

The Influence of the Instructional Leadership of Principals
on Change in Teachers' Instructional Practices

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Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State
University in fulfillment of the requirements for the degree of

Doctor of Education

in

Educational Leadership and Policy Studies

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March 30, 2010
Blacksburg, VA

Keywords: Teachers, Instructional Practices, Principals, Instructional leadership

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ABSTRACT

Since the 1980s, researchers have suggested that principals are an integral part of school effectiveness through their actions as instructional leaders. Standardized testing and strict accountability, which heavily influence today's public schools, make principals responsible for student achievement. They fulfill this responsibility by influencing and guiding the quality of teaching and learning in their schools. The purpose of this study was to measure how high school principals influenced change in teachers' instructional practices; however, other factors influencing classroom instruction surfaced.

A two-step methodology was used. The first step was a qualitative study in which interviews with 9 principals and 9 teachers from high schools across the country were conducted. The purpose of this step was to collect data that helped develop a questionnaire that was used in a quantitative study. The constant-comparative method was used to analyze data collected from the interviews. The influence of principals on change in teachers' instructional practices was limited. Several other factors emerged as influences on teachers. The original theory was modified and the new theory guided the development of the questionnaire.

Step two of the methodology was a quantitative study in which a questionnaire was distributed to a national sample of teachers. Multiple regression analysis was used to analyze data collected from the questionnaire. Two of the five predictor variables were significantly related to change in teachers' instructional practices. The strongest

predictor of change in teachers' instructional practices was pressure influences. External growth influences was the other variable significantly related to change in teachers' instructional practices. The remaining variables, administrative influence, peer influence, and self/family/student influence, were not predictors of change in teachers' instructional practices. Issuing directives, one of the pressure influences, was the only principal influence significantly related to change in teachers' instructional practices. Results indicated that teachers were influenced by many variables, many of which are outside of the principal's control.

DEDICATION

This dissertation is dedicated to my wife, Crystal Lineburg. Words can't express how much your love, support, and understanding throughout this process has meant to me. Your constant encouragement and belief in me as a person made completion possible. I love you with all of my heart.

ACKNOWLEDGEMENTS

I am honored to take this opportunity to thank the many people who have helped me through this process. This has been an unbelievable journey that I will never forget. I would like to thank and acknowledge the following.

Dr. David Parks, chair of my committee. I greatly appreciate your countless hours of time over the years and constant guidance throughout this process. Your assistance and encouragement made completion possible. I most want to thank you for your patience with me and never giving up on me.

Dr. Daisy Stewart, Dr. Wayne Tripp, and Dr. Doug Arnold, members of my committee. Your feedback, guidance, and support made completion possible.

My parents, Norman and Joann Lineburg. I am truly blessed to have the best parents in the world. Your unconditional love, support of my endeavors, model of hard work, example of being master educators and unyielding belief in me as a person made completion possible. This dissertation is truly the reflection of everything you have taught me over the years. I love you both.

My grandparents, Hershel and Lucille Lineburg, and Robert and Neva Young. The memories of my grandparents and the stories of their sacrifices and hard work for their families have helped make me the person I am today. I wish you could be here to see this.

My Uncle Glenn and Uncle Iky. You left this world way too early, but the memories of you both have made me a better person. I wish you could be here to see this.

My Uncle Bobby. Your model of being a master educator made completion possible. You have always been like a second father to me and helped make me the person I am today.

My brother, Dr. Mark Lineburg for your assistance with my dissertation, words of wisdom, constant encouragement, and model of hard work. Completing your doctorate in four years and raising three wonderful kids at the same time kept me motivated throughout this process.

My brothers Robert and Wayne, who have stood by me throughout this process. Your model of hard work and encouragement of me as a person made completion possible. I am blessed to have three brothers whom I consider my best friends.

Paul and Joy Barnard, my in-laws. You have been tremendous supporters of me throughout this process. You have picked me up several times when I was down. Thank you for being such wonderful in-laws. I am truly blessed to have you.

To my former boss Dr. Martha Cobble and current boss Mr. Steve Spangler. Thank you for your understanding over the years and willingness to work with me throughout this process. You have been tremendous supporters of me and you helped make completion possible.

To Dr. Andrew Kufel. Thank you for the time you have given me over the years helping with my dissertation. Your guidance helped make completion possible.

To Holly Wakeland. Thank your for taking the time to proofread my paper. Most of all, thanks for being such a dear friend over the years.

To all of my friends whom I am fortunate to say I have too many to acknowledge. You have all stood by me throughout this process and encouraged my completion.

Thank you all from the bottom of my heart. I am truly blessed to have so many wonderful friends.

To the faculty and staff of the Educational Leadership Program at Virginia Tech. The knowledge and wisdom I have learned from each of you will guide my professional life in the future.

To the entire faculty and staff of Virginia Tech, where I have earned my bachelor's degree and now a doctoral degree. I am forever indebted to the faculty and staff of this wonderful institution. I started at Virginia Tech as a scared high school graduate unsure of my academic abilities. I leave Virginia Tech as a man armed with the knowledge and confidence to pursue my professional and personal dreams. I will always be a Hokie.

Thanks again to my wonderful family, friends, and colleagues. I am a truly blessed person. I would like to end with a favorite quote of mine by H. Robert Schuller, "Yes, you can be a dreamer and a doer too, if you will remove one word from your vocabulary, impossible."

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CHAPTER 1

INTRODUCTION TO THE STUDY

Principals have been found to affect the type of instruction teachers use in their classrooms through their actions as instructional leaders (Blase & Blase, 1998; Blase & Roberts, 1994; King, 1991; Sheppard, 1996; Smith & Andrews, 1989). There is evidence that elementary principals are more active instructional leaders than high school principals (Cotton, 2003, Kmetz & Willower, 1982). The focus of this study is on how high school principals influence change in teachers' instructional practices.

Context of the Study

The context for the study begins with an explanation of why the position of principal was chosen as a topic for study. This is followed by a definition of changes in teachers' instructional practices and why teachers' instructional practices were chosen as a topic for investigation. The last section is an explanation of the importance of both topics through an exploration of current educational reforms involving the standards and accountability movement.

The Principal

The position of principal has become a popular topic of research. The superintendent was the focus of most literature on educational administration during the 1960s (Owens & Shakeshaft, 1992). This began to change in the late 1960s. Ninety-four percent of studies on the topic of educational leadership from 1967 to 1980 focused on public school administrators (Bridges, 1982). Out of these studies, the high school principal was researched more than the superintendent or the

elementary principal (Bridges). Literature from the 1980s continued to emphasize the principal more than other school administrators (Camburn, Rowan, and Taylor, 2003; Owens & Shakeshaft, 1992).

The position of principal was chosen for investigation because it has been identified as an important component of an effective school (Cotton, 2003; Goodwin, Cunningham, & Childress, 2003; Hallinger & Heck, 1996). Principals in poor, urban schools with high-achieving students have been found to be stronger instructional leaders than principals in poor, urban schools with low-achieving students (Edmonds, 1979). The U.S. Department of Education (2000) released a report portraying the principal's importance by listing ineffective principals as one of the barriers to improving teaching.

