.85	.586	66
	2.0	3.98	.676	51
	3.0	4.10	.703	36
	Total	3.95	.649	153
S2 Avg	1.0	3.51	.833	66
	2.0	3.65	.801	51
	3.0	3.88	.932	36
	Total	3.64	.854	153
S3 Avg	1.0	3.70	.669	66
	2.0	3.77	.761	51
	3.0	3.74	.897	36
	Total	3.73	.754	153
S4 Avg	1.0	3.60	.750	66
	2.0	3.68	.745	51
	3.0	3.80	.736	36
	Total	3.67	.744	153
S5 Avg	1.0	3.18	.934	66
	2.0	3.16	.880	51
	3.0	3.40	.985	36
	Total	3.23	.928	153
S6 Avg	1.0	3.27	.877	66
	2.0	3.41	.866	51
	3.0	3.71	.987	36
	Total	3.42	.911	153
Total Avg	1.0	3.52	.636	66
	2.0	3.61	.652	51
	3.0	3.77	.790	36
	Total	3.61	.683	153

Table 20 reveals that there was no significant differences in the perceptions of the teachers for functions of instructional leadership practice based on school achievement status, F = 1.397, p = .166; Pillai's Trace = 0.109, partial Eta = .054.

Table 20.

Multivariate Test: Pillai's Trace of School Achievement Status

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	.977	1020.390	6.000	145.000	.000	.977
Sch. Status	.109	1.397	12.000	292.000	.166	.054

A One-way between subjects MANOVA was conducted to compare the effect of school achievement status (IV) on the perceptions of teachers for functions of instructional leadership practices toward differentiated instruction among middle school teachers at high, middle, and low achieving schools. Using S1's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (p = .159). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S1, the mean square has an average of .776 and p value of .159. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of teachers for the function of communicating school goals after controlling for the possible effect of school achievement status (mean square = .776, F = 1.865, and p = .159). These results would indicate that a high degree of agreement (p = 1.865) between the perceptions of teachers exists for the statements of the survey related to S1 (Communicate School Goals) averages when controlling for school achievement status (F = 1.865) (See Table 21).

Using S2's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (p = .113). This statistic shows that the model used for this analysis is

inappropriate to predict statistical differences. When examining the School Status row for S2, the mean square has an average of 1.584 and *p* value of .113. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of teachers for the function of supervising and evaluating instruction after controlling for the possible effect of school achievement status (mean square = 1.584, F = 2.208, and p = .113). These results would indicate that a high degree of agreement (p = .113) between the perceptions of teachers exists for the statements of the survey related to S2 (Supervise and Evaluate Instruction) averages when controlling for school achievement status (F = 1.584) (See Table 21).

Using S3's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (p = .877). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S3, the mean square has an average of .075 and *p* value of .877. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of teachers for the function of monitoring student progress after controlling for the possible effect of school achievement status (mean square = .075, F = .131, and p = .877). These results would indicate that a high degree of agreement (p = .877) between the perceptions of teachers for the statements of the survey related to S3 (Monitors Student Progress) averages when controlling for school achievement status (F = .131) (See Table 21).

Using S4's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (p = .431). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S4, the mean square has an average of .470 and *p* value of .431. This result means that all comparison in

this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of teachers for the function of protecting instructional time after controlling for the possible effect of school achievement status (mean square = .403, F = .847, and *p* = .431). These results would indicate that a high degree of agreement (*p* = .431) between the perceptions of teachers exists for the statements of the survey related to S4 (Protect Instructional Time) averages when controlling for school achievement status (F = .847) (See Table 21)

Using S5's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (*p* = .447). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S5, the mean square has an average of .698 and *p* value of .447. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of teachers for the function of providing incentives for teachers after controlling for the possible effect of school achievement status (mean square = .698, F = .809, and *p* = .447). These results would indicate that a high degree of agreement (*p* = .447) between the perceptions of teachers exists for the statements of the survey related to S5 (Provide Incentives for Teachers) averages when controlling for school achievement status (F = .809) (See Table 21).

Using S6's averages as the dependent variable resulted in an indication that the Corrected Model is non-significant (*p* = .066). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S6, the mean square has an average of 2.247 and *p* value of .066. This result means that all comparison in this analysis are non-significant. Although nearly significant, no statistical significance existed among the perceptions of teachers for the function of providing professional development after controlling for the possible effect of school achievement status (mean square = 2.247, F = 1.624,

and p = .066). These results would indicate that a high degree of agreement (p = .066) between the perceptions of teachers exists for the statements of the survey related to S6 (Provide for Professional Development) averages when controlling for school achievement status (F = 2.247) (See Table 21).

Using Total Average as the dependent variable resulted in an indication that the Corrected Model is non-significant (p = .203). This statistic shows that the model used for this analysis is inappropriate to predict statistical differences. When examining the School Status row for S1, the mean square has an average of .745 and p value of .203. This result means that all comparison in this analysis are non-significant. Therefore, no statistical significance existed among the perceptions of teachers for the Total Average after controlling for the possible effect of school achievement status (mean square = .745, F = 1.609, and p = .203). These results would indicate that a high degree of agreement (p = .203) between the perceptions of teachers exists for the statements of the survey related to Total Average when controlling for school achievement status (F = 1.609) (See Table 21).

Table 21.

MANOVA Tests of Between-Subjects Effects of Middle School Teachers

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	S1 Avg	1.552	2	.776	1.624	.159	.024
	S2 Avg	3.168	2	1.584	.629	.113	.029
	S3 Avg	.151	2	.075	2.731	.877	.002
	S4 Avg	.941	2	.470	1.073	.431	.011
	S5 Avg	1.396	2	.698	.027	.447	.011
	S6 Avg	4.493	2	2.247	.850	.066	.036
	Total Avg	1.490	2	.745	.926	.203	.021
Intercept	S1 Avg	2274.641	1	2274.641	5464.285	.000	.973
	S2 Avg	1946.804	1	1946.804	2713.850	.000	.948
	S3 Avg	2007.455	1	2007.455	3493.464	.000	.959
	S4 Avg	1960.260	1	1960.260	3530.787	.000	.959
	S5 Avg	1518.029	1	1518.029	1759.470	.000	.921
	S6 Avg	1722.908	1	1722.908	2125.606	.000	.934
	Total Avg	1897.547	1	1897.547	4098.437	.000	.965
Sch. Status	S1 Avg	1.552	2	.776	1.865	.159	.024
	S2 Avg	3.168	2	1.584	2.208	.113	.029
	S3 Avg	151	2	.075	.131	.877	.002
	S4 Avg	.941	2	.470	.847	.431	.011
	S5 Avg	1.396	2	.698	.809	.447	.011
	S6 Avg	4.493	2	2.247	2.772	.066	.036
	Total Avg	1.490	2	.745	1.609	.203	.021
Error	S1 Avg	62.441	150	.416			
	S2 Avg	107.604	150	.717			
	S3 Avg	86.195	150	.575			
	S4 Avg	83.279	150	.555			
	S5 Avg	129.416	150	.863			
	S6 Avg	4.493	150	.811			
	Total Avg	1.490	150	.463			
Total	S1 Avg	2452.361	153				
	S2 Avg	2140.000	153				
	S3 Avg	2215.840	153				
	S4 Avg	2146.11	153				
	S5 Avg	1723.667	153				
	S6 Avg	1912.480	153				
	Total Avg	2060.825	153				
Corrected Total	S1 Avg	63.993	152				
	S2 Avg	110.772	152				
	S3 Avg	86.219	152				
	S4 Avg	84.219	152				
	S5 Avg	130.812	152				
	S6 Avg	126.076	152				
	Total Avg	70.939	152				

Since no significant difference was found in the MANOVA, a Post Hoc analysis was not conducted (Williams & Abdi, 2010).

Summary

The purpose of this study was to identify, from the perspectives of administrators and teachers, functions of instructional leadership practice used by middle school administrators in support of teachers' approaches towards differentiation in the classroom. The study centered on responses to a perception survey. This research found that middle school administrators and teachers within the participating school district perceived a high degree of agreement with the statements of the perception survey across the six functions and 27 practices of instructional leadership in support of differentiated instruction.

The researcher determined if there were statistically significant differences in perceptions between school administrators and teachers based on the effect of demographic data of the participants along with school achievement status. The researcher found no statistically significant differences in the average mean scores of the middle school administrators and teachers in two of the six subset comparisons. However, a comparison of four of the six subset along with the total average perceptions of administrators and teachers indicated a significant difference at .05 level.

Lastly, the research found no statistically significant difference in instructional leadership toward differentiated instruction as perceived by middle school administrators and teachers relative to average mean scores among schools of different achievement levels.

Following this chapter, in Chapter 5, the researcher provides a discussion on the findings, implications for the study, recommendations for future investigation, and offer a conclusion relative to the purpose of the research.

CHAPTER 5

DISCUSSION, IMPLICATIONS, RECOMMENDATIONS, and CONCLUSION

A study was conducted to identify functions of instructional leadership as perceived by school administrators and teachers that support the implementation of differentiated instruction in the middle school classroom. This chapter offers a summary of the major findings, discussion, implications, recommendations, and conclusions of this research study. The importance and significance of the study are discussed within the context of the theoretical and conceptual frameworks. Additionally, this chapter provides a reflection on the limitations of the research design and methodology. A discussion follows contemplating the potential for future research relative to the perceptions of middle school administrators and teachers for the enacted and observed functions of instructional leadership practice that support the implementation of differentiated instruction. Ultimately, the study concludes with the researcher's editorial in reflection upon the "perceptual congruency" between school administrators and teachers and the capacity to plan for and implement differentiated instruction (Ham, Duyar, & Gumus, 2015, p. 240).

Significance of the Study Relative to the Theoretical and Conceptual Frameworks

The purpose of this study was to identify functions of instructional leadership used by school administrators in support of teachers' approaches towards differentiation in the middle school classroom. This study distinctly concentrated on school administrators' and teachers' perceptions of the extent that functions of instructional leadership were enacted and observed within their school settings.

The significance of this study, when viewed through the lens of Social Constructivist Theory, as put forth by Kim (2001), adds to the knowledge of instructional leadership practice.

According to Kim (2001), in Social Constructivist Theory, reality is constructed through human activity and meaning created through interaction. This study sought to examine the degree of agreement in the perceptions of school administrators and teachers shaped by daily interactions relative to the extent that functions of instructional leadership associated with the implementation of differentiated instruction were experienced in their school settings. In doing so, specific functions of instructional leadership supporting the practice of differentiation were identified.

In contrast, levels of disagreement in the perceptions of school administrators and teachers for the functions of instructional leadership practice derived from this study can generate an awareness amongst school administrators that different realities exist. Recognition that self-other agreement of a school administrators' instructional leadership "is an important concept in the form of self-awareness toward increasing the effectiveness of leaders" to increase the level of interaction with teachers in planning for implementation (Ham et al., 2015, p. 227). By becoming conscious of the differences in perception, leaders may better direct administrative support to offset what researchers have reported as teachers unwillingness to employ differentiation in their classroom practices (De Neve, Devos, & Tuytens, 2014; Goddard et al., 2010; Hertberg-Davis, 2009; Smit & Humpert, 2012; Tomlinson, 2002; Van Tassel-Baska & Stambaugh, 2005). According to Ham et al. (2015).

The conceptual framework provided the narrative for this study (Miles & Huberman, 1994). This study's conceptual framework offered a potentially unconsidered relationship connecting the literature on instructional leadership in support of differentiation with Standard 4 (Differentiated Instruction) of the State of Georgia's Teacher Keys of Effectiveness System. Within the context of the significance of the study in contributing to an understanding of how to support teachers' implementation of differentiation, the constructs of the conceptual framework

guided the research plan toward identifying from the literature a narrow set of functions of instructional leadership supportive of the implementation of differentiated instruction.

Summary of Major Findings

Research Question 1: What are instructional leadership practices toward differentiated instruction as perceived by middle school administrators and teachers?

Middle school administrators and teachers within the participating school district perceived a high degree of agreement of the positive statements in the survey across the six functions and 27 practices of instructional leadership in support of differentiated instruction. Data from the quantitative survey indicated that the school administrators agreed with the extent that they communicate school goals (M = 4.03), supervise and evaluate instruction (M = 4.14), monitor student progress (M = 3.79), protect instructional time (M = 4.17), provide incentives for teachers (M 3.72), provide professional development (M = 3.83), and in total average (M = 3.95). The findings are reflective of the functions of instructional leadership school administrators believe they enact in support of teachers' implementation of differentiated instruction. Likewise, it is fair to assert that the findings associated with the teachers' perceptions of instructional leadership are reflective of what teachers believe they experience in their own school settings. Data from the quantitative survey indicated that the teachers agreed with the extent that their school administrators communicate school goals (M = 3.96), supervise and evaluate instruction (M = 3.65), monitor student progress (M = 3.77), protect instructional time (M = 3.68), provide incentives for teachers (M 3.28), provide professional development (M = 3.47), and in total average (M = 3.61).