Change in Teachers' Instructional Practices

Change in teachers' instructional practices refers to the amount of change in teachers' instructional practices over the previous two school years, 2006-2007 and 2007-2008. Changes in teachers' instructional practices were conceptualized as decreasing over the past two school years, increasing over the past two school years, remaining the same over the past two school years, or teachers did not use the practice during the last two school years.

The importance of teachers' instructional practices is demonstrated by current studies devoted to analyzing the effect of teacher quality on student achievement. Teacher quality refers to the characteristics and qualifications held by teachers (Stronge, 2002). Darling-Hammond (2000) found that two teacher quality characteristics, certification and degree in field to be taught, were significantly and

positively correlated with student achievement on the reading and mathematics portions of the NAEP tests administered in 1990, 1992, 1994, and 1996. The strongest negative correlations were between student achievement and percentage of new teachers who were not certified (r between $-.40$ and $-.63$) and percentage of teachers with less than a minor in the field they taught (r between $-.33$ and $-.56$). Kaplan and Owings (2002a) stated, "Staffing schools with highly qualified teachers who have strong teaching skills has become a national concern" (p. 22). They asserted that principals are responsible for hiring these individuals, further highlighting the need to examine how principals influence teachers.

A report released in 2003 by the Mid-continent Regional Educational Laboratory (McREL) highlighted the importance of teachers and principals (Waters, Marzano, & McNulty, 2003). The report was a compilation of 30 years of research on characteristics of effective schools. Waters et al. conducted three separate meta-analyses. The first two concentrated on student characteristics and teacher and school practices in effective schools. The third analysis contained results indicating that leadership was an important component of an effective school (Waters et al.).

In a review of research on leadership, Leithwood, Louis, Anderson, and Wahlstrom (2004) concluded that the classroom practices of teachers have the most influence on student achievement. Waters et al. (2003) discovered that schools that concentrated on the most effective school and classroom practices, including instructional strategies, could improve their passing rate on a standardized test from 50% to 72%. They concluded that a one standard deviation improvement in principal leadership behaviors resulted in average student achievement increases on a

standardized, norm-referenced test from the 50th percentile to the 60th percentile. Further discussion of research findings on how principals influence changes in teachers' instructional practices is presented in the section on the theory of influences on change in teachers' instructional practices.

Standards and Accountability Movement

Education began to change in the 1980s with a nationwide trend toward standards and accountability. These reforms have placed emphasis on holding students accountable for achieving high academic standards (Heinecke, Curry-Corcoran, & Moon, 2003). In 1989, President George H. W. Bush invited governors from all 50 states to Charlottesville, Virginia, for an education summit. At this summit, the 50 governors discussed the current state of education and issued goals, called Goals 2000, to improve academics in public schools across the country (Heinecke et al.). Following this summit, education reforms in the 1990s began to place stricter accountability for student achievement at the school level (Elmore, 1999; Lashway, 2003; Mid-continent Research for Education and Learning, 2001; Tucker, 2003). By the year 2000, all states had established new and more rigorous academic standards in mathematics, social studies, science, and English. By the same year, all but two states had established a system for testing students through standardized tests to measure their attainment of these academic standards (Heinecke et al.).

The standards and accountability movement was made even stronger on January 8, 2002, when President George W. Bush signed into law the No Child Left Behind Act (NCLB) (U.S. Department of Education, n.d.b.). The NCLB Act requires

states to implement statewide accountability systems for all public schools (Cotton, 2003). States must include in their systems challenging standards in mathematics and reading with yearly testing for all students in grades 3 through 8, and annual measurable objectives that ensure all students reach proficiency within 12 years. States must break down assessment results by subgroups of disadvantaged, race, disability, and Limited English Proficiency. Schools who fail to make Adequate Yearly Progress (AYP) toward state proficiency goals could face a variety of actions, from the development of an improvement plan to the worst case scenario of complete restructuring of the school by the state (U.S. Department of Education, n.d. b).

Elmore (1999) asserted that principals are expected to possess the skills and knowledge to improve teacher instruction and student achievement. According to Lashway (2003) and Tucker (2003), the standards and accountability movement has increased the importance of the principal's role in school effectiveness. What makes this more necessary is the fact that schools are expected to provide students from all socioeconomic backgrounds the tools to achieve success (Murphy & Hallinger, 1992). Murphy and Hallinger stated that schools have not always been designed this way because in the past students from mainly higher socioeconomic backgrounds were the ones succeeding in school. Reforms associated with the standards and accountability movement bring tougher requirements for schools, which necessitate a strong leader as principal who can guide reforms in instruction and empower teachers, parents, and students to get involved in these changes (Elmore, 1999; Mid-continent Research for Education and Learning, 2001; Murphy & Hallinger,

1992). Today's principals are motivated to become more active instructional leaders due to the standards and accountability movement, and they must have strong instructional skills and knowledge of teaching and learning (Goodwin, Cunningham, & Childress, 2003; Lyons & Algozzine, 2006).

The NCLB Act has opened the door to teaching positions for those who have alternative certifications (Kaplan & Owings, 2002b). These individuals may only receive 4 to 8 weeks of training in essential areas such as classroom management and lesson planning (Berry, 2004; Kaplan & Owings, 2002a). Principals may be called upon to provide training to individuals who do not come with strong pedagogical backgrounds. Schools are required to provide high quality professional development that addresses teacher performance in the classroom. Principals may need to provide teachers training and work with them to improve classroom instruction (Kaplan & Owings, 2002b; U.S. Department of Education, n.d.a).

More than ever before, principals are considered essential to the success of schools (Cotton, 2003; Goodwin et al., 2003). Principals are expected to be strong instructional leaders (Tucker, 2003; Wahlstrom & Louis, 2008). Knowing how principals influence the classroom instruction of teachers could aid principals in dealing with the rigorous demands set forth by the NCLB Act and state accountability systems.

Purpose of the Study

Writers (Edmonds, 1979; Gross & Herriott, 1965; Hallinger, 1992; McGhee & Lew, 2007) have asserted for decades that principals should provide instructional leadership. Edmonds found a link between the effectiveness of 55 schools and

strong principal leadership, starting a series of studies referred to as effective schools research (Hallinger). More recent researchers (Goodwin et al., 2003; Tucker, 2003) have found that standards-based reforms make this role even more important for principals.

The amount of influence principals have as instructional leaders may depend on the level of school, elementary or high school (Cotton, 2003; Smith & Andrews, 1989). Kmetz and Willower (1982) observed the behaviors of five elementary principals. They found that elementary principals spent more time on instructional issues compared to secondary principals in an earlier study. High school principals may perceive that they are less effective than their elementary counterparts in having a positive influence on instruction (Johnson & Holdaway, 1990). Secondary principals were found to be more effective in promoting a safe school environment than being an instructional leader (Thomason, 1988). Wahlstrom and Louis (2008) stated that principals can be effective instructional leaders at any level. They found that level of school did not influence the effectiveness of principals as instructional leaders.

The purpose in this study was to measure how high school principals influence change in teachers' instructional practices; however, other factors influencing classroom instruction surfaced, and these are included in the report of the findings. The researcher hopes to influence what principals are doing as instructional leaders and add to the understanding of what it means to be a leader of instruction. Information collected in this study could be useful in planning staff

development opportunities for principals and in reconceptualizing the content of principal preparation programs.