Therefore, based on the participants' degree of agreement for the positive statements in the perception survey, the study has identified six functions and 27 instructional leadership practices reflected in the literature that support differentiated instruction in the classroom.

Research Question 2: Are there any significant differences in instructional leadership as perceived by middle school administrators and teachers?

The combined data sets from the middle school administrators' and teachers' surveys were analyzed through a One-way Multivariate Analysis of Covariance (MANCOVA). The analysis compared the perceptions of administrators with those of the teachers to examine if significant differences exist. Participants' gender and teaching experience were used as covariates to minimize their possible influence on their perceptions. Multivariate testing along with quantitative data analysis indicated no statistically significant differences in the average mean scores of the middle school administrators and teachers in two of the six subset comparisons.

Subset 1, Communicate School Progress (S1). Using the averages from Subset 1, the results indicated that no statistically significant difference existed between the perceptions of administrators and teachers in communicating school progress (F = .272, and p = .603) when the possible effects of gender (F = .874) and teaching experience (F = .078) were controlled. Quantitative data indicated a high degree of agreement between the administrators and teachers for the statements of the survey related to communicating school progress.

Subset 3, Monitors Student Progress (S3). Averages from Subset 3 indicated that no statistically significant difference existed between the perceptions of administrators and teachers in monitoring school progress (F = .030, and p = .864) when the possible effects of gender (F = 2.431) and teaching experience (F = .276) were controlled. Again as in S1, quantitative data

indicated a high degree of agreement between the administrators and teachers existed for the statements of the survey related to monitoring student progress.

However, a comparison of the total average perceptions of administrators and teachers indicated a significant difference at .05 level. More specifically, middle school teachers' were not in agreement with school administrators as concerns statements of the survey associated with the following:

- supervise and evaluate instruction
- protect instructional time
- provide incentives for teachers
- provide professional development

Subset 2, Supervision and Evaluation of Instruction (S2). Using the averages from Subset 2, the results indicated that a statistically significant difference existed between the perceptions of administrators and teachers in supervising and evaluating instruction (F = 10.122, and p = .002) when the possible effects of gender (F = 1.646) and teaching experience (F = .078) were controlled. Multivariate testing and quantitative data indicated a high degree of disagreement between the administrators and teachers for the statements of the survey related to supervision and evaluation of instruction.

Subset 4, Protects Instructional Time (S4). Using the averages from Subset 4, the results indicated that a statistically significant difference existed between the perceptions of administrators and teachers in protecting for instructional time (F = .030, and p = .001) when the possible effects of gender (F = .193) and teaching experience (F = .958) were controlled. Multivariate testing and quantitative data indicated a high degree of disagreement between the

administrators and teachers for the statements of the survey related to protect for instructional time.

Subset 5, Provide Incentives for Teachers (S5). Using the averages from Subset 5, the results indicated that statistically significant difference existed between the perceptions of administrators and teachers in providing incentives for teachers (F = 7.842, and p = .006) when the possible effects of gender (F = 1.433) and teaching experience (F = .040) were controlled. Multivariate testing and quantitative data indicated a high degree of disagreement between the administrators and teachers for the statements of the survey related to provide incentives for teachers.

Subset 6, Provide Professional Development (S6). Results derived from the averages from Subset 6 indicated that a statistically significant difference existed between the perceptions of administrators and teachers in providing professional development (F = 2.564, and p = .027) when the possible effects of gender (F = 1.781) and teaching experience (F = 1.272) were controlled. Multivariate testing and quantitative data indicated a degree of disagreement between the administrators and teachers for the statements of the survey related to providing professional development.

Total Average of Subsets. Using the total averages of subsets 1, 2, 3, 4, 5, and 6, the results of the One-way MANCOVA indicated that a statistically significant difference existed between the perceptions of administrators and teachers (F = 6.494, and p = .012) when the possible effects of gender (F = 1.857) and teaching experience (F = .227) were controlled. Multivariate testing and quantitative data indicated an overall high degree of disagreement between the administrators and teachers for the statements of the survey related to communicating school goals, supervising and evaluating instruction, monitoring student

progress, protecting instructional time, providing incentives for teachers, and in providing professional development.

In summary, the survey statements associated with communicating school progress, and monitoring student progress were perceived by the administrators and teachers as extensive functions of instructional leadership occurring in their schools. In contrast, the statistically significant differences in perceptions of administrators and teachers of the survey statements relative to supervision and evaluation of instruction, protection of instructional time, providing incentives for teachers, and in providing staff development were consequently perceived by teachers as not being experienced to the same extent as believed by administrators to be in practice. Additionally, the claim that the statistically significant differences indicated in S2, 4, 5, 6, and Total Average were not reflective of chance were supported by the statistics derived from Cohen's D test for effect size.

Research Question 3: Are there any significant differences in school administrators and teacher perceived instructional leadership toward differentiated instruction among high, middle, and low achieving schools?

In answering Research Question 3, a One-way MANOVA was utilized to take into account the three levels of school achievement status. Quantitative data analysis revealed no statistically significant differences in the perceptions of middle school administrators and teachers for instructional leadership toward differentiated instruction relative to average mean scores among schools of different achievement status.

Pillai's Trace multivariate test and the outcomes generated by the one-way MANOVA revealed that school achievement status was not a determining factor in revealing any of the

significant differences in perceptions among school administrators and teachers from high, middle, and low achieving schools for instructional leadership toward differentiated instruction.

Discussion

In framing the context of the findings, literature associated with the study's theoretical framework (Fullan, 1999, 2001; Kin & Kareem, 2016) offered that a critical factor in the success of innovations, such as differentiated instruction, may well hinge on teachers' perceptions of the change agents involved in implementing educational initiatives. Following this line of thinking, it becomes the responsibility of the leader to manage stakeholders' perceptions by including those insights in adapting functions indicated by feedback as not being extensive in their leadership practices (Maxwell, 2005).

Communicating School Goals

Based on the findings of this research, both middle school administrators and teachers strongly agreed with the statements of the survey.

The findings of the study align with the review of the literature. Hallinger and Murphy (1985) and Hallinger and Heck (1998) listed framing and communicating school goals as one of eight functions that comprise the principals' instructional leadership expressed in terms of performance targets. Other researchers recommended that instructional leaders frequently engage in discussion of performance targets that would include student achievement data, staff responsibilities in achieving objectives, and a review of the school's most crucial goals in improving teaching and learning (Brookover et al., 1982; Leithwood, Day, Sammons, Hopkins, & Harris, 2006). The dialogical processes involving communication, thoughts, language, and ideas relative to social constructivist theory are where understanding and meaning are created through interaction (Baktin, 1981; Posthilm & Rokkones, 2015).

Supervise and Evaluate Instruction

Supervision and evaluation is a cornerstone function of both Georgia's Teacher Keys Effectiveness System (TKES) and as regards the concept of instructional leadership in which school administrators ensure that teachers' classroom priorities are aligned with school goals, and conduct classroom observations to provide teachers with feedback on instructional practices (Hallinger & Murphy, 1987a, 1987b). For the purposes of this research, the instructional leadership practices associated with supervision and evaluation were framed by the expectations for teacher practice embodied in the TKES instrument (Georgia Department of Education [GaDOE], 2012).

Based on the findings of this study, there was a statistically significant difference found between the perceptions of administrators and teachers in the function of supervising and evaluating instruction when the possible effect of gender and teaching experience are controlled. Teachers did not agree to what the administrators claimed they did in supervision and evaluation of instruction. Most of the current researchers stated that school administrators should closely supervise and evaluate instruction. Hallinger and Murphy (1985) emphasized the importance of supervision and evaluation to the instructional leadership dimension of managing the instructional program. Goddard et al. (2010), MacAdmis (2001), Page (2000), and Petig (2000) asserted that the implementation of differentiated instruction required long-range planning to sustain the innovation through evaluation of teachers' approaches towards differentiating instruction.

The Georgia Department of Education (GaDOE, 2012), in Standard 4 of the TKES instrument, placed great importance on teachers differentiating instruction to meet the needs of diverse learners. In doing so, the role of the instructional leader in supervising, observing, and

providing feedback (May & Huff, 2009) on teachers' instructional practice through evaluation is paramount in sustaining the implementation of differentiated instruction as mandated in Standard 4 of the TKES instrument. Southworth (2009) argued that a significant portion of instructional leadership impacts teaching performance as seen through monitoring instruction that leads to effective instruction.

Teachers' perceptions that their instructional leader did not emphasize differentiated instruction through the function of supervision and evaluation of instruction may be indicative of the findings from researchers examining principals' perceptions of TKES. Eady and Zepeda (2007) concluded that the conditions imposed by accountability policy required principals to gain a broader knowledge of the formative processes of evaluating and supervising teachers to improve instruction. TKES is the "corner stone" of this study's conceptual model as well as being relevant to the theoretical framework. TKES is seen by the researcher as the "hub" of the interactions focused on instructional practices. Perceptual incongruence or misalignment of beliefs and attitudes held for an innovation by principals can contribute to creating an obstacle for its implementation (Gronlund & Anderson, 2015).

Monitor Student Progress

Monitoring student progress is an instructional leadership function in which school administrators engage faculty in discussions based on weaknesses and strengths associated with student academic data and informs all stakeholders of student progress on standardized assessments (Hallinger & Murphy, 1985).

The findings of this research revealed both middle school administrators and teachers strongly agreed with the statements of the survey. The findings support the recommendations of Day, Harris and Hadfield (2007), Hallinger and Heck (1998), Hopkins (2001), May and Huff

(2009), Mendez-Morse (2015), Noonan and Hellsten, (2013)Stronge and Castano (2008), and Southworth (2009, 2011), - that a function of instructional leadership practices include monitoring student progress through the use of data for the expressed purpose of informing instruction. Specifically, the review of the literature produced two studies that suggested instructional leaders consider data teams to support teachers in monitoring student progress. Day et al. (2007) identified what they believed to be the most effective practices within the components of instructional leadership to involve teachers in the use of data team process to impact teaching and learning. In addition, Noonan and Hellsten (2013) indicated that instructional leadership involved the development of teachers' abilities to collaborate for the planning of instruction and assessment through the use of data.

The findings derived from subset 2 reflect aspects of the theoretical framework. Administrators working closely and collaboratively with teachers in the data team process promotes a sharing of knowledge and an application for teachers' learning. A high degree of agreement in the perceptions of administrators and teachers for the positive statements of the survey items that make up subset 2 may be a result of such collaborative interactions.

Protect Instructional Time

Protecting instructional time is an instructional leadership function in which school administrators actively ensure that instructional time is free of interruption from non-academically related activities and maximized by teachers for the purposes of focusing on issues related to curriculum and instruction (Hallinger & Murphy, 1987a, 1987b). Bossert, Dwyer, Rowan, and Lee (1982), Hallinger and Heck (1998), Lasley and Wayson (1982), Noonan and Hellsten (2013), and O'Donnell and White (2005) who purported that instructional leadership involved protection of instructional time that is free from interference from unnecessary

interruptions and to allow teachers to develop approaches toward differentiating instruction unimpeded by non-academic distractions.

The findings of this study indicated there was a statistically significant difference found in the perceptions of administrators and teachers in the function of protecting instructional time when the possible effect of gender and teaching experience are controlled. This perceptual incongruence may be influenced by teachers' beliefs that they are not being experiencing functions of instructional leadership that protect instructional time to the same extent as believed by administrators to be in practice.

Provide Incentives for Teachers

Providing incentives for teachers is an instructional leadership function in which school administrators develop and sustain a system for recognition of teachers for performance, contribution, and reward (Hallinger & Murphy, 1987a, 1987b).

Based on the findings of this study, there was a statistically significant difference found to exist in the perceptions of administrators and teachers in the function of providing incentives for teachers when the possible effect of gender and teaching experience are controlled. The findings reflect a high degree of disagreement between the administrators and teachers existed for the statements of the survey related to provide incentives for teachers.

In this study, teachers perceived that school administrators did not provide them with incentives as they believed they did. Reflecting back to Fullan's (2001) assertion that teachers' perceptions of leaders involved in change is key to successfully bringing about implementation. Research on the topic reveals that school administrators should incentivize teachers. Anderson (1982) and eithwood and Beatty (2008) claimed that leadership motivates staff through praise and recognition resulting in promoting a positive school climate. O'Donnell and White (2005)

tested teachers' perceptions of instructional leadership and found that providing incentives for teachers was a key function of instructional leadership toward encouraging teacher professional growth. Tomlinson (2005) observed that leaders could help offset challenges to differentiated instruction by providing teachers with incentives to develop the knowledge of how to differentiate.

Provide Professional Development

Providing professional development for teachers is an instructional leadership function in which school administrators provide for a process of improving the skills and competencies of educators needed to improve teaching and student learning outcomes (Hassel, 1999) through training and education. Hallinger and Murphy (1987a, 1987b) offered that professional development focused on instruction be aligned with the school's goals, have active participation by leadership alongside staff, and incorporate teachers' suggestions into the planning of professional development.

The findings of this research revealed both middle school administrators and teachers disagreed with the statements of the survey and in testing for the existence of any statistically significant differences between perceptions. The findings are not aligned to the recommendations of Blasé and Blasé (1998), Hallinger and Heck (1998), O'Donell and White (2005), May and Huff (2009), and Noonan and Hellsten, (2013) who suggested that a function of instructional leadership practices include providing professional development in order to sustain teacher practice and encouraging teachers to embrace innovations such as differentiated instruction toward becoming school norms of practice.

As regards the significance of the findings from subset 6 to the theoretical framework, perceptual incongruences in the perceptions of the participants for professional development can

be seen to have implications for school capacity. As Ham et al. (2015) had indicated that a focus on "principal-teacher congruence is an important aspect of school capacity" (p. 240). Perceptual disagreement observed in subset 6 has organizational ramifications. The research discussed in reflection on subset 6 advances the notion that administrators beware that teacher learning outcomes from professional development have the potential to augment school capacity toward implementation or in sustaining an innovation.

Reflecting on the Total Averages of all Subsets

The last major finding of this research study involved a comparison of the total average of all subsets. Perceptions of administrators and teachers indicated a significant difference at .05 level. The study found that a statistically significant difference existed between the perceptions of the administrators and teachers when responding to the statements of the survey on instructional leadership toward differentiation. These results indicate that teachers' perceptions reflect that they are not experiencing the functions of instructional leadership to the same extent as perceived by leadership to be in practice. Therefore, it becomes the responsibility of the leaders to manage stakeholders' perceptions by including those functions as indicated by the data as not being extensive in their instructional leadership practices (Maxwell, 2005).

The findings of this study are not in total agreement with current literature. The literature involving instructional leadership practices as seen as supportive of teachers' implementation of differentiated instruction (Carolan &Guinn, 2007; Hertberg-Davis & Brighton, 2006; Tomlinson, 2005; Robinson, Maldonado, & Whaley, 2014) clearly indicated the need for instructional leadership to include: communicate school goals, supervise and evaluate instruction, monitor student progress, protect instructional time, provide incentives for teachers, as well as provide for professional development (Hallinger & Heck, 1998).

Conversely, the findings do support the researcher's assertion for the need and significance of the study. Scholars have recommended future research examine principals' influences on sustaining differentiated instruction as a focus and priority in the classroom. By identifying six functions of instructional leadership and 27 practices agreed upon by both administrators and teachers as being supportive of teachers' implementation of differentiated instruction, this study added to the knowledge of how best to support and develop teachers' commitment and expertise in differentiating instruction over time (Hertberg-Davis & Brighton, 2006). Generating an awareness of instructional leadership practices, which facilitates the implementation of differentiated instruction, better directs administrative support in an effort to offset teachers' displays of unwillingness to employ differentiation in their classroom practices (De Neve, Devos, & Tuytens, 2014; Goddard et al., 2010; Hertberg-Davis, 2009; Smit & Humpert, 2012; Tomlinson, 2002; Van Tassel-Baska & Stambaugh, 2005).

The findings of this research study raise one essential question. What happens when leaders believe they are practicing functions of instructional leadership in support of differentiated instruction, but the teachers disagree? From a theoretical perspective, misconceptions held by school administrators for their instructional leadership practice can be conceived of as negatively impacting on teachers' willingness to implement an innovation through a perceived lack of administrative support in critical areas. Therefore, the results of this study call to the attention of school administrators that differences may exist between the perceptions of themselves and teachers for the extensiveness of the functions of their instructional leadership practice.

Implications of Effect Size on the Practicality of the Findings

Effect size testing was done to indicate the magnitude of the results obtained from the One-way MANCOVA (See Table 15). Effect size quantified the size of the differences between the perceptions of the middle school administrators and teachers for the statements of the survey. Using Cohen's *d*, the standard interpretation of the meaning of the effect size in sub-sets 2, 4, 5, 6, and Total Average indicated a moderate effect. Cohen's (1988) terminology can be used to assert that the importance of the findings are neither trivial or nor substantial. However, the researcher can reasonably purport that on average moderate differences can be seen to exist between the perceptions of administrators and teachers for the statements of the survey. In terms of practical significance, the importance of the findings associated with Research Question 2 do not rise to the level of a substantially large difference. Therefore, the differences in the perceptions of the administrators and teachers for the survey statements in sub-sets 2, 4, 5, 6, and Total Average are not so far apart as to indicate that there is a total absence of instructional leadership towards differentiated instruction.

Limitations of the Study

In the course of conducting this research study, limitations to this study were encountered based on the following methodological issues associated with survey research (Vogt, 2007). The researcher acknowledges the following:

- Only one school district was used, thus limiting the scope.
    - Findings were subject to the limitations of the data collection approach as directed by the participating school district's Institutional Review Board. Having to launch the survey through a second party (e.g., school principals) created delays in the launch of the survey. The nature of the principals'

schedules and the vast amount of emails that principals must read created lapses in communication between the researcher and principals. This especially compounded answering principals' questions about the intent of the survey and procedures associated with launching the survey. In the end, this limitation to the data collection approach in many cases severely impacted timely access to the target population. Continuing on along this line of thinking, findings from Research Question 3 may have been limited by not continuing the model of control variables used in Research Questions 1 and 2 (IE gender and years of teaching experience) combined with school achievement status. Also, additional demographic data could have been collected as seen in the literature to be effective in obtaining significant differences in perception. Ham et al. (2015) utilized the type of degree held by school administrators in examining self-efficacy as an instructional leader. The authors' findings revealed that administrators with advanced degrees self-assessed their instructional leadership higher than did their counterparts.

- Participation in the survey was impacted by the timing of study in context with the school district's calendar year of events. The survey window was preceded by an important teachers' survey of leadership, various other CCRPI related surveys, as well as a week-long school holiday.
- "Survey fatigue", given the number of surveys required by the state and or district to be taken by administrators and teachers, may have predisposed participants not to complete the survey after having accepted to participate (Backor, Golde, & Nie, 2007).

- The attempt in itself to survey all middle school administrators and teachers willing to respond and complete the survey resulted in a smaller than anticipated number of participants. These numbers were further eroded by the number of school principals declining or opting out of participation in the study and the total number of participants who agreed to be surveyed yet did not complete the questionnaire.
- It may be argued that school administrators may not be focused on differentiated instruction as their primary goal. Instructional goals may vary by degree for different leaders and their teams.

Implications

Differentiated instruction is an effective approach at targeting tailored instruction toward the diverse learning needs of students. Research-based functions of instructional leadership exist to offset challenges in support of teachers' implementation of differentiated instruction. Yet, based on the findings of this study, it appears that some aspects of practice may be taken for granted by school administrators. Of the four functions of instructional leadership practice identified by teachers' perception of the administrators, supervision and evaluation of instruction is the critical junction for the interactions between school administrators and teachers. More specifically, teacher evaluation provides opportunity for the instructional leader to interact with teachers for the purposes of assessment, engage in professional discussions on the topic of effective instruction, and plan for professional development to improve practice. It can be suggested that administrators and teachers form their perceptions of the others' practices within the context of teacher evaluation.

Remembering the words of Zepeda (2015),

> teacher evaluation aspires to focus on accountability", but "more purposefully, teacher evaluation systems engage leaders to enact their role of ensuring the instructional programs are being carried out by a competent teacher and that underperforming teachers are able to get the support they need to improve. (p. 37)

What, then, if school administrators are unaware of the limitations of their engagement in this aspect of instructional leadership? The research on differentiated instruction offered that teachers lacking sufficient support tend to perpetuate myths and misconceptions resulting in an infrequent implementation of the innovation. Worse yet, teachers not receiving specific feedback on their approaches toward differentiation may not develop the self-efficacy necessary to sustain an effective practice.

Three other functions of instructional leadership were identified by the teachers' perception of the administrators' practices. Protecting instructional time and providing incentives for teachers relative to the implementation of differentiated instruction have implications towards sustaining teacher practice and professional growth. Teachers require uninterrupted planning and teaching to develop the necessary skills to bring differentiated instruction into a norm of practice. The research suggested that instructional leaders engage in long-range planning for the implementation of differentiation. Professional development opportunities allow for teachers to affirm aspects of practice, receive training, and demonstrate informal aspects of teacher leadership that can add additional layers of peer coaching. Given the demands for teacher accountability and the pace of standardized curricula, it would be unwise for school administrators to overlook the importance of time in developing teachers' knowledge of how to differentiate instruction and the promote teachers' use of data in determining related strategies.

Likewise, instructional leadership that provides incentives for teachers can motivate staffs to implement new innovations and reduce the individuals' reluctance to change.

Leaderships' recognition of effective teaching promotes the sharing of knowledge and experiences that can directly lead to sustaining others struggling to implement differentiated instruction. When considering Fullan (2001), teachers are the single-most principal school-based actor in determining the results of the change process. Why then would school administrators assume the needs of the individual teacher is being met?

Overall, the findings of this research would suggest that school administrators should place more emphasis on the implementation process of instructional leadership that allows administrators more time to confer with teachers, as well as plan resources in support of preparing and training staffs. This line of thinking is reflected in Vygotsky's (1978) Zone of Proximal Development as in the "recurrence" stage. This approach would allow teachers to "accommodate new information into a conceptual understanding" (Fani & Ghaemi, 2011, p. 1552). Although the reoccurrence stage may cause teachers some stress and possibly promote infrequent implementation of differentiated instruction, teachers' hesitancies can be encountered with a consistent instructional leadership practice that considers the individual needs as well as the characteristics of teachers engaged in change. Communication of feedback for teacher performance informs planning and instruction. Providing time, recognition, and resources positively impacts on teachers' self-efficacy for differentiating instruction and sustain its practice in the classroom.

The results of the study bear out that the perceptions of teachers were not in complete agreement with those of the administrators in four out of six subsets, including the total average of all six subsets. Survey statements associated with communicating school goals, monitoring

student progress were perceived by the administrators and teachers as extensive functions of instructional leadership occurring in their schools. In contrast, survey statements relative to supervision and evaluation of instruction, protection of instructional time, providing incentives for teachers, and in providing professional development were consequently perceived by teachers as not being experienced to the same extent as believed by administrators to be in practice. Ultimately, it becomes the responsibility of administrators to manage teachers' perceptions by including those functions indicated by the data as not being extensive in their instructional leadership practices.

The benefits of differentiated instruction are well established in the literature. Research shows that functions of instructional leadership practice can offset challenges to teachers' implementation of differentiated instruction. Whether or not school administrators have a high priority for differentiation in their schools, this study added to the knowledge of how best to support and develop teachers' commitment and expertise in differentiating instruction over time.

First, the major contribution of this study is that it alludes to the existence of misconceptions held by school administrators for the extent of their instructional leadership practice with the potential to negatively impact on teachers' willingness to implement an innovation through lack of support in critical areas. Supervision and evaluation of instruction is the critical junction for the interactions between school administrators and teachers. Teacher evaluation provides an opportunity for the instructional leader to interact with teachers for the purposes of assessment, engage in professional discussions on the topic of effective instruction, and plan for professional development to improve practice.

Second, a conceptual model was developed for this research study linking theory with teacher performance indicators and instructional leadership practices that support teachers'

implementation of differentiated instruction. The conceptual model illustrates the links between the theories of practice that form the foundations of school administrators' instructional leadership practice. School administrators conceivably carry over leadership practices found to be effective from setting to setting or year to year. Hallinger's (1983) Principal Instructional Management Ratings Scale (PIMRS) is used as means to categorize instructional leadership into functions that then were identified as being effective in support of differentiated instruction through the literature. TKES then becomes the context within which the instructional leader and teacher interact to improve teaching and learning.

Third, this research study produced a valid and reliable survey instrument for data collection of the perceptions held by administrators' and teachers' for the functions of instructional leadership practice.

Recommendations for Future Research

This research was originally proposed as a "first step" in identifying specific functions of instructional leadership practice commonly utilized by school administrators in the setting for this study. It was hoped that differences in the perceptions of administrators and teachers would indicate functions of instructional leadership not so common in practice and thereby providing a focus for future research. Possibly due the response rate of this study, further examination to determine the validity of the research may be conducted in middle school setting across multiple school districts. Action research might be useful in determining the perceptions of school administrators as to their primary goal as an instructional leader relative to a focus on differentiated instruction in order to plan a large-scale study. Ultimately, the goal would be to go "deeper" in studying how instructional leadership is associated with the use of differentiated instruction.

After answering the "so what", the next logical steps would be to attempt to answer the "why?" Even though in this study no statistically significant differences were found between the perceptions of administrators and teachers from schools of different student achievement levels, the research was encouraged by the low *p* values observed in the data. The researcher still holds the assumption that where differentiation is a goal, schools with strong instructional leadership practices that support differentiated instruction achieve that goal.