Research Questions

The overall research question was: What are the influences on change in teachers' instructional practices? There were two sub-questions of interest: (1) How do principals influence change in teachers' instructional practices? (2) What are other influences on change in teachers' instructional practices?

A Theory of Influences on Change in Teachers' Instructional Practices

This is a theory of change in teacher instructional practices. It is an explanation for changes that teachers make in their instruction based on influencing factors, with special emphasis on the influence of high school principals. The theory has two components of influence: (1) leadership strategies of principals and (2) other influences on teachers' classroom practices. The main interest is in the leadership behaviors of principals and how these influence the instructional practices that teachers use in their classrooms. The other influences are included to acknowledge that the principal is not the only influence on teacher classroom instruction. The theory is based on research findings, commentary literature, and personal experiences in public education. All are combined to form a concatenated theory (Mullins, 1971; see Figure 1).

Leadership Strategies and Change in Teachers' Instructional Practices

Principals have an influence on teachers' instructional practices. Principals use the following leadership strategies to change teachers' instructional practices: (a) communicating goals (Blase & Roberts, 1994), (b) supervising instruction (Blase

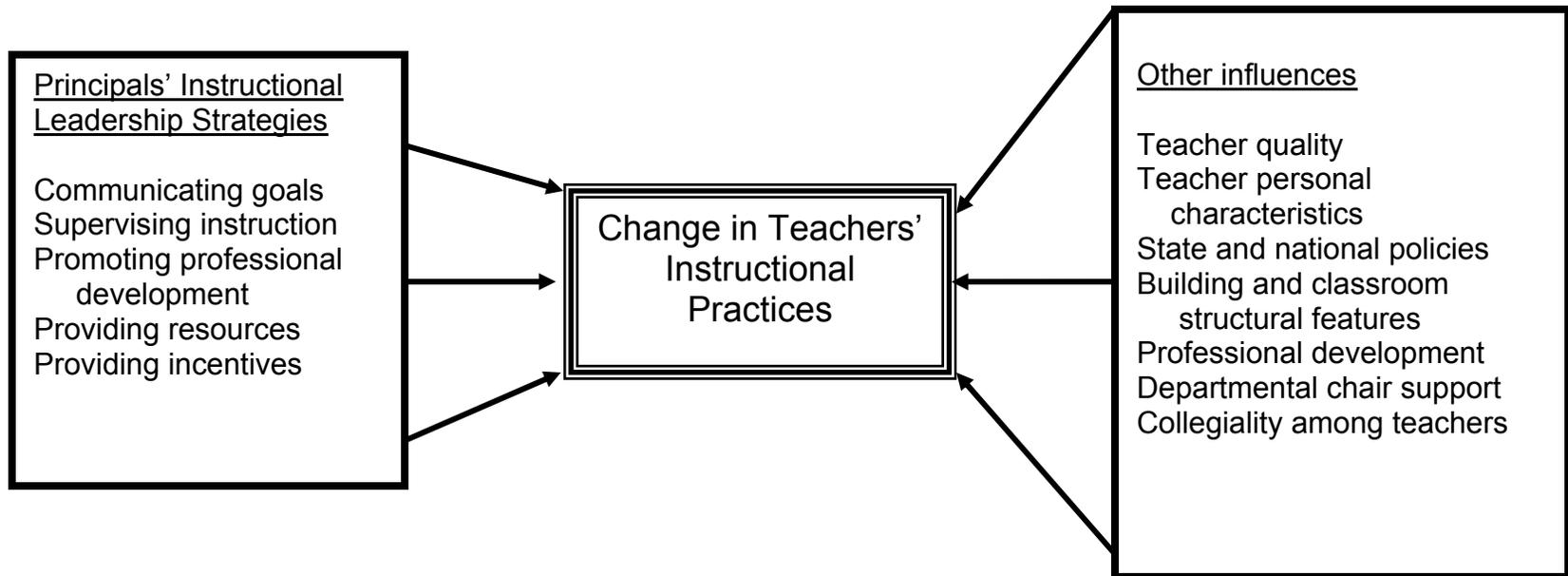


Figure 1. A theory of change in teacher instructional practices

& Blase, 1998), (c) promoting professional development (Blase & Blase), (d) providing resources (Appleton & Kindt, 1999), and (e) providing incentives (Sheppard, 1996). Research on each variable is included in this section.

Communicating Goals and Change in Teachers' Instructional Practices

Principals communicate school goals in many different ways. They often do it through faculty meetings and departmental chair meetings. They communicate them through individual meetings such as follow-up conferences to classroom observations.

Teachers perceive their principals to be strong instructional leaders when they communicate school goals through (a) interacting with them on their classroom performance, (b) being accessible to discuss instructional matters, (c) allowing teachers to try new instructional strategies by letting them know that it is okay to take risks, and (d) clearly communicating a vision for the school (Smith & Andrews, 1989). Communicating school goals was found to positively affect the type of instruction teachers delivered (Blase & Roberts, 1994; Sheppard, 1996).

Communication of school goals by the principal has a significant, positive relationship with teacher classroom innovativeness (Sheppard, 1996). Classroom innovativeness is a teacher's willingness to try new and various instructional approaches (Sheppard). At the high school level, Sheppard found that communication of school goals by the principal accounted for the largest amount of variance in classroom innovativeness. He discovered that communicating school goals, framing school goals, and promoting professional development together accounted for 57% of the variance in classroom innovativeness. Sheppard reported

that framing school goals accounted for the largest amount of variance out of the three, but did not report the specific amount of variance.

Communicating school goals encourages teachers to use more reflection, which may lead to teachers adjusting their instructional techniques to address the different learning needs of students (Blase & Roberts, 1994). The connection between the communication of goals by principals and teachers' classroom instruction, however, was weak. Blase and Roberts discovered that 33% of the responding teachers felt communicating school goals encouraged them to use more reflection. Any leadership strategy identified by 35% or more of the responding teachers was considered a high impact influence. They did not explain how 35% was set as the minimum for a high impact.

Supervising Instruction and Change in Teachers' Instructional Practices

Supervision of teachers' performance by principals can affect classroom instruction. Principals can use classroom observations and informal visits to the classroom to see what teaching strategies are being used and assess their effectiveness. They can then use instructional conferences to talk with teachers about classroom objectives and instructional methods.

Supervision may be defined as, "All efforts to monitor teacher performance" (Duke, 1987, p. 104). It includes principals observing teachers in the classroom, conducting instructional conferences, and using professional development for classroom improvement. Supervision provides a way for principals to monitor instruction (Hallinger & Murphy, 1985). Principals use classroom visits to make sure

teachers are complying with the instructional goals of the school (Hallinger & Murphy).

Instructional conferences with teachers have an effect on teacher classroom instruction (Blase & Blase, 1998; King, 1991). Blase and Blase found that teachers believe good principals use five strategies during instructional conferences: “(a) making suggestions for instructional improvement, (b) giving feedback on classroom observations, (c) modeling good instruction, (d) using inquiry to discover what teachers think, and (e) soliciting advice and opinions from teachers” (p. 28). These strategies positively affected teachers by increasing their use of reflectively informed instructional behaviors, which referred to teachers taking more risks in the classroom by using different instructional strategies and placing more emphasis on instructional planning (Blase & Blase).¹

Instructional conferences with principals influenced teachers to implement higher-order thinking skills in their lessons for high school social studies students (King, 1991). In follow-up discussions with teachers in which they both analyzed a lesson, principals encouraged teachers to use more pedagogy that focused on higher-order thinking skills. Consequently, teachers moved away from more

¹The findings of Blase and Blase (1998) should be taken with caution due to a potential flaw in the methodology. Their data collection instrument contained questions that asked teachers to describe in detail a strategy used by the principal that influenced what they did in the classroom. Such questions contain the assumption that principals influence teachers’ classroom instruction and may lead to biased responses.

traditional types of pedagogy such as direct instruction (King). These supervisory behaviors created a climate at the school in which teachers openly discussed and critically thought about instructional issues related to higher-order thinking skills (King).

Visiting classrooms is a supervision strategy that positively affects teachers (Blase & Blase, 1998; Blase & Roberts, 1994). In this strategy, principals use informal visits to classrooms to learn what teachers are doing, to assess whether sound instruction is being delivered, and to interact with teachers (Blase & Roberts; Hallinger & Murphy, 1985). Blase and Roberts noted that visibility was related to using new teaching strategies, considering different teaching techniques to address the needs of students, and increasing levels of instructional time on task. They believed that visibility had these effects on teachers because of increased interaction, feelings of trust, feelings of respect, and more opportunities for teachers to express themselves.

Blase and Blase (1998) added to the findings of Blase and Roberts (1994). They found that visibility in the school by walking around and informally visiting classrooms was related to increased use of reflectively informed behaviors and good teacher behavior. The similarity in findings with almost identical populations supports their validity.

Some behaviors of principals were found to have a negative effect on teachers (Blase & Blase, 2004). These behaviors included discounting teachers' needs, isolating teachers, withholding resources from teachers, spying on teachers, overloading teachers, criticizing teachers, threatening teachers, giving teachers

unfair evaluations, and preventing teacher advancement. Blase and Blase found that teachers felt their creativity was limited by these behaviors. Teachers stated that they could not be instructional risk takers and relied on traditional teaching methods because of a lack of support from their principal (Blase and Blase).

Promoting Professional Development and Change in Teachers' Instructional Practices

Promoting professional development is the most common principal leadership behavior found by the researcher to have a positive effect on teacher classroom instruction (Blase & Blase, 1998; Desimone, Porter, Garet, Yoon, & Birman 2002; Johnsen, Haensly, Ryser, & Ford 2002; Sheppard, 1996). Professional development is thought to be a key to improving teacher instruction (Elmore & Burney, 1999). Administrators at the district and school levels are responsible for providing teachers with quality professional development (Desimone, Smith, & Ueno, 2006). Principals accomplish this through alerting teachers to professional development opportunities and organizing in-service activities at their schools that focus on specific instructional goals (Hallinger & Murphy, 1985). Principals promote professional development by using supervisors and colleagues to train teachers on instructional strategies, giving teachers time for independent studies, and using external sources such as college courses, district-level workshops, and consultants who are experts in a particular area (Duke, 1987).

The promotion of professional development by principals increases teachers' use of higher-order instructional strategies when they receive professional development on a particular strategy (Desimone et al., 2002). Higher-order

instructional strategies involved teaching in non-traditional ways and were found to increase the learning capacity of students (Desimone et al.). Principals were perceived by teachers to improve writing instruction by providing staff development on teaching the writing process (McGhee & Lew, 2007).

A significant relationship was found by Sheppard (1996) between principals promoting professional development and teacher willingness to try new and various instructional ideas in the classroom. There was no mention by Sheppard of what specific activities that principals engaged in to promote professional development.

Sheppard (1996) produced an interesting result. The only area in which promoting professional development was not the most important effect on teachers was on teacher innovativeness at the high school level. This raises a question concerning the effect high school principals have on teacher classroom instruction. It could be that principals at the high school level are not the ones promoting professional development; rather teachers could be influenced by other sources such as supervisors in the central office.

The promotion of professional development by principals increases teachers' use of reflectively informed behaviors, including innovative ideas and instructional risk-taking (Blase & Blase, 1998). Blase and Blase provided a list of strategies principals used to promote professional development that increased teachers' use of reflectively informed behaviors: (a) emphasizing the study of teaching and learning, (b) supporting collaboration among educators, (c) developing coaching relationships among educators, and (d) applying principles of adult learning to staff development.

Principals supporting and encouraging participation in professional development activities influence teachers to change their classroom practices to meet the needs of gifted students (Johnsen et al., 2002). These professional development activities included training from a private organization on how to change the curriculum to meet the needs of gifted students. Principals actively encouraged teacher participation in these professional development activities, and this support motivated teachers to continue participating (Johnsen et al.). King (1991) found that the participation of principals in curriculum work with teachers was a key to the implementation of higher-order thinking skills by these teachers.

Providing Resources and Change in Teachers' Instructional Practices

Principals influence classroom instruction by supplying teachers with necessary resources. Providing resources includes more than just monetary resources and materials. According to Duke (1987), providing resources includes “(a) scheduling, (b) developing the school calendar, (c) hiring and correctly placing teachers, (d) adopting textbooks, and (e) purchasing necessary materials to support instruction” (p. 82). Principals influence student achievement through helping teachers acquire necessary resources to support instruction (Heck, Larsen, & Marcoulides, 1990).

The lack of resources may be a barrier to the use of some instructional strategies by teachers. The lack of science equipment and reference materials was found by Appleton and Kindt (1999) to dictate how teachers taught their students. Schools did not have the necessary resources to support certain instructional strategies and activities. There was no mention of the principal, but Appleton and

Kindt found that colleagues were the teachers' only support in this area. The researchers cited the school and school system as the reason for the lack of science resources. This places responsibility for not providing adequate resources on principals and administrators at the central office level.

Providing resources is viewed by teachers as effective leadership by principals (McGhee & Lew, 2007). Teachers perceived that principals improved their writing instruction by providing resources such as technology (McGhee & Lew). Smith and Andrews (1989) discovered that a majority of strong instructional leaders were given positive ratings as resource providers when they were seen as "(a) promoting staff development activities for teachers, (b) possessing knowledge of instructional resources, (c) mobilizing resources and district support to achieve academic goals, and (d) the most important instructional resource in the school" (p. 32). Teachers perceived the most important strategies principals engaged in as resource providers were promoting professional development and providing teachers with support through instructional resources (Smith & Andrews).

Providing Incentives and Change in Teachers' Instructional Practices

Organizations use incentives such as praise, good working conditions, material rewards, pride in work completed, emotional attachment to the organization, and positive working relationships with colleagues to motivate employees (Barnard, 1938). Providing incentives for teachers is a strategy principals can use to motivate teachers to change their instructional practices. Principals provide incentives by giving formal awards and using public or individual praise for teachers (Hallinger & Murphy, 1985). Praising teachers in front of their peers can be effective because it

encourages improvement by all teachers. Most teachers do not receive sufficient monetary compensation for what they do in the classroom (Hallinger & Murphy). Recognizing teachers for their classroom performance provides an incentive for improvement and continued growth.