Future research into the impact of broader organizational needs could generate competing priorities upon administrators' focus of instructional leadership may offer insights into the attentiveness of administrators and their degree of support toward teachers' instructional needs. In contrast, research into the notion put forth by Memisoglu (2015) that teachers may have higher expectations for instructional leadership support for the classroom and in itself may shed light into what influences their reality consequently resulting in the significant differences in perception as to the extent of administrators' instructional leadership. As long as the problem persists of teachers' infrequent implementation of differentiated instruction, future research into instructional leadership support for planning for differentiation should continue to seek to understand the perspectives of all individuals involved in the process.

Recommendations for Educational Practitioners

Reflecting back the theoretical works of Vygostky (1978) and Fullan (2001), perceptions are the reality in an educational context. It is of paramount importance to recognize teacher perceptions of leadership practice in order to reduce resistance to change. By identifying any misconceptions held by school administrators for the extensiveness of their instructional leadership, practices can be adapted and more flexible behaviors may emerge in response to stakeholders needs. In reflecting back on the work of Lim, Gronlund and Andersson (2015),

misalignment of beliefs and attitudes held for innovations by principals and stakeholders contributes to creating additional barriers for its implementation. Policy makers should take into account the perceptions of principals for an innovation like differentiated instruction before requiring its institutionalization. More specifically, leadership development should better prepare school administrators in gaining a broader knowledge of the formative processes involved in supervision and evaluation of teachers to improve instruction.

Researchers and policymakers agree that a principals' instructional leadership is key to increasing student achievement as well as being central to focusing their schools on improving teaching and learning. Consequently, this vein of research assists school leadership engaged in the troughs of implementing mandated instructional interventions in better aligning practices toward planning for changes in teaching and learning. At a minimum, this study should promote professional conversation for the role that a principals' beliefs and attitudes play in the implementation of a multi-faceted standardized teacher evaluation system or for the effectiveness of mandated innovations such as differentiated instruction to improve learning outcomes for students.

Conclusion

The middle school administrators and teachers who participated in this study of planning for differentiated instruction concurred with the statements of the survey, and thus helped to identify six functions of instructional leadership and twenty-seven related practices supportive of teachers' implementation of differentiation. The participants came from a variety of content areas, and grade levels. The participants' relative average years of leading or teaching experience provided for a seasoned group of educators who had undergone profound educational changes over the past years. Therefore, the participants' perspectives on the functions of instructional

leadership practices have been shaped not only by change but by the context of professional interactions.

The administrators' and teachers' perceptions derived from this study can be seen to be reflective of a belief that instructional leadership towards differentiated instruction is extensive in the participants' school setting. However, when comparing administrators' and teachers' perceptions, teachers were not in complete agreement with administrators in three out of six subsets including the total average of all six subsets. Teachers consequently perceived survey statements about supervision and evaluation of instruction, protection of instructional time, providing incentives for teachers, and in providing for professional development as not being experienced to the same extent as believed by administrators to be in practice.

Administrators have the responsibility to attend to teachers' perceptions. A misalignment of beliefs and attitudes held for innovations by school administrators and stakeholders can, unfortunately, contribute to creating additional barriers for implementation. A perceived lack of administrative support by teachers can send mixed messages to stakeholders about the leadership's priority or focus for learning. Interestingly, administrators and teachers agreed about the statements of the survey related to organizational learning goals and practices that are informed by student achievement data and are aligned to accountability. However, administrative support associated with functions of instructional leadership, such as supervision of the instructional program, teacher evaluation or professional development that have their place in sustaining teaching practices, are potentially lacking based on leaderships' priorities for learning.

Planning for differentiated instruction, as in any change, should be informed by the perceptions of all stakeholders for the innovation. A collaborative approach toward instructional leadership aligns with the cognitive change (Vygotsky, 1978) aspects of the theoretical

framework of this study and may be a contemporary method in planning for the implementation of differentiation as well as sustaining practice. Successful school operations are more positively enhanced when instructional leadership is perceived by stakeholders as a team effort or shared process rather than a role carried out by administration (Ham et al., 2015).

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APPENDICIES

Appendix A

State-by-State Review of Teacher Evaluation and Performance Standards

State	Name of Instrument	Standard/Domain/Component/Competency/Principle	Direct Reference
Alabama	Alabama Quality teaching Standards (AQTS)	Standard 4: Diversity of learners and learning needs	No. Relates to theory of Differentiated Instruction
Alaska	Standards for Alaska's Teachers	Standard 3: A teacher teaches students with respect for their individual and cultural characteristics; 3b: identifying and using instructional strategies and resources that are appropriate to the individual and special needs of students.	No. Relates to theory of Differentiated Instruction
Arizona	The Teacher Evaluation Process	Domain 1: Planning and Preparation; 1e: Designing coherent instruction; plans represent in-depth content knowledge, understanding of different students' needs and available resources resulting in a series of learning activities to engage students in high-level cognitive activity. These are differentiated as appropriate for individual learners. Domain 3: Instruction; 3e: Demonstrating flexibility and responsiveness; teacher seizes an opportunity to enhance learning, building on a spontaneous event or student interests or successfully adjusts and differentiates instruction to address individual student understandings.	Yes. Clearly stated.
Arkansas	Teacher Excellence and Support System (TESS)	Domain 3: 3c: Differentiated instruction plan	Yes. Clearly stated.
California	California Standards for Teaching Profession (CSTP)	Standard 1: Engaging and Supporting all Students in Learning; 1.4 Using a variety of instructional strategies, resources, and technologies to meet students' diverse learning needs; Standard 4: Planning Instruction and Designing Learning Experiences for all Students; 4.5 Adapting instructional plans and curricular materials to meet the assessed learning needs of all students.	No. Relates to theory of Differentiated Instruction
Colorado	Teacher Quality Standards	Standard 3: Facilitate Learning; Element C: individualizes instructional approach to meet unique needs of each student.	No. Relates to theory of Differentiated Instruction
Connecticut	System for Educator Evaluation System (SEED)	Domain 3: Instruction for Active Learning; Indicator 3: adjusts instruction as necessary in response to individual or group performance.	No.
Delaware	Delaware Performance Appraisal System (DPAS)	Component 1: Component 3b:	No. Relates to theory of Differentiated Instruction
Florida	Classroom Teacher Evaluation Instrument (CTEI)	Domain 1: Classroom Strategies and Behaviors; 1d: Knowledge of student diversity	No. Relates to theory of Differentiated Instruction
Georgia	Teacher Keys of Effectiveness System (TKES)	Standard 4: Differentiated Instruction; 4a, b, c, d	Yes. Clearly stated.
Hawaii	Teacher Performance Standards	Standard 7: Planning for Instruction; 7b: differentiated instruction	Yes. Clearly stated.
Idaho	Idaho Core Teacher Standards	Principle 3: Adapting Instruction for Individual Needs; teacher creates instructional opportunities that are adapted to students with diverse learning needs	No. Relates to theory of Differentiated Instruction
Illinois	Illinois Professional Teaching Standards	Standard 3: Diversity; 3d: different learning styles	No. Relates to theory of Differentiated Instruction
Indiana	Indiana Teacher Effectiveness Rubric	Domain(s): No references to Differentiated Instruction or related aspects of theory.	No.
Iowa	Iowa Teaching Standards	Standard 4: Uses strategies to deliver instruction that meet the multiple learning needs of students; 4c, d, e: diverse learning needs and interests of students.	No. Relates to theory of Differentiated Instruction
Kansas		Could not determine.	No.
Kentucky	Kentucky Framework for Teaching	Domain 1: Planning and Preparation; 1c: Setting instructional outcomes suitable for diverse learners.	No. Relates to theory of Differentiated Instruction
Louisiana	Louisiana Components of Effective Teaching	Domain 3: Instruction; Component C: accommodates individual differences	No. Relates to theory of Differentiated Instruction
Maine	Standards of Professional Practice	Core Proposition 1: Teachers are committed to students and their learning; 1a: teacher demonstrates through recognition and	No. Relates to theory of Differentiated

	for Teachers and Principals	understanding of students' individual learning needs as well as their backgrounds, abilities, and interests.	Instruction
Maryland	Framework for Teacher Evaluation	Domain 1: Planning and Preparation; 1b: demonstrating knowledge of students: lesson plans reflecting differentiated instruction, awareness of students needing accommodations and developmental and cognitive readiness.	Yes. Clearly stated.
Massachusetts	Massachusetts Teaching Evaluation System	Standard 2: Teaching All Students; instructional practices that are personalized to accommodate diverse learning styles.	No. Relates to theory of Differentiated Instruction
Michigan		Could not determine.	No.
Minnesota	Performance Standards for Teaching Practice	Domain 1: Planning; Indicator 1c: Plans for assessment and differentiation; Element 2: Plans for differentiation based on student data or otherwise documented student needs and takes into consideration the learning experiences, content, assessments, and product. Domain 3: Classroom Instruction; Indicator 3b: Uses instructional strategies to engage students in learning: differentiation of instruction is based on each students' level of understanding.	Yes. Clearly stated.
Mississippi	Mississippi Teacher Evaluation System (M-STAR)	Domain 1: 1.3 Differentiated instruction	Yes. Clearly stated.
Missouri	Missouri's Educator Evaluation System – Teacher Standards	Standard 2: Student Learning, Growth, and Development; provides learning opportunities that are adapted to diverse learners; Quality Indicator 4: Differentiated lesson design	Yes. Clearly stated.
Montana	Montana educator Performance Appraisal System (Montana – EPAS)	Domain 3: Instructional Effectiveness for Student Learning; 3b: teacher differentiates instruction based on learner characteristics and achievement data.	Yes. Clearly stated.
Nebraska	Teacher Standards	Standard 4: Instructional Strategies; modifies, adapts, and differentiates instruction and accommodations based on data analysis, observation, and the needs of students.	Yes. Clearly stated.
Nevada	Nevada Educator Performance Framework (NEPF)	Teacher Instructional Practice Standards and Indicators; Standard 2: learning tasks have high cognitive demand for diverse learners.	No. Relates to theory of Differentiated Instruction
New Hampshire		Could not determine.	No.
New Jersey	New Jersey Professional Standards for Teachers	Standard 2: Learning Differences: understanding individual differences in a broader context, including the learner's personal, family, and community experiences and cultural norms.	No. Relates to theory of Differentiated Instruction
New Mexico	Teacher Competencies	Standard 4: The teacher comprehends the principles of student growth, development and learning, and applies them appropriately; 4b: adapts teaching techniques to accommodate a wide range of student learning levels, rates, styles, and special needs; 4c: adapts teaching materials and media to address a range of student learning, levels, rates, styles, and special needs.	No. Relates to theory of Differentiated Instruction
New York	New York Teaching Standards	Standard 1: Knowledge of Students and Student Learning; Element 1.3: Teachers demonstrate knowledge of and are responsive to diverse learning needs, strengths, interests, and experiences of all students; Indicator A: Teacher planning varies or modifies instruction to meet diverse learning needs of each student using student strengths, interests, and experiences.	No. Relates to theory of Differentiated Instruction
North Carolina	North Carolina Professional Teaching Standards	Standard 4: Teachers Facilitate Learning for their Students; teachers use a variety of instructional methods; employ a wide range of techniques using information and communication technology, learning styles, and differentiated instruction.	Yes. Stated clearly.
North Dakota	North Dakota Teacher Evaluation Template	Standard 2: Learning Differences; teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.	No. Relates to theory of Differentiated Instruction
Ohio	Ohio Teacher Evaluation System Assessment of Teacher Performance	Standard 4: Differentiation; teacher supports the learning needs of students through a variety of strategies, materials, and/or pacing that makes learning accessible and challenging for all students in the classroom. The teacher effectively uses independent, collaborative, and whole-class instruction to support individual learning goals and provides varied options for how students will demonstrate mastery.	Yes. Clearly stated.
Oklahoma	Teacher and Leader Effectiveness (TLE)	Domain 5: Classroom Management; Teacher acknowledges student progress and uses assessment practices that are fair, based on identified criteria, and support effective instruction; consistently uses assessments to evaluate student learning and guide and support	Yes. Clearly stated.

		differentiated instruction.	
Oregon	Oregon Framework for Teacher and Administrator Evaluation and Support System	Domain A: The Learner and Learning; Standard 2: Learning Differences; teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.	No. Relates to theory of Differentiated Instruction
Pennsylvania	Standards Aligned System (SAS)	Domain 1: Planning and Preparation; 1e: Designing Coherent Instruction; Learning activities are differentiated appropriately for individual learners. Instructional groups are varied with some opportunity for student choice; teacher provides for a variety of appropriately challenging resources that are differentiated for students in the class; lesson plans are differentiated for individual student needs.	Yes. Clearly stated.
Rhode Island	Teacher Evaluation and Support System	Domain 3: Instruction; Component 3d: Using assessment in Instruction; assessments are used regularly to diagnose evidence of learning, and instruction is adjusted and differentiated to address individual student misunderstandings.	Yes. Clearly stated.
South Carolina	Assisting, Developing, Evaluating Professional Teachers (ADEPT) Performance Standards for Classroom-based Teachers	Domain(s): No references to Differentiated Instruction or related aspects of theory.	No.
South Dakota	The South Dakota Framework for Teaching	Domain 3: Instruction; 3e: Demonstrating flexibility and responsiveness; lesson adjustment, response to students.	No. Relates to theory of Differentiated Instruction
Tennessee	Framework for Evaluation and Professional Growth Comprehensive Assessment Performance Standards	Domain 2: Teaching Strategies; Indicator B: Teacher provides differentiated tasks to meet the varied learning styles and needs of students.	Yes. Clearly stated.
Texas	Teacher Evaluation and Support	Instruction; Dimension 2.4: Differentiation; adapts lessons with a wide variety of instructional strategies to address individual learning needs.	Yes. Clearly stated.
Utah	Utah Effective Teaching Standards and Support	Standard 6: Instructional Planning; c: Differentiates instruction for individuals and groups of students by choosing appropriate strategies, accommodations, resources, materials, sequencing, technical tools, and demonstrations of learning.	Yes. Clearly stated.
Vermont	Vermont Guidelines for Teacher and Leader Effectiveness	Standard 3: Instructional Practice; 3.3: uses a variety of instructional strategies to respond to students' diverse learning needs.	No. Relates to theory of Differentiated Instruction
Virginia	Virginia Standards for Professional Practice of Teachers	Standard 2: Instructional Planning; Key Element 5: Teachers choose appropriate strategies, resources, and materials to differentiate instruction for individuals or groups of students and develop appropriate sequencing of learning experiences. Standard 3: Instructional Delivery; Key Element 1: Teachers differentiate instruction to accommodate the learning needs of all students.	Yes. Clearly stated.
Washington	Teacher Evaluation	Standards: Curriculum and Pedagogy; CP5 Teaching Approaches and/or Strategies: Differentiation; teacher uses strategies that differentiate for individual learning strengths and needs.	Yes. Clearly stated.
West Virginia	Evaluation Rubrics for Teachers	Standard 2: The learner and the Learning Environment; Element 2.1: plans and implements differentiated learning activities with students.	Yes. Clearly stated.
Wisconsin	Wisconsin Educator Effectiveness System	Domain 1: Planning and Preparation; Component 1b: Demonstrating knowledge of students; classroom artifacts show differentiation and cultural responsiveness.	Yes. Clearly stated.
Wyoming	The Wyoming State Model Educator Support and Evaluation System	Domain 1: Learner and Learning; Standard 2: Learning Differences; teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.	No. Relates to theory of Differentiated Instruction

Appendix A displays a State-by-State review of teacher evaluation and performance standards that reference to differentiation. While only 44% of the states (22) referred directly to

differentiation, 46% of states' teaching standards (23) reflected a reference to the theory of differentiated instruction. Therefore with a total of 90% of all states relating teacher performance to some aspect of differentiation, the generalization of this study's research question and instrument to other middle settings could be viewed as highly probable.

Appendix B

Email Communication to Phillip Hallinger, Ph.D.

Jan. 22, 2016

Dr. Hallinger,

My name is Mark L. Lang, a doctoral candidate at Kennesaw State University. Last Fall, I communicated with you via email as to inquire about using PIMRS in my dissertation study. However, my committee advised me to design my own instrument to collect data toward answering my research question. My study is intended to examine perceptions held by school administrators and teachers for instructional leadership practices that according to the literature have been found to support teachers in overcoming barriers to implementing differentiated learning.

I am communicating to you in an effort to hopefully solicit your advice. I found parallels in the literature to concepts entailed in PIMRS specifically referring to instructional leadership job factors. I am not looking at principals alone but all school administrators. In the school setting of my study in Georgia, most or all school administrators are considered instructional leaders whose job responsibilities are reflected across the ten leadership factors. I have adopted six of the ten that more closely align with school administrators' instructional leadership roles that are reflected in both the literature as being supportive of implementing differentiation as well as in the expectations for the delivery of differentiation associated with the teachers' evaluation instrument (TKES). Specifically, I believe I have "adapted" items from PIMRS reflected in the 30 items of my questionnaire. It is my hope that I worded the items enough so as to not infringe upon your intellectual property. Would you examine the surveys and let me know your thoughts? Again, it is my hope that you will approve of the adaptations. Secondly, if you have any additional advice to offer as you review the documents this would be most helpful to my study.

I, like other doctoral candidates, have made reference to your work (and colleagues) which is serving as the conceptual framework of my study. As concerns any aspect of PIMRS, I believe I have made the appropriate references and attributions.

Thank you for your time and consideration as relates to my inquiry and I look forward to your response.

Mark L. Lang, EdS.
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May 19, 2016

Mark Lang

Dear Mark:

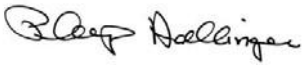
As copyright holder and publisher, you have my permission as publisher to use the *Principal Instructional Management Rating Scale* (*PIMRS*) in your research study. In using the scale, you may make unlimited copies of any of the three forms of the PIMRS.

Please note the following conditions of use:

1. This authorization extends only to the use of the PIMRS for research purposes, not for general school district use of the instrument for evaluation or staff development purposes.
2. This is a single-use purchase for the author's graduate research, thereby requiring purchase of additional rights for use in any future research.
3. *The user agrees to send a soft copy (pdf) of the completed study and the raw data set in Excel or SPSS to the publisher upon completion of the research.*
4. The user has permission to make adaptations to scale as necessary for the research.
5. If the instrument is translated, the user will supply a copy of the translated version.

Please be advised that a separate *permission to publish* letter, usually required by universities, will be sent after the publisher receives a soft copy of the completed study.

Sincerely,



Professor Philip Hallinger
www.philiphallinger.com

Appendix C

School Administrators' Perception Survey

School Administrator Instructional Leadership Practices in Support of Differentiated Instruction Survey Version 1.1

Part I: Please provide the following information:

1. Gender:
    - Female
    - Male
2. Years of experience working at your current school (including current year):
    - 1
    - 2-4
    - 5-9
    - 10-15
    - more than 15
3. Total years teaching experience (including current year):
    - 1
    - 2-4
    - 5-9
    - 10-15
    - more than 15
4. Total years administrative experience (including current year):
    - 1
    - 2-4
    - 5-9
    - 10-15
    - more than 15

Part II: This questionnaire is designed to provide administrators' perceptions of instructional leadership practices in support of differentiated instruction. This questionnaire contains 30 behavioral statements that describe instructional leadership practices. Participants are asked to consider each item in terms of their own instructional leadership throughout, during, and over the previous school year.

Participants are asked to read each statement carefully. Next, **click** on the **circle** by the phrase that best aligns with the perception of his or her instructional leadership practice over the previous school year. In instances of uncertainty, personal judgement may be required in determining the most appropriate response to questions. Please select only one response. Attempt to answer every question.

I. Communicate School Goals

To what extent as an Instructional Leader do you…?

1. Frame the school's goals in terms of a vision of teachers' responsibilities for implementing differentiated instruction?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
2. Refer to the school's goals for differentiated instruction regarding diverse student learning needs across all content areas?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
3. Use student performance data when framing the school's academic goals towards implementing differentiated instruction?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
4. Refer to the school's academic goals for differentiated instruction when making curricular decisions with teachers?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
5. Discuss the school's academic goals for the implementation of differentiated instruction with teachers during at least one or all of the following: faculty meetings, professional development, or when discussing the school's strategic plan with staff?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

6. Ensure that the classroom priorities of teachers for the implementation of differentiated instruction are aligned with the school's academic goals?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

II. Supervise and Evaluate Instruction

To what extent as an Instructional Leader do you…?

7. Maintain high visibility and accessibility to teachers to discuss school or professional issues in regards to differentiated instruction?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
8. Conduct walkthroughs and observations of classroom instructional practices on a consistent basis related to TKES Standard 4, Differentiated Instruction?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
9. Provide specific feedback on teachers' strengths associated with planning and classroom practices related to differentiated instruction?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
10. Provide feedback on specific ways to help teachers' with planning and classroom practices related to differentiated instruction?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

11. Share professional knowledge of approaches toward differentiating instruction when providing feedback or communicating evaluations of teachers' use of differentiated instructional strategies in lesson plans or teaching?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

III. Monitors Student Progress

To what extent as an Instructional Leader do you…?

12. Promote teacher use of common or other formative assessments to measure the effectiveness of strategies used in differentiating instruction to improve student learning?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
13. Discuss academic performance results with teachers to identify curricular strengths and weaknesses related to the implementation of differentiated instruction?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
14. Model the data team process to assess learning outcomes that emphasizes differentiated instructional strategies?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
15. Refer to the data team process to guide instruction and in selecting strategies for differentiated instruction?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

16. Point out specific uses of the data team process in forming differentiated instructional strategies related to at least one or all of the following approaches: content, process, product, and learning environment?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

IV. Protects Instructional Time

To what extent as an Instructional Leader do you…?

17. Limit intrusions by extra-curricular activities into the instructional time necessary for the implementation of differentiation?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
18. Establish a school-wide instructional framework for teaching that is conducive to teachers' implementation of differentiated instructional approaches geared towards diverse learning needs?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
19. Provide feedback on classroom management related to teachers' abilities to implement differentiated instructional strategies in the classroom?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

V. Provide Incentives for Teachers

To what extent as an Instructional Leader do you…?

20. Recognize teacher success in implementing differentiated instruction?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

21. Recognize teacher innovation of classroom practices related to differentiated instruction?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
22. Provide resources that help teachers enhance differentiated instructional practices?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

VI. Provide Professional Development

To what extent as an Instructional Leader do you…?

23. Frame professional development to meet identified students' weaknesses or learning needs through approaches towards differentiated instruction?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
24. Provide professional development opportunities that increase knowledge of differentiated instructional strategies?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
25. Provide professional learning opportunities to help teachers align differentiated instructional strategies with students' learning needs, styles, and interests?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
26. Create professional learning communities to promote professional growth in differentiating instruction.
    - Never
    - Rarely
    - Sometimes
    - Often

- Always

27. Create professional learning communities to support teachers' ability to maintain the implementation of differentiated instruction in classroom practices.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

Appendix D

Teachers' Perception Survey

School Administrator Instructional Leadership Practices in Support of Differentiated Instruction

Survey Version 1.1

Part I: Please provide the following information:

1. Gender:
    - Female
    - Male
2. Years of experience working at your current school (include current year):
    - 1
    - 2-4
    - 5-9
    - 10-15
    - more than 15
3. Total years of teaching experience (including current year):
    - 1
    - 2-4
    - 5-9
    - 10-15
    - more than 15
4. Content area of instruction (including current year):
    - English Language Arts (Gen. Ed.)
    - English Language Arts (Special Ed.)
    - Math (Gen. Ed.)
    - Math (Special Ed.)
    - Science (Gen. Ed.)
    - Science (Special Ed.)
    - Social Studies (Gen. Ed.)
    - Social Studies (Spec. Ed.)
    - Connections/Performing Arts (one or more subjects or grade levels)
    - IEL/ESOL (one or more subject areas or grade levels)
    - Foreign Language (one or more languages or grade levels)
    - Teach in Multiple Subjects or Grade Levels (Gen. Ed.)
    - Teach in Multiple Subjects or Grade Levels (Gifted or Accelerated)
    - Teach in Multiple Subjects or Grade Levels (Special Ed.)
5. Grade Level:
    - 6
    - 7
    - 8

- Multiple Grade Levels

Part II: This questionnaire is designed to provide teachers' perceptions of school administrators' instructional leadership practices in support of differentiated instruction. This questionnaire contains 30 behavioral statements that describe school administrators' instructional leadership practices. Participants are asked to consider each item in terms of their own observations of administrative instructional leadership throughout, during, and over the previous school year.

Participants are asked to read each statement carefully. Next, **click** on the **circle** by the phrase that best aligns with the perception of his or her instructional leadership practice over the previous school year. In instances of uncertainty, personal judgement may be required in determining the most appropriate response to questions. Please select only one response. Attempt to answer every question.

I. Communicate School Goals

To what extent does your school administration…?

1. Frame the school's goals in terms of a vision towards the implementation of differentiated instruction in terms of staff responsibilities and for meeting them?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
2. Refer to the school's goals for differentiated instruction in terms of diverse student learning needs across all content areas?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
3. Use student performance data when framing school's academic goals?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
4. Refer to the school's academic goals towards differentiated instruction when making curricular decisions with teachers?
    - Never
    - Rarely
    - Often
    - Always

5. Discuss the school's academic goals towards the implementation of differentiated instruction with teachers at faculty meetings, in professional development, or when communicated the school's strategic plan with staff?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
6. Ensure that the classroom priorities of teachers towards implementation of differentiated instruction are aligned with the school's academic goals.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

II. Supervise and Evaluate Instruction

To what extent does your school administration…?