Providing incentives for teachers influences teacher innovativeness in the classroom (Blase & Roberts, 1994; Sheppard, 1996). Sheppard found that providing incentives was one of five variables that accounted for 52% of the variance in teachers' innovativeness at the elementary level. Providing incentives did not account for variance in teacher innovativeness at the high school level. Sheppard concluded that elementary principals had more of an impact on teacher instruction than their high school counterparts.

Principals motivate teachers to try instructional strategies through rewards such as praise and material rewards (Blase & Roberts, 1994)). Rewards were found by Blase and Roberts to positively affect 38% percent of responding teachers by increasing their use of innovative ideas within the classroom. A similar percentage of teachers (37%) noted that the use of rewards increased levels of time on task. Blase and Roberts believed these percentages are large enough to be considered important effects on teachers.

Summary of Principals' Influence on Change in Teachers' Instructional Practices

Principal leadership strategies affect the classroom instruction of teachers. Communicating goals, supervising instruction, promoting professional development, and providing incentives increase teachers' use of reflectively informed behaviors (Blase & Blase, 1998; Blase & Roberts, 1994). Sheppard (1996) found that

communicating goals and promoting professional development increase teachers' use of innovative instructional practices. Supervising instruction motivates teachers to implement higher-order thinking skills (King, 1991), and promoting professional development influences teachers to change instructional practices to meet the needs of gifted students (Johnsen et al., 2002).

Other Influences on Change in Teachers' Instructional Practices

Principal behavior was not the only influence found on teacher instructional practices. Other influences included (a) teacher quality, (b) state and national policies, (c) building and classroom structural features, (d) teacher personal characteristics, (e) professional development, (f) departmental chair support, and (g) collegiality among teachers. The following sections provide descriptions of these influences.

Teacher Quality and Change in Teachers' Instructional Practices

Teacher quality includes pedagogical knowledge, content knowledge, teacher certification, and teacher experience (Darling-Hammond, 2000; Stronge, Tucker, & Hindman, 2004). Highly qualified teachers are fully certified in the subject they teach, possess a bachelor's degree, and have proven teaching and subject matter knowledge (U.S. Department of Education, n.d.c). These were found to influence teachers' instructional practices (Darling-Hammond, 2000; Ferguson & Womack, 1993; Stronge et al.; Superka, 1977)

Pedagogical knowledge and change in teachers' instructional practices.

Education courses that focus on pedagogical knowledge positively affect teacher performance (Ferguson & Womack, 1993). Ferguson and Womack studied

successful completion of seven education courses, grade point average (GPA) in major, National Teacher Exam (NTE) scores, and student-teaching performance. Student teaching performance was assessed through surveys completed by cooperating teachers, content supervisors, school of education supervisors, and self-reports by the student teachers. Successful completion of education courses, which accounted for 16.5% of variance in teacher performance, was a stronger predictor of teacher performance than GPA in major and NTE scores, which together accounted for less than 4% of the variance in teacher performance (Ferguson & Womack).

Teachers with student-centered pedagogical beliefs implement more variety in their instructional practices compared to teachers with teacher-directed pedagogical beliefs (Martin & Shulman, 2006). In a study of integrating technology into the classroom, teachers using student-centered pedagogy implemented more technology, open-ended questioning, and collaborative groups compared to those with teacher-directed beliefs. Furthermore, they implemented more student research during class and research where students were able to choose their own topic (Martin & Shulman).

Content knowledge and change in teachers' instructional practices. Content knowledge, or teachers' knowledge of the subject they teach, influences teacher instruction (Ferguson & Womack, 1993; Superka, 1977). The National Council for Accreditation of Teacher Education (NCATE) includes content knowledge as one of six standards for preparing individuals to become teachers (2006). NCATE states that individuals wanting to be teachers must know the subject matter that they are

going to teach. Virginia's Licensure Regulations for School Personnel require individuals to have a certain number of college credit hours to teach certain classes; for example, candidates must have a major in English or a minimum of 36 hours of course work in English to be licensed to teach English at the high school level (Virginia Department of Education, 2007).

Content knowledge, measured by GPA in major and NTE scores, positively affects the performance of secondary student teachers (Ferguson & Womack, 1993). Ferguson and Womack found that less than 4% of the variance in teacher performance is explained by GPA in major (less than 1%) and NTE scores (less than 3%). Education coursework was a stronger predictor of teacher performance, explaining 16.5% of the variance (Ferguson & Womack).

Teachers with high levels of content preparation showed a 20% increase in the use of inquiry-based science lessons² compared to those with less content preparation (Supovitz & Turner, 2000). Holding an advanced degree and involvement in college courses influenced the instructional innovativeness of social studies teachers (Superka, 1977). Teachers who had taken nine or more college credit hours in teaching social studies, within a three-year period from the time of the study, used more innovative teaching practices than those with fewer than nine credit hours (Superka). Teachers holding a master's degree and beyond were more

² Inquiry-based instruction is a student-centered approach that engages students in investigations and hands-on activities (Supovitz & Turner, 2000), and is considered an effective way to teach science (Luft, 2001).

likely to be aware of social studies materials and use student-centered instructional methods than teachers with just a bachelor's degree (Superka).

Teacher experience and change in teachers' instructional practices.

Experience is another factor that affects teacher effectiveness in the classroom (Stronge et al., 2004). Tenure, which is an indicator of experience, is related to teacher instructional practices (Superka, 1977). Superka found that tenured teachers were more likely than non-tenured teachers to be aware of social studies project materials and use innovative instructional practices.

As is true in any endeavor, experience can be an effective teacher. Unexamined experience, however, can have little effect on knowledge, practice, or performance. Knowledge gained through reflective practice grows with each year on the job and helps develop expertise in all aspects of teaching (Holly, 1993; Matthews & Jessel, 1998). Teachers engaging in reflexive examination were influenced to study in more detail the performance of their students, and show more progress in improving teaching practices (Matthews & Jessel).

The findings in this section support what I experienced as a teacher. With time I was exposed to more instructional strategies through professional development and discussions with colleagues. Experienced teachers are able to alter their teaching strategies to meet the learning styles of their students and are more likely to take risks and try new instructional strategies than novice teachers.

Teacher licensure and change in teachers' instructional practices. Teacher licensure is based on the qualifications and training held by teachers (Darling-

Hammond, 2000; U.S. Department of Education, 2004).³ States differ in the qualifications individuals must have to be fully licensed, but most require successful completion of a teacher education program and a major or minor in the subject taught (Darling-Hammond; U.S. Department of Education, 2004). To be fully licensed to teach in Virginia, individuals must have a baccalaureate degree, a major or minor in subjects taught, completed a teacher education program, and passing scores on a professional teacher's assessment (Virginia Department of Education, 2007). Alternative licensure may be attained in Virginia through career switcher programs that require a baccalaureate degree, an endorsement in a teaching area, five years of full-time work experience, and passing scores on professional teacher's assessments (Virginia Department of Education, 2007).

Certified physical education teachers are more likely to implement recommended instructional strategies compared to those without a certification in physical education (Davis, Burgeson, Brener, McManus, & Wechsler, 2005). The certified teachers used more modern teaching strategies learned through the certification process (Davis et al.). Alternatively certified teachers implemented more student-centered instructional practices that were stressed in methods courses compared to traditional types of instruction that were not emphasized during the certification process (Bisland, Malow-Iroff, & O'Conner, 2006).