7. Maintain high visibility and accessibility to staff to discuss school or professional issues with teachers.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
8. Conduct walkthroughs and observations of classroom instructional practices on a consistent basis.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
9. Provide specific feedback on strengths associated with planning and classroom practices toward differentiated instruction.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
10. Provide specific feedback on weaknesses associated with planning and classroom practices toward differentiated instruction.
    - Never

- Rarely
- Sometimes
- Often
- Always

11. Reflect a knowledge for approaches toward differentiated instruction in communicating assessment of teachers' use of differentiated instructional strategies reflected in planning or classroom observations.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

III. Monitors Student Progress

To what extent does your school administration…?

12. Use tests and other performance instruments to measure progress toward school goals.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
13. Discuss academic performance results with the faculty to identify curricular strengths and weakness in terms of content areas.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
14. Model the data team process to assess learning outcomes.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
15. Refer to the data team process to inform instruction and strategies towards differentiated instruction.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
16. Points out specific use of the data team process in forming flexible groupings, designing accommodations tailored to learning needs, and assessment of the impact of

differentiated instructional strategies, in terms of content, process, product, and learning environment, upon academic progress toward standards.

- Never
- Rarely
- Sometimes
- Often
- Always

IV. Protects Instructional Time

To what extent does your school administration…?

17. Limit intrusions of extra-curricular activities into the instructional time.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
18. Establish a school-wide instructional framework for instruction conducive for teachers to implement differentiated instruction related approaches toward diverse learning needs.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
19. Provide feedback on classroom management specific to implementing differentiated instructional approaches in the classroom.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

V. Provides Incentives for Teachers

To what extent does your school administration…?

20. Recognize teacher success in meeting academic or school goals.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
21. Recognize teacher innovation of classroom practices related to school priorities.
    - Never
    - Rarely

- Sometimes
- Often
- Always

22. Provide resources that help teachers to enhance differentiated instructional classroom practices.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always

VI. Provides Professional Development

To what extent does your school administration…?

23. Frame professional development to meet identified school goals.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
24. Provide professional development opportunities that increase teachers' knowledge of differentiated instruction and related strategies.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
25. Provide professional learning opportunities to help teachers in aligning differentiated instructional strategies toward students' learning needs, styles, and interests.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
26. Create professional learning communities to promote professional growth.
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
27. Create professional learning communities to sustain teachers' capacity to sustain the implementation of differentiated instruction in classroom practices.
    - Never

- Rarely
- Sometimes
- Often
- Always

Appendix E

Letter of Solicitation and Informed Consent for Pilot Study Judges

Working Title

Electronic Letter of Solicitation (for Pilot Study)

Dear Colleague,

I am currently enrolled as a doctoral student at Kennesaw State University, Kennesaw, Georgia, in the Ed. D. program, Bagwell College of Education, Department of Educational Leadership. I am writing to invite you to participate as a judge in a pilot study of a survey instrument that will be used to collect data for my dissertation study on instructional leadership practices.

The purpose of this study is to identify, from the perspectives of administrators and teachers, instructional leadership practices most frequently used by school administrators in support of teachers' approaches towards differentiation in the middle school classroom. Thirty instructional leadership practices, identified in the literature as supporting the implementation of differentiated instruction, will be examined across six core functions of instructional leadership.

The pilot study that you are invited to judge is envisioned to be a pre-test of the questionnaire's feasibility to answer the research questions. The main reasons for conducting a pilot survey is the necessity to detect flaws in the measurement procedures which could include the wording of instructions, or unnecessary questions by identifying unclear or ambiguous items in the questionnaire. Your participation in this pilot study will help produce a valid and reliable instrument and potentially a much more significant study that can better inform leadership practice towards teaching and learning.

There will be two phases to this pilot study. **Phase One** will involve judges being asked to make commentary on the instruments in the following areas: (a) Contents – do the contents reflect the purpose of the study? Are there any other items to be included or deemed unnecessary? (b) Language – is the language of the instruments appropriate, understandable, or ambiguous? (c) Format – is the format of the instrument appropriate for the intent of the study? Are there excesses in the number of items? Should an open-ended question be included versus other quantitative formats? The judges' commentary will provide the basis for revision. In **Phase Two**, the judges will actually be taking the survey on-line via email resulting in additional revisions towards finalizing the instrument.

The researcher will maintain complete confidentiality regarding your participation. You will be identified only through a participant number, for example, participant #1 and so forth. Participants' identity and responses will at no time be revealed. Your participation in the study is voluntary and by completing it you are consenting to being a judge in the pilot survey study. The inability or refusal to participate or to discontinue your participation at any time will not result in penalty or loss of benefits which you are entitled. You may choose to discontinue participation at any time. The pilot survey data will become part of the analysis of the instrument as described.

Data will not remain on a desktop or laptop computer but rather will be stored on a USB memory key and secured in a locked cabinet. Only the researcher and the researcher's committee chairperson, Dr. TC Chan, Bagwell College of Education, Kennesaw State University, Kennesaw, Georgia, will have access to the data. The data will be maintained through the course of this study and eventually destroyed.

Thank you for your cooperation and time.

Sincerely,

Mark L. Lang, Ed. S.
Ed.D. Program Doctoral Candidate
Kennesaw State University
Kennesaw, GA

Appendix F

Cover Letter Of Solicitation To Participants

Letter of Solicitation

A Study of Differentiation: Comparing Instructional Leadership Practices as Perceived by Administrators and Teachers in Middle Schools

Electronic Letter of Solicitation

Dear Colleague,

I am currently enrolled as a doctoral student at Kennesaw State University, Kennesaw, Georgia, in the Ed. D. program, Bagwell College of Education, Department of Educational Leadership. I am writing to invite you to participate in a study of differentiation that will compare the perceptions of administrators and teachers for school administrators' instructional leadership practices in support of the implementation of differentiated instruction in middle school classrooms. The data collected will be used to answer the research questions associated with my dissertation study.

The purpose of this study is to identify, from the perspectives of administrators and teachers, instructional leadership practices most frequently used by school administrators in support of teachers' approaches towards differentiation in the middle school classroom. Instructional leadership practices, identified in the literature as supporting the implementation of differentiated instruction, will be examined across six core functions of instructional leadership. In turn, it is believed that this study may generate an awareness for the functions of instructional leadership practice, which facilitate the implementation of differentiated instruction, and can better enable leaders in buffering the challenges to implementation. School administrators with the knowledge of how to help teachers deal with the challenges to differentiation, through support and encouragement, are more likely to increase the implementation of differentiated instruction within their school norms of practice.

Participants will be asked to complete an on-line survey consisting of items designed to elicit the participants' ratings of the extent to which instructional leadership practices are used to support the implementation of differentiated instruction in the classroom. Responses will be based on a Likert-type 5 point response rating scale ranging from (1) Never, (2) Rarely, (3) Sometimes, (4) Often, or (5) Always. It is estimated that this part of the survey should take twenty minutes or less to complete.

The researcher will maintain complete confidentiality regarding your participation. Participants' identity and responses will at no time be revealed. There are no foreseeable inconveniences or risks involved in your participation in this research. Your participation in the study is voluntary. The inability or refusal to participate or to discontinue your participation at any time will not result in penalty or loss of benefits which you are entitled. Again, you may choose to discontinue participation at any time. Information gathered during the course of the

study will become part of the data analysis and may contribute to published research reports and presentations.

Data will not remain on a desktop or laptop computer but rather will be stored on a USB memory key and secured in a locked cabinet. Only the researcher and the researcher's committee chairperson, Dr. TC Chan, Bagwell College of Education, Kennesaw State University, Kennesaw, Georgia, will have access to the data. The data will be maintained through the course of this study and eventually destroyed.

You may participate in this study on differentiation by clicking on the link provided (www.Surveymonkey.com). Once at the site, an electronic letter of consent will be provided for your review and signature prior to taking the on-line survey.

Thank you for your consideration and participation.

Sincerely,

Mark L. Lang, Ed. S.
Ed.D. Program Doctoral Candidate
Kennesaw State University

Appendix G

Electronic Letter Of Consent

Electronic Letter of Consent

My signature below indicates that I have read the information entailed in the Letter of Solicitation for this research and I have decided to participate in the study entitled "A Study of Differentiation: Comparing Instructional Leadership Practices as Perceived by Administrators and Teachers in Middle Schools" to be conducted via an on-line survey application between the months of Oct., 2016 to Nov., 2016.

I understand the purpose of the research project will be to identify, from the perspectives of administrators and teachers, instructional leadership practices most frequently used by school administrators in support of teachers' approaches towards differentiation in the middle school classroom and that I will participate by responding to an electronic questionnaire.

I recognize that the researcher states that the potential benefits of the study may generate an awareness for the functions of instructional leadership practice, which facilitate the implementation of differentiated instruction, and can better enable leaders in buffering the challenges to implementation. Consequently, school administrators may gain knowledge in how to help teachers deal with the challenges to differentiation, through support and encouragement, and the result may increase the implementation of differentiated instruction within school norms of practice targeting the learning needs of students.

I agree to the following conditions with the understanding that I can withdraw from the study at any time should I choose to discontinue participation.

- The researcher will maintain complete confidentiality regarding participation.
- Participants' identity and responses will at no time be revealed.
- There are no foreseeable inconveniences or risks involved in participating in this research.
- Participation in the study is voluntary.
- The inability or refusal to participate or to discontinue your participation at any time will not result in penalty or loss of benefits which you are entitled.
- Information gathered during the course of the study will become part of the data analysis and may contribute to published research reports and presentations.

Signature:_____ Date:_____

Appendix H

Pilot Study Phase One Judges Commentary

Pilot Study – Field Test Phase One

Review of Instrument for content, language, and alignment to the purpose of the study

Participation:

2 of 5 school administrators (S) = 40%

23 of 73 teachers (T) = 31%

Judge	Domain and Item Number	Commentary/Feedback
A1	Part I	Demographic question 2; delete "this" and replace with "your current" school.
	Part II	Instructions: delete "their" and replace with "his/her"; spelling error (extant) extent.
	Domain 1	Q1 wordy, delete "in terms of staff responsibilities and for meeting them?" Suggests ending items 1-30 with a question mark. Q2 delete "in terms of" and replace with "regarding" Q3 grammar, insert "the" between framing school"; suggests replacing the term "framing" with "addressing" Q5 grammar, change "communicating" to "communicated"
	Domain 2	
	Domain 3	Q11 wordiness, but no suggestion. Q15 insert "to create" between "and strategies" Q16 grammar/re-write: "Point out specific uses of the data team process in forming flexible groupings, designing accommodations tailored to learning needs, and assessing the impact of differentiated instructional strategies regarding content, process, product, and learning environment" or consider replacing "regarding" with "in association with".
	Domain 4	Q17 replace "to" with "into" Q18 eliminate question Q19 grammar along with replacement of terms; "Establish a school-wide instructional framework conducive to teachers in implementing differentiated instructional approaches towards diverse learning needs." Q22 grammar, "Provide resources that help teachers enhance differentiated instructional practices" Q23 delete "to" enhance and "classroom" practices. OVERALL CONTENT: "Qs are aligned with study purpose"
	Domain 5	

		COMMENTARY: "I like the idea of soliciting a couple open-ended responses. It allows teachers to express themselves without being limited to your (or a set of) restrictions." "Honestly – I think you can consolidate some of these questions to have some wordiness in your Q-stems that could be edited down."
A2	DNR No address	No Commentary
A3	DNR No address	No Commentary
A4	DNR No address	No Commentary
A5	Part II Q1-30 Domain 2 Domain 3 Domain 6	Delete "some" and insert "of" between "instances" and "uncertainty" Grammar spelling "extant" correct with "extent" Add "?" at the end of all items Q11 delete "Reflect a knowledge for" and replace with "Share" Q16 drop "s" on "Points"; change "assessment" to "assess"; reword Q27 delete "teacher's"; delete "to sustain" and replace with "and" OVERALL CONTENT: "The content is aligned to the purpose of the study." COMMENTARY: "Great format; a few questions were too wordy." The judge suggests "three distinct sections (1.) goals, 2.) progress monitoring, and 3.) professional development." "The Likert scale is a plus: perhaps add an open-ended question to each section."
T1	Domain 1 Domain 3	Q1 replace "them" with "goals" Q5 judge responded by saying that "these are three totally different things depending what you are looking for. Answers may not reflect what you are looking for" Q16 judge responded "This is a lot of choices. May be hard to answer resulting in skewed results." OVERALL CONTENT: "Format seems good. Length is appropriate" COMMENTARY: "Some of the language is difficult to understand. Determine exactly what question is. Some questions may have inconsistent answers. IE #16. There are 7 options that may or may not be discussed by admin."
T2	Part I (Demographics) Part II (Instructions)	Q2 and Q3 reword "include present year" with "including current year" Q2 and Q3 recommends changing span of years as 1, 2 to 5, 6 to 9, 10 to 14, and 15 or more Delete "uncertainty" and place "and" between "one response. Attempt" to read "one response and attempt.