³ The term licensure is used by many states, but it is referred to as certification in some of the literature. In this document licensure is the accepted term except where certification is used in the literature.

Most research on teacher licensure links teacher licensure to student achievement. Teachers with full certification, regardless of type, have more impact on student performance than those without certification (Darling-Hammond, 2000; Goldhaber & Brewer, 2000; Stronge et al., 2004). The percentage of teachers with full certification had a significant, positive relationship (r between .61 and .80) with student achievement for the mathematics and reading sections of the 1990, 1992, 1994, and 1996 NAEP tests (Darling-Hammond). The percentage of new teachers without certification had a significant, negative relationship (r between -.40 and -.63) with student scores on the NAEP tests (Darling-Hammond). In a study of teacher certification and student achievement, twelfth grade students with teachers certified through a traditional program scored on average 1.3 points higher on a standardized math test compared to students whose teachers held alternative certification or were certified outside of mathematics (Goldhaber & Brewer).

Professional Development and Change in Teachers' Instructional Practices

Some researchers have studied the characteristics of professional development, but few have examined how professional development influences the classroom instruction of teachers (Garet, Porter, Desimone, Birman, & Yoon, 2001; Mouza, 2006; Smylie, 1996). Professional development is seen as a key to improving teacher learning and student achievement (Mouza; Smylie, 1996; Supovitz & Turner, 2000). Effective professional development focuses on content knowledge, engages teachers in active learning, and is sustained over time (Garet et al.; Mouza; Supovitz & Turner).

Professional development has been found to influence change in the instructional practices of teachers and improve their teaching knowledge and skills (Garet et al., 2001, Mouza, 2006). Teachers improved their technology skills in the classroom by participating in professional development (Mouza). Teachers participating in multiple hours of professional development activities on inquiry-based science lessons implemented more of these instructional practices compared to those who received fewer hours (Luft, 2001; Supovitz & Turner, 2000).

State and National Initiatives and Change in Teachers' Instructional Practices

State and national initiatives influence teachers' classroom instruction. These initiatives changed my own teaching style. When new and stricter standards were implemented by Virginia in 1995, my lesson plans concentrated on teaching content contained in Virginia's Standards of Learning. At first, I felt that it restricted my creativity in the classroom because I concentrated on getting all the content covered and preparing students to take end-of-course state tests. As I became more comfortable with the standards, I was able to improve my instruction by finding various, more creative ways to present information.

State reforms influence teachers to use instruction that reaches various levels of learners and impacts pacing of instruction (Deal & Celotti, 1980; Duke & Tucker, 2003). Education reforms in California called the California Early Childhood Education program (ECE) influenced teachers to adjust pacing of instruction to meet the needs of all students (Deal & Celotti). Principals in 16 schools in Virginia stated that due to the Standards of Learning, teachers were making more attempts to use different instructional techniques to reach various levels of learners (Duke & Tucker).

Teachers reported pacing of instruction as a major concern and noted that they had to balance between not going too fast with instruction for slower learners and speeding up instruction to cover all content before testing.

Teachers in Duke and Tucker's (2003) study stated that they were spending more class time on re-teaching and reviewing content. Other changes included teachers developing lesson plans based solely on guidelines handed down by the state and changing the way they assessed students by formatting their tests to match Standards of Learning tests students would have to take toward the end of the school year. Principals said that one of their concerns associated with the Standards of Learning was that they believed teachers focused more on memorization and recalling of facts than on concentrating on higher-order thinking skills and activities that enriched the curriculum (Duke & Tucker).

Some teachers have expressed the view that standards-based reforms influence their classroom practices (Clarke et al., 2003). Approximately three-quarters of the teachers interviewed by Clarke et al. had neutral to positive perceptions of state standards. Teachers who expressed positive perceptions mentioned that state standards encouraged a common curriculum and improved instruction on critical thinking and writing skills (Clarke et al.). Some teachers were found to hold negative perceptions of the impact of standards-based reforms on classroom practices (Clarke et al.; Margheim, 2001). They thought that state standards restrict their creativity, prevent enrichment of the curriculum, and limit critical thinking (Clarke et al.; Margheim).

Testing associated with state standards influence the instructional and assessment strategies used by teachers (Clarke et al., 2003; Margheim, 2001). State tests increased teachers' use of classroom discussions and caused them to concentrate more on explaining material (Clarke et al.). Some teachers feel that state tests restrict instructional creativity, cause teachers to concentrate on preparing students to take assessments, and cause them to cover a wide range of content instead of covering content in depth (Clarke et al.; Margheim).

The state tests accompanying the accountability movement are a form of disciplinary power. Whenever people believe or know that they are being observed, their behavior is conditioned by that belief (Foucault, 1977). They conform to expected modes of behavior (Foucault). Accountability in education has this effect on teachers, principals, supervisors, superintendents, and boards of education. All learn the expected behavior over time and change their behavior to conform to those expectations (Hatch & Cunliffe, 2006). Thus, disciplinary power results in self-surveillance (Foucault), a potent form of influence.

Building and Classroom Structural Features and Change in Teachers' Instructional Practices

The physical features of schools influence teachers' use of individualized instruction and team teaching (Deal & Celotti, 1980). Open classrooms, where walls were removed as barriers between classrooms, influenced teachers to focus on the individual learning needs of students (Deal & Celotti). The researchers thought that individualized instruction required more creativity by teachers and was a demanding

approach to teaching. Open classrooms had a positive effect on teachers engaging in teaming activities with each other (Deal & Celotti).

The physical features of classrooms were barriers for middle school science teachers trying to implement instruction advocated in the National Science Education Standards (Johnson, 2006). These standards advocate the use of inquiry-based instruction where students are self-directed and use investigation to learn (Johnson). Teachers in Johnson's study felt they lacked the necessary resources to implement inquiry-based instruction including space limitations and other physical features such as sinks.

Shared office space and classrooms, a structural layout encouraged by the principal, promoted collaboration among teachers in a Maine high school (Shank, 2005). According to Shank, this influenced teachers to share materials, lesson plans, and instructional practices. Shared space provided training and support to new teachers through discussions and sharing of ideas with veteran teachers. New instructional strategies, such as differentiating questions for students, were shared by teachers (Shank).

Deal and Celotti's (1980), Shank's (2005), and Johnson's (2006) studies were the only ones found to support a connection between structural features of schools and change in teachers' classroom instruction. A search for research on this topic was conducted through on-line dissertations and educational journals. Most research concentrated on the connections between school structural features and student achievement (Earthman, 1998; Turnquist, 1991).

I included this variable because of my own teaching experiences. In my first two years of teaching, I traveled from classroom to classroom with all my materials on a cart. This was due to overcrowding, and I was amazed at how different each classroom was structurally. One classroom I taught in was conducive to group work because of its size, but the other classrooms were much smaller, making group work difficult. I spent the last three years of teaching in a mobile unit which was difficult because I felt isolated from my peers. However, the room was large, and I was able to do more creative lessons involving group work. In one lesson, I was able to do a scavenger hunt activity in which students searched through materials in the room to find information on United States history. This could not have been done in most classrooms within the school building because they were too small.