		Also recommends that "To what extant does your school administrator" be at the beginning of each item.
	Domain 1	Q5 grammar "indicate" to "indicating"
	Domain 4	Q19 grammar insert "that is" between "instruction" and "conducive"; also insert "and" between "instruction" and "related"
	Domain 6	Q30 replace "sustain" with "continue"
		OVERALL CONTENT: "I like the format and the survey addresses the desired information well." Length is appropriate. Closed-ended is good but you may add a comment area at the end of the survey for deeper insight."
		COMMENTARY: "Survey is well done, questions are on point and hit the concept of the study. Closed ended format is good but perhaps add a block for open-ended input at the end."
T3	Domain 1	Q1 delete "goals in terms of". For Domain 1, the judge suggested additional questions about "resources presented to teachers" and "ways to implement".
	Domain 2	Q10 add "not only feedback but specific ways to help" Suggests an additional item in Domain 6 about the opportunity to work vertically with elementary and high school teachers.
		OVERALL CONTENT: "I found the survey to be very good and thorough."
		COMMENTRY: "I only had a few suggestions/questions. Good luck with this."
T4	Did not respond	
T5	Need address	
	Part I	Q1 delete "that you have worked" and replace with "of experience working"
		Q3 delete "Years teaching experience" and replace with "Total years of teaching experience"
	Domain 1	Q1 Delete "and" and "them" restructure as "responsibilities for meeting those responsibilities."
		Q2 reverse wording
	Each item Q1-30	Begin with "How often do you"
	Domain 3	Q12 Substitute "instruments" for "assessments"
		Q16 delete "of" replace with "for"; end of question is confusing
	Domain 4	Q17 delete "of" replace with "by"
		Q18 rephrase wording
		Q19 delete "related" and insert "geared" between "approaches" and "toward"
	Domain 6	Q29 and Q30 more specifics, use of "professional learning communities" is ambiguous

		COMMENTARY: "I think the attempt to save time and writing can be confusing. I would just write out the whole question."
T6	Part I (Demographics) Part II Domain 1 Domain 5	Q4 The judge recommends adding an additional choice for "teach (in) more than one subject; would require a general and special education selection. Q1 judge recommends avoiding the use of "in terms of" twice in the sentence to reduce confusion. Q5 grammar replace "communicate" with "communicating. Q23 delete "teacher classroom" and replace with "classroom teacher". OVERALL CONTENT: "Everything looks aligned to the purpose of this survey." COMMENTARY: "Great format and easily readable."
T7	Did not respond	
T8	Need address	No comments. Actually responded to survey.
T9	Did not respond	
T10	Did not respond	
T11	Need address Part I (demographics)	 Q4 judge suggests adding a "teach all three grade levels" or "multiple levels." OVERALL CONTENT: "Questions relate to most academic teachers not Connections or PE teachers." COMMENTARY: "Especially data teams meetings would get more info from data teams/academic teachers."
T12	Did not respond	
T13	Need address Part I (demographics) Part II Domain 1 Domain 2 Domain 3 Domain 4 Domain 5 and 6	 Add question about "ethnicity." Grammar correct spelling of "extant" to "extent". Q1 judge suggests to re-write "too lengthy." Q5 judge suggests adding "discusses or collaborates with each other." Q11 judge suggests to shorten sentence. Q12 insert "conducts" between "Uses" and "tests" Q14 Grammar change tense of Model"s" Q15 Grammar refer "s"; replace "to inform" with "implement" Q17 Grammar change tense of Limit "s" Q18 Grammar change tense Limit "s" Q19 Grammar change tense Establish "es" Q20 through Q30 Grammar add "s" to all opening verbs. No COMMENTARY
T14	Part II (Instructions) Domain 1	Judge suggests replacing "provide" with "assess"; delete "the" replace with "your"; rephrase " In some instances

		uncertainty" with "In instances of uncertainty" Q1 delete "in terms of a vision towards differentiation" and replace with "regarding"; delete "in terms of" replace with "and" Commented that Q1 as written was difficult to understand. Q2 delete "in terms of" with "meet the needs of". Q5 delete "communicating" and replace with "when discussing".
	Domain 2	Q9 delete "toward" and replace with "regarding" and add "teachers' " between "on" and "strengths". Commented that Q9 was a "great statement. Often overlooked." Q10 delete "toward" and substitute with "regarding", "in regards to". Q11 Reword to increase clarity of the question. Suggest "Reflect a knowledge of approaches toward differentiated instruction when communicating evaluation of teachers' use of differentiated instructional strategies in planning and teaching."
	Domain 3	Q16 Judge states wordy and had to re-read, but also stated a good question. "Could it be broken up?" Revise. Q19 delete "for instruction conducive for teachers to implement" and replace with "for the implementation of"
	Domain 4	Q25 delete "to" Q28 Delete "in"; reword "aligning" to "align"; and delete "toward" and replace with "to". Q30 delete "sustain" and replace with "support"; delete "capacity" and replace with "ability". OVERALL CONTENT: "The content seems appropriately aligned to meet the needs of the study." COMMENTARY: "The format is perfect assuming the technology is adequate and functioning."
	Domain 6	
T15	Part II	Judge recommends mentioning all 6 categories or domains in the directions (and how many questions each has). Also, add "To what extent does your school administrator" to each question or at least to the top of page to avoid the reader from having to look back." Finally, add an optional open-ended question.
T16	Did not respond	

T17	Part I (Demographics) Part II (Instructions) Domain 1 Domain 2 Domain 3	Q4 add an advanced or gifted selection for each content area. Add "To what extent does your school administrator" to the top of each page. Q5 Reduce question by eliminating "at faculty meetings, professional development, or when communicating the school's strategic plan". Q6 Judge felt question similar to Q4 due to relationship to school's academic goals. Q11 substitute "planning" for "lesson plans" Q16 add after "forming" the phrase "differentiated strategies such as".
T18	Part I (Demographics) Part II (Instructions) Domain 1 Domain 3 Domain 4	Q4 Add a specific content selection for Social Studies for ESOL. Judge believes the instructions are too long and should be reduced to avoid the respondent quitting the survey. Q5 Shorten question Q16 Shorten question Q19 Shorten question OVERALL CONTENT: "The content looks fine to me; its well organized into different categories and would provide a deep feedback if I were an administrator/coach. As a participant of the survey, I would probably think it is long and time consuming."
T19	Part I (Demographics) Part II	Judge stated "well worded questions" along with "good and thorough answer choices". Judge feels responses "never" and "always" are too exclusive for answer choices. COMMENTARY: "Clear language" but "never and always as choices are too exclusive".
T20	Part I (Demographics) Part II (Instructions) Domain 1 Domain 2	Q2 replace "this school year" with "your current school". Q3 insert "of" between "years" and "teaching". Q4 add "for the" current school year. Change "practice" to "practices"; insert "and" between "uncertainty" and "personal"; add a coma after "response" along with "and attempt". Q1 delete "in terms of staff responsibilities and for meeting them" and replace with "with respect to the responsibilities of the staff and how they can meet these goals." Q4 missing "sometimes" response selection Q5 delete "teachers at faculty…with staff" and add "the staff during faculty meetings, professional development, or through the school's strategic plan." Q11 reword question; offers suggestions on how to

		possibly rework question; use main content of question but look at wording associated with "assessing" or "assessment" of teacher's use of differentiated instruction. OVERALL CONTENT: "Otherwise (referring to rewording question 11) the format and choices for each question are good and the content reflects the study."
T21	Part II (Instructions) Domain 1 Domain 2 Domain 3	Delete "uncertainty" Q5 change "communicated" to communicating" Q11 delete "for" with "of"; insert "as" between "strategies" and "reflected". Q16 Wordy or complex OVERALL CONTENT: No comment. COMMENTARY: Suggests open-ended question asking teachers to reflect on how they implement differentiation and how administrators could assist teachers individually to implement differentiation more effectively.
T22	Part I (Demographics) Part II (Instructions) Domain 1 Domain 2 Domain 3 Domain 4 Domain 5	Q3 insert "of" between "Years" and "teaching" Q4 be consistent with use of "Special Ed. in choices Delete "Over" add "throughout, during, and over the course of" Add "they showed" after "practice"; delete "over" Add coma after "instances"; insert "and a" before "personal judgement". Q1 delete "towards" replace with "for"; delete "them" replace with "these responsibilities/goals" Q3 insert "the" between "framing" and "school's" Q4 delete "towards" replace with "for"; add "Sometimes" to choices. Q5 delete "towards" replace with "for"; change verb "communicate" to "communicating" Q6 delete "towards" replace with "for" Q7 delete "to staff" replace "with teachers" and delete "with teachers" at the end of the sentence Q9 delete "toward" and replace with "in" Q10 delete "toward" replace with "in" Q11 delete "for" replace with "of"; delete "in" replace with when" Q15 delete "towards" replace with "for" Q16 change tense of "points" to "point"; change verb from "assessment" to "assessing" Q19 delete "toward" replace with "to meet" Q20 replace "approaches" with "strategies" Q25 delete "to"

	Domain 6	Q28 replace “in aligning” with “align”; delete “toward” replace with “with” Q30 replace “sustain” with “strengthen” and again with “maintain” OVERALL CONTENT: “Content is good/effective.” COMMENTARY: “Format is clear. I just made some changes to language and wording.”
T23	Did not respond	
T24	Need address	Took survey; no commentary
T25	Part I (Demographics) Part II (Instructions) Domain 1 Domain 2 Domain 3 Domain 4 and 5 headers	Q5 add choice for connection teachers who teach all three grades in middle school, or add “more than 1 grade level” Grammar spelling “extant” correct with “extent” Q1 wordy rework sentence Q5 change tense of “towards” to “toward” Q7 delete “to staff” replace “with teachers” and delete “with teachers” at the end of the sentence Q11 wordy rework Q16 wordy rework; break up into 2 sentences Change from “Provides” to “Provide” COMMENTARY: Keep answers closed-ended, yet provide an area for open-ended comment especially if “never” is selected.
T26	Domain 1 Domain 2 Domain 3 Domain 4 Domain 5 Domain 6	Q1 unclear as to meaning of “and for meeting them.” Q5 insert “ through” between “communicated” and “ the” Q11 unclear as to “reflects a knowledge for approaches toward differentiated instruction” Q13 substitute “content areas” for “differentiation” Q16 wordy Q21 unsure Q26 replace “identified school goals” with “identified student weaknesses/learning needs” Q29 use of “professional learning communities” is ambiguous OVERALL CONTENT: “All statements should use “differentiated instruction” or parts of it/phrased a different way.” COMMENTARY: Language – “Some statements are too wordy”; Format – eliminate no more than 5 questions; One open-ended question: “What is one form of support provided by your administrator in guiding your approach towards differentiation?”
T27	Need address	COMMENTARY: “I read through it and found no mistakes.”

T28	Need address Domain 1 Domain 2 Domain 3 Domain 4 Domain 6	 Q1 rephrase "wordy" Q5 should be broken up into separate questions" Q11 reword Q16 should be broken up into separate questions Q19 reword Q27 and Q28 are similar delete one item Q29 combine with Q26 or 30
T29	Part II (Instructions) Domain 1 Domain 2 Domain 3 Domain 4 Domain 6 	Judge asked "should first year teachers participate"; grammar spelling "extant" correct with "extent" Q1 "in terms of" is repetitious Q3 insert "the" between "framing" and "school's" Q4 delete "towards" and replace with "of" Q5 delete "towards" replace with "for"; insert "with" between "communicated" and "the" Q6 delete "towards" replace with "in the" Q9 delete "toward" replace with "of" Q10 delete "toward" replace with "in" Q11 delete "for" replace with "of"; delete "toward" replace with "to" Q13 insert "academic" between "of" and "content" Q15 delete "toward" replace with "for" Q16 change verb "designing" to "design"; change "assessment" to "assess" and delete "of"; insert "the" between "toward" and "standards" Q18 replace "to" with "of" Q19 replace "of" with "to" Q20 add coma after " management" Q28 change "aligning" to "align"; delete "toward" replace with "for" Q30 repetitious use of "sustain" No Commentary
T30	Part I (Instructions) Domain 1 Domain 6 	Q4 add multiple subject area/other option Q5 add multiple grade levels option Q3 insert "the" between "framing" and "school's" Q5 change "communicated" to "communicating" Q28 replace "in aligning" with "to align" Q30 repetitious use of "sustain" OVERALL CONTENT: "The contents of the survey seemed aligned to the overall purpose." COMMENTARY: "However, there are some "wording" issues that I would address."

Response Rate:

- Administrators: 2/5 or %; represents 40% of all administrators (5).
- Teachers: 23/30 or %; represents 31% of all teachers (72).