Teacher Personal Characteristics and Change in Teachers' Instructional Practices

Some teachers possess certain personal characteristics that make them effective performers in the classroom (Stronge et al., 2004). One of these is verbal ability. Teachers with high verbal ability communicate with students and help them learn the material being taught, pick up better on student cues, and alter their teaching style so as to get the information across to students more effectively (Stronge et al.). Pre-service teachers with high intrapersonal intelligence or self-awareness have higher levels of personal teaching efficacy compared to those with low intrapersonal intelligence (Yeh, 2006). Teachers with high personal teaching efficacy have confidence in their ability to reach students and enhance student learning through their teaching skills (Yeh).

Confidence is another personal characteristic that influences what teachers do in the classroom (Appleton & Kindt, 1999). Appleton and Kindt discovered in their study of nine new teachers that only a few reported feeling confident about their teaching abilities. Those who said they did possess confidence were more likely to use hands-on learning and group activities than those teachers who lacked confidence in their ability to teach science (Appleton & Kindt).

Creativity by pre-service teachers is related to classroom performance ratings (Daugherty, Logan, Turner, & Compton, 2003). Creative teachers produce a high number of ideas in a period of time, can try new teaching styles, and have strong problem-solving skills (Daugherty et al.). Strong problem-solving skills were found to be a significant predictor of classroom performance ratings by pre-service teachers (Daugherty et al.). Pre-service teachers with strong critical thinking skills had higher levels of personal teaching efficacy than those with low levels of critical thinking skills (Yeh, 2006).

The personal beliefs of teachers influence the type of instruction they deliver (Krajcik, Blumenfeld, Marx, & Soloway, 1994; Prawat, 1992; Wilkins, 2002). Teachers have their own beliefs about how students should learn and how instruction should be delivered (van Driel, Beijaard, & Verlopp, 2001). These beliefs are formed by experiences as a student and teacher (Lumpe, Haney, & Czerniak, 2000; Wilkins). Teachers' beliefs about mathematics instruction positively influenced their willingness to incorporate more instructional practices advocated by the National Council of Teachers of Mathematics (NCTM) (Wilkins).

The beliefs held by teachers can be a barrier to implementing new instructional practices (Anderson, 2002). Project-based science lessons require students to be self-directed and investigate the answers to questions posed by the teacher (Krajcik et al., 1994). This is a dilemma for traditional teachers who believe they are responsible for delivering knowledge to students (Prawat, 1992). Strong content knowledge negatively influenced teachers' beliefs in the effectiveness of new instructional practices advocated by the NCTM (Wilkins, 2002). These teachers used more traditional instructional practices that relied on the delivery of content (Wilkins). They believed this was a more effective way of teaching mathematics than the instructional practices promoted by NCTM (Wilkins).

Teachers' beliefs about instruction do not always match what they practice in the classroom (van Driel et al., 2001; Wilkins, 2002). Professional development may provide teachers with new ideas and knowledge, but it often fails in changing teacher beliefs about instruction (van Driel et al.). Teachers believed that the instructional practices advocated by the NCTM were important in helping students learn, but they did not implement these practices consistently (Wilkins). The beliefs held by teachers are difficult to change and require professional development that utilizes teacher involvement and occurs over a long period of time (van Driel et al.).

Collegiality among Teachers and Change in Teachers' Instructional Practices

Colleagues influence what teachers do in the classroom. This influence occurs through informal discussions in the hallway and the teachers' lounge. It occurs in more formal settings as well, particularly when sitting down together during

planning periods, when the principal sends teachers to observe other teachers, and when colleagues are given common planning periods.

Colleagues are a source of instructional strategies for teachers (Westberg & Archambault, 1997). According to Westberg and Archambault, teachers reported that they learned new teaching strategies to reach gifted students from colleagues. Peer relationships affected the implementation of a new approach to science instruction called the Integrated Activity Learning Sequence (IALS) (Sutman, Bruce, May, McConaghy, & Nolt, 1997). A majority of teachers in this study expressed a positive attitude toward the IALS program. Many of these teachers said that their positive attitude resulted from support they received from their colleagues who had the same reservations they did concerning IALS. Teachers in this study used an innovative science instructional program with success and found that collegial support was a major influence on their willingness to try this new approach.

A similar conclusion regarding the relationship between collegial support and teaching practices was reached by Appleton and Kindt (1999) and Wahlstrom and Louis (2008). Appleton and Kindt found that support from colleagues was an important component in teachers' ability to teach science. Teachers felt that support from their colleagues, specifically veteran teachers, gave them confidence to be risk takers in the classroom and try various teaching strategies (Appleton & Kindt). The new teachers used planning periods to discuss teaching techniques with their colleagues and were able to use their colleagues' advice to find new ideas for teaching (Appleton & Kindt). Discussing instructional strategies with colleagues was found to be a strong predictor of teachers making real world connections and using

critical thinking skills (Wahlstrom & Louis). Peer observation was a strong predictor of teachers using more cooperative learning (Wahlstrom & Louis)

Departmental Chair Support and Change in Teachers' Instructional Practices

Departmental chairs support teachers, and in some cases they are active instructional leaders. Departmental chairs have a positive influence on teachers implementing higher-order thinking skills (King, 1991). In three schools that King described as successfully using higher-order thinking skills, departmental chairs formed and directed a common goal that higher-order thinking skills would be emphasized in class. This emphasis by the departmental chairs was instrumental in moving teachers towards using lessons that required students to problem solve as opposed to just delivering the information to them (King). In four schools that were not as successful in implementing higher-order thinking skills, King found that departmental chairs provided little assistance and direction to teachers.

In one of the schools described as successful, King (1991) found that the departmental chair helped organize school visits, workshops, and departmental planning sessions to learn more about implementing higher-order thinking skills. King described another school in which the departmental chair required that all lessons include a question that would force students to defend a position on a topic in a classroom discussion. One departmental chair implemented an innovative approach to teaching thinking skills through a program called "Integrative Mind Instructional Model." In this approach students created and discussed metaphors and analogies to deal with a problem presented by the teacher (King). Departmental chairs helped organize and sometimes led professional development activities that

focused on higher-order thinking skills (King). Another departmental chair attended a national workshop with a colleague and disseminated this information to departmental members through group planning sessions (King).

Departmental chairs in successful schools worked with teachers to revise curricula to include higher-order thinking skills and provided resources to support these efforts (King, 1991). The departmental chairs took on as much instructional responsibility as the principals, frequently observed teachers, taught demonstration lessons on how to incorporate higher-order thinking skills, and provided feedback to teachers on how they could implement higher-order thinking skills (King). All of these are examples of how departmental chairs help teachers implement higher order thinking skills.

Summary of Other Influences on Change in Teachers' Instructional Practices

The purpose of including these variables is to form an understanding that principals are not the only influence on teacher classroom instruction. As the researchers above suggest, there are many other influences on teachers and what they do in the classroom. The focus of this study is on how the instructional leadership of principals affects teacher classroom instruction, but other influences are expected to surface.

Chapter 1 Summary

The context of the study, the purpose of the study, the research question, and a theory of influences on change in teachers' instructional practices were presented in Chapter 1. The theory is an explanation for why teachers make changes in their instructional practices. The theory was supported with previous research findings,

commentary literature, and the experience of the author. Principal and other influences were included in the theory; however, the focus of this study is on how principals influence the instructional practices of teachers.