- 19 teachers responded with edits and commentary; 83% of all respondents (23)
- 1 teacher responded by reading over the survey and made commentary; 4% of all respondents (23)
- 3 teachers responded by reading over the survey and made no commentary; 13% of all respondents (23)

Forecast

If the pilot student mirrors the setting (the participating schools), then:

- 40% of administrators will participate or 2 out of 5 admin. per building = 40 admin. out of 100
- 32% of teachers will participate or 3 out 10 teacher per building = 420 teachers out of 1,260

Domain Edits (with corresponding number edits per item)

Domain	Item	Item	Item	Item	Item
1	1 with 13 edits	2 with 3 edits	3 with 6 edits	5 with 14 edits	6 with 2 edits
2	7 with 2 edits	8 no edits	9 with 3 edits	10 with 5 edits	11 with 11 edits
3	12 with 1 edit	13 with 1 edit	14 with 1 edit	15 with 4 edits	16 with 11 edits
4	17 with 3 edits	18 with 4 edits	19 with 9 edits	20 with 3 edits	21 no edits
5	22 with 2 edits	23 with 2 edits	24 no edits	25 no edits	
6	26 with 1 edit	27 with 2 edits	28 with 5 edits	29 with 3 edits	30 with 5 edits

Suggestions from participants (about commentary or Open-ended response)

- 4 respondents suggested an open ended question at the end of survey
- 1 respondent suggested a commentary box after each item
- Total number of respondents requesting some aspect of response: 5/23 respondents or 22% of all respondents (23).

Appendix I

On-Line Consent

ONLINE SURVEY CONSENT FORM

Title of Research Study: A Study of Differentiation: Comparing Instructional Leadership Practices as Perceived by Administrators and Teachers in Middle Schools

Researcher's Contact Information: Mark L. Lang, Doctoral Candidate, Educational Leadership for Learning, Bagwell College of Education, Kennesaw State University; email address: mark.lang1056@gmail.com; cell phone: 678-462-5981.

Introduction
You are being invited to take part in a research study conducted by Mark L. Lang a doctoral candidate at Kennesaw State University. Before you decide to participate in this study, you should read this form and ask questions about anything that you do not understand.

Description of Project
The purpose of this study is to identify, from the perspectives of administrators and teachers, instructional leadership practices most frequently used by school administrators in support of teachers' approaches towards differentiation in the middle school classroom. Instructional leadership practices, identified in the literature as supporting the implementation of differentiated instruction, will be examined across six core functions of instructional leadership. In turn, it is believed that this study may generate an awareness for the functions of instructional leadership practice, which facilitate the implementation of differentiated instruction, and can better enable leaders in buffering the challenges to implementation. School administrators with the knowledge of how to help teachers deal with the challenges to differentiation, through support and encouragement, are more likely to increase the implementation of differentiated instruction within their school norms of practice.

Explanation of Procedures
Participants will be asked to complete an on-line survey consisting of items designed to elicit the participants' ratings of the extent to which instructional leadership practices are used to support the implementation of differentiated instruction in the classroom. Responses will be based on a Likert-type 5 point response rating scale ranging from (1) Never, (2) Rarely, (3) Sometimes, (4) Often, or (5) Always.

Time Required
It is estimated that this part of the survey should take twenty minutes or less to complete.

Risks or Discomforts
Note that all research may entail some level of risk, though perhaps minimal. According to the federal regulations at **§46.102(i)**, *minimal risk* means that the probability **and** magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or

psychological examinations or tests. Your participation in the study is voluntary. The inability or refusal to participate or to discontinue your participation at any time will not result in penalty or loss of benefits which you are entitled. Again, you may choose to discontinue participation at any time.

Benefits
Although there will be no direct benefits to you for taking part in the study, the researcher may learn more about the instructional leadership practices of administrators that support teachers' implementation of differentiated instruction in the classroom. Information gathered during the course of the study will become part of the data analysis and may contribute to published research reports and presentations.

Confidentiality
The results of this participation will be anonymous. The researcher will maintain complete confidentiality regarding your participation. Numeric identifiers will be used, however, participants' identity and responses will at no time be revealed. Data will not remain on a desktop or laptop computer but rather will be stored on a USB memory key and secured in a locked cabinet. Only the researcher and the researcher's committee chairperson, Dr. TC Chan, Bagwell College of Education, Kennesaw State University, Kennesaw, Georgia, will have access to the data. The data will be maintained through the course of this study and eventually destroyed.

Inclusion Criteria for Participation
You must be 18 years of age or older and a XXXX School District middle school administrator or teacher in order to participate in this study.

Use of Online Survey
IP addresses will not be collected.

Research at Kennesaw State University that involves human participants is carried out under the oversight of an Institutional Review Board. Questions or problems regarding these activities should be addressed to the Institutional Review Board, Kennesaw State University, 585 Cobb Avenue, KH3403, Kennesaw, GA 30144-5591, (470) 578-2268.

PLEASE PRINT A COPY OF THIS CONSENT DOCUMENT FOR YOUR RECORDS, OR IF YOU DO NOT HAVE PRINT CAPABILITIES, YOU MAY CONTACT THE RESEARCHER TO OBTAIN A COPY

☐ I agree and give my consent to participate in this research project. I understand that participation is voluntary and that I may withdraw my consent at any time without penalty.

☐ I do not agree to participate and will be excluded from the remainder of the questions.

Appendix J

Principals' Information Letter

Dear Principals,

Thank you once again for allowing me to conduct my study at your school. My study entitled **A Study of Differentiated Instruction: Comparing Instructional Leadership Practices as Perceived by Administrators and Teachers** was approved by both Kennesaw State University IRB (Oct.4, 2016) and XXXX School District IRB (preliminary approval to contact local school principals on May 12, 2016; and final formal approval received on Sept. 27, 2016). Your responses to my requests have been instrumental in allowing for my research to be carried forward into the survey phase.

Per XXXX School District IRB, participating middle school administrators (not the researcher) are to forward to their staffs directions and links to the study's questionnaire.

This Principal Information Letter (sent out in both hardcopy and email) is intended to provide directions to participating middle school principals on how to forward the separate survey links for the administrators' and teachers' questionnaires that are preceded by an on-line letter of consent (attached to this letter), which describes the purpose of the study, invites participation, and provides assurances that there are no penalties for choosing not to participate in the research. Again, participation is voluntary.

All information gathered by the researcher will be securely stored throughout the study.

The survey (window) will run from Nov. 17, 2016 to Dec. 7, 2016.

Sincerely,

Mark L. Lang at: mark.lang@xxxx12.org or (w) 678-594-8267; (cp) 678-462-5981

School: **XXXX MS** Principal: **XXXXX**

(Please copy and paste this hyperlink *https://www.surveymonkey.com/r/KGPD6KC* into email to administrators with the letter of solicitation)

(Please copy and paste this hyperlink https://www.surveymonkey.com/r/KGFW37T into email to teachers with the letter of solicitation)

Appendix K

IRB Permission

Kennesaw State University

10/4/2016

Mark Lang

RE: Your application dated 9/29/2016, Study #17-109: A Study of Differentiated Instruction: Comparing Instructional Leadership Practices as Perceived by Administrators and Teachers

Dear Mr. Lang:

Your application for the new study listed above has been administratively reviewed. This study qualifies as exempt from continuing review under DHHS (OHRP) Title 45 CFR Part 46.101(b)(2) - educational tests, surveys, interviews, public observations. The consent procedures described in your application are in effect. You are free to conduct your study.

Please note that all proposed revisions to an exempt study require IRB review prior to implementation to ensure that the study continues to fall within an exempted category of research. A copy of revised documents with a description of planned changes should be submitted to irb@kennesaw.edu for review and approval by the IRB.

Thank you for keeping the board informed of your activities. Contact the IRB at irb@kennesaw.edu or at (470) 578-2268 if you have any questions or require further information.

Sincerely,

Christine Ziegler, Ph.D.
KSU Institutional Review Board Chair and Director

cc: tchan@kennesaw.edu

Appendix L

Cobb County IRB Approval

COBB COUNTY SCHOOL DISTRICT
Empowering Dreams for the Future

P.O. Box 1088
Marietta, GA 30061
Telephone: (770) 426-3300
www.cobbk12.org

May 12, 2016

Mr. Mark L Lang
3049 Vineyard Way
Smyrna, GA 30082

Dear Mr. Lang,

Your application to conduct research in Cobb County School District has been administratively approved and a copy of your proposal titled, **A Study of Differentiated Instruction: Comparing Instructional Leadership Practices as Perceived by Administrators and Teachers in Middle Schools**, sent to the principal of each proposed school. You may now contact the individual schools/departments about their participation in the study. Listed below are the schools identified in your application, along with the name and phone number of the principal. A copy of the *Principal Agreement to Participate Form* is included. After gaining approval from school principals, submit the original form to the Office of Accountability & Research. Once the form has been received in the Office of Accountability and Research, a final letter of approval will be sent to you.

Cobb County Middle Schools	Principal	Phone
Awtrey	Jeffrey Crawford	770-975-6615
Barber	Dr. Lisa O. Williams	770-975-6764
Campbell	Jonathan Tanner	678-842-6873
Cooper	Dr. Vanessa Watkins	770-819-2438
Daniell	David Nelson	678-594-8048
Dickerson	Dr. Carole Brink	770-578-2710
Dodgen	Dr. Loralee Hill	770-578-2726
Durham	Dr. Patricia Alford	770-975-6641
East Cobb	Leetonia Young	770-578-2740
Floyd	Dr. Teresa Hargrett	770-819-2453
Garrett	Kimberly Jackson	770-819-2466
Griffin	Paul Gillihan	678-842-6917
Hightower Trail	Laura Montgomery	770-578-7225
Lindley	Lisa M. Williams	770-819-2496
Lindley 6th Grade Academy	Dr. Denise Magee	770-819-2414

Lost Mountain	Candace Wilkes	678-594-8224
Lovinggood	Angela Stewart	678-331-3015
Mabry	Merrilee Heflin	770-928-5546
McCleskey	Claire Lyons	770-928-5560
McClure	Kelly Metcalfe	678-331-8131
Palmer	Lisa Jackson	770-591-5020
Pine Mountain	Dr. Jasmine Kullar	678-594-8252
Simpson	Dr. Andy Bristow	770-971-4711
Smitha	Clint Terza	678-594-8267
Tapp	Tiffany Honore'	770-222-3758

REVIEW COMMITTEE COMMENTS: It is not recommended to address all middle school teachers via e-mail but rather connect through the principal once approval has been received. Request that the principal forward the e-mail to the teachers.

Should modifications or changes in research procedures become necessary during the research project, submit changes in writing to the Office of Accountability and Research. If you have any questions regarding the final approval process, contact our office at (770) 426-3450.

Sincerely,

Jennifer Allen, MPA
Manager, Research & Grants Administration
Office of Accountability & Research

Appendix M

Participating Middle School Demographics

School	Status	Size	Gender M/F	FRL	SWD	GIFT	ELL	Asian	White	Black	Hispanic	Multi-racial
4050	non-Title	850	410/440	36.60%	15.20%	19.10%	2.80%	5.41%	43.76%	27.53%	16.47%	6.47%
0290	Title1	1445	709/736	60.30%	9.90%	16.80%	7.50%	2.56%	9.20%	44.08%	40.83%	2.84%
0502	Title1	992	509/483	74.80%	13.80%	10.30%	2.80%	1.01%	7.46%	70.87%	16.53%	3.73%
0275	non-Title	1268	616/652	6.60%	13%	41.50%	0.90%	19.56%	66.25%	5.36%	6.07%	2.60%
0299	non-Title	1067	530/537	11.30%	14.70%	30.60%	0.60%	4.12%	74.51%	12.18%	6.47%	2.44%
5058	Title1	930	487/443	81.30%	17.40%	7.00%	10.50%	1.29%	10.22%	44.84%	40.86%	2.36%
1060	Title1	869	423/436	88.60%	15.00%	5.90%	8.40%	0.35%	9.09%	59.38%	28.42%	2.65%
0202	Title1	1045	534/511	87.80%	14.60%	7.20%	8.70%	0.48%	2.68%	59.81%	35.22%	1.72%
0499	non-Title	1092	540/552	10.10%	12.20%	33.00%	0.00%	3.21%	71.61%	15.93%	5.77%	3.21%
0607	non-Title	1419	689/730	24.90%	11.70%	28.30%	1.10%	3.24%	46.58%	32.91%	11.91%	5.07%
0178	non-Title	880	444/436	9.90%	13.30%	31.80%	70.00%	6.82%	70.45%	7.73%	10.00%	4.66%
0507	non-Title	1237	627/610	22.70%	16.80%	26.70%	1.10%	4.93%	61.44%	18.43%	11.88%	2.75%
0184	non-Title	684	361/323	39.50%	23.20%	21.60%	3.10%	3.80%	57.75%	15.79%	17.98%	4.68%
0602	Title1	939	487/452	43.60%	16.70%	22.00%	2.70%	4.05%	45.47%	26.09%	18.64%	5.22%
0389	non-Title	974	520/454	12.90%	14.80%	37.50%	1.20%	9.65%	65.40%	10.99%	8.52%	9.65%
2094	Title1	1015	539/476	85.90%	17.50%	6.00%	14.00%	1.77%	5.62%	39.41%	50.15%	2.96%
1	Title1	846	438/408	68.40%	15.00%	12.60%	3.20%	1.30%	11.35%	61.47%	22.34%	3.19%
1056	Title1	1184	619/565	64.50%	14.20%	13.90%	7.90%	4.48%	21.54%	45.27%	24.83%	3.29%