Chapter 2 has a description of the methodology, including procedures for selection of participants, data collection, data management, and data analysis. The results are in Chapter 3. Chapter 4 has a discussion of the results, implications for practice, and recommendations for future research.

CHAPTER 2

METHODOLOGY

The methodology has two parts. The first part is a qualitative study in which interviews were conducted with principals and teachers. Information gathered from these interviews was used to identify variables and develop questions for the second part of the study: a quantitative study in which a questionnaire was sent to a national sample of teachers.

Part I: The Qualitative Study

The purpose of the qualitative study was to collect data that was used to develop a questionnaire for the quantitative study. The plan for the study is presented, including a description of the participants, the development and administration of the interview protocols, and the analysis and interpretation of the data (see Appendix A for the IRB approval letter).

Selection of Participants

The selection of participants was a time-consuming and frustrating experience. The initial plan produced only two principals and two teachers who were willing to participate. As a result, new plans had to be formed to acquire participants. The initial and revised plans are explained here.

The Initial Plan

Criteria for selection of participants were location in one of the time zones in the United States (Eastern, Central, Mountain, and Pacific) and location within a region of the time zones (urban, suburban, and rural). A pool of 36 schools was purposefully selected, 9 from each time zone: (a) 3 schools from a rural area

(population of less than 2,500) (U.S. Census Bureau, n.d.b), (b) 3 from a suburban area (proximity to a major city), and (c) 3 from an urban area (large city with a population of at least 500,000). Three schools from each of the southern, central, and northern sections of each time zone were selected (see Table 1). A sample of 12 principals and 12 teachers from this pool of 36 schools was targeted by the researcher.

Internet search engines were used to locate school districts in urban areas (e.g., searching for Atlanta, Georgia, public schools). Schools were randomly selected from lists on school district websites. Suburban areas were identified through Internet maps of major U.S. cities. Rural areas were found by using population estimates of all areas in the United States provided by the U.S. Census Bureau website (U.S. Census Bureau, n.d.a). Schools in these areas were located through Internet search engines, and school websites were then used for selection. Principals chosen for possible participation were from school websites that provided email addresses. If a website didn't have an email address, another school was randomly selected.

Thirty six principals from these schools were identified for possible participation by using school websites and contacted through email (see Table 2). This email contained a brief description of the study and asked for their participation in a telephone interview. An interview time was scheduled with each principal who agreed to participate.

Principals who were interviewed were asked to nominate a teacher who had made changes in instructional practices. The principal was asked to provide the

Table 1
Location of Schools for Initial Pool of Potential Participants for the Qualitative Study

Time Zone	Section within time zone								
	<u>Southern section</u>			<u>Central section</u>			<u>Northern section</u>		
	Rural	Suburban	Urban	Rural	Suburban	Urban	Rural	Suburban	Urban
Eastern	Douglas, GA	Rock Hill, SC	Miami, FL	Elliston, VA	Silver Spring, MD	Washington DC	Arcanum Village, OH	Phoenixville, PA	Philadelphia, PA
Central	Ashville, AL	Naperville, IL	Dallas, TX	Ainsworth, NE	Bartlett, TN	Oklahoma City, OK	Chamberlain, SD Thompson Falls, MO	New Berlin, WI	Chicago, IL
Mountain	Tucumcari, NM	Rio Rancho, NM	Phoenix, AZ	Gunnison, UT	Centennial, CO	Denver, CO	Afton, WY Kadoka, SD		
Pacific	Rolling Hills, CA	Santa Monica, CA	San Diego, CA	Sutter Creek, CA	San Mateo, CA	Las Vegas, NV	Estacada, OR	Beaverton, OR	Seattle, WA

Note: No suburban or urban schools were located in the northern section of the Mountain Time Zone. No areas fit the criteria for urban or suburban locations.

Table 2

Description of Initial Sample of Potential Participants for the Qualitative Study

Time zone	<u>Rural</u>		<u>Suburban</u>		<u>Urban</u>	
	Principal	Teacher	Principal	Teacher	Principal	Teacher
Eastern	1	1	1	1	1	1
Central	1	1	1	1	1	1
Mountain	3	3				
Pacific	1	1	1	1	1	1

Note. One teacher was identified by each principal.

email address of this teacher. Teachers nominated by the principals were asked to participate in a telephone interview through an email which contained a brief description of the study. There was one exception to this process. One of the teachers was a personal contact and he set up an interview with his principal. Two principals replied to the email and agreed to participate. The researcher called the principals who did not reply. No one agreed to participate as a result of the phone calls.

Revised Plan

Two principals and two teachers from the initial pool participated. The researcher abandoned the criteria of time zones and regional locations. The pool of possible participants was expanded through random searches of school websites, the NASSP website, staff directories found on state departments of education websites, and personal contacts.

The researcher searched for school websites through Internet search engines. Efforts were made to locate schools from across the country and emails were sent to principals for possible participation. Thirty-eight principals were contacted and no one agreed to participate.

The NASSP website provides information on past and present recipients of their national principal of the year award and state principals of the year awards. School websites of these principals were accessed for contact information. Thirty seven principals were contacted through email but none agreed to participate.

One hundred and forty three principals were contacted through using staff directories provided by state departments of education. The researcher chose states

based on location. Efforts were made to locate principals from Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming, and states not included in earlier searches for principals. Three principals and three teachers agreed to participate.

Personal contacts provided the largest pool of participants. Four teachers and five principals agreed to participate. The total pool of participants was nine principals and nine teachers (see Table 3). Due to the difficulty in getting positive responses, the number of participants was smaller than anticipated.

Data Collection

The selected principals and teachers were interviewed using two protocols developed by the researcher. Details on the development, testing, and administration of the protocols, one for teachers and one for principals, follow.

Development and Administration of the Interview Protocols

The interview protocols for the principals and teachers were open-ended and semi-structured as described by Merriam (1998). Questions were focused on collecting data to answer the question: What are the influences on change in teachers' instructional practices? The interviewer redirected the questioning depending on the responses of the interviewee. Interviewees were provided freedom to talk (see Appendix B for a comparison of the protocols).

The interview protocol for principals. The interview protocol was developed from the theory of influences on change in teachers' instructional practices (see Chapter 1). This theory has five leadership behaviors and seven other influences on teachers' instructional practices. The leadership behaviors are: (a) communicating

Table 3
Location of Participants for the Qualitative Study

Participants	Location
P8, T6	Connecticut
P4	Florida
P7, T4	Kentucky
P2, T1	Nebraska
P6, T5	North Carolina
P9, T7	Ohio
P1, T3	Pennsylvania
P3, T9	South Carolina
T2	Virginia
P5, T8	Washington

Note: P1 = Principal 1, T1 = Teacher

goals, (b) supervising instruction, (c) promoting professional development, (d) providing resources, and (f) providing incentives. The other influences are: (a) collegial interactions, (b) departmental chair support, (c) state and national policies, (d) building and classroom structural features, (e) personal characteristics, (f) teacher quality characteristics, and (g) professional development. The protocol had three categories of questions: (a) general questions on change in teachers' instructional practices and influences on these changes, (b) potential probes, and (c) demographic and background questions.

Testing the interview protocol for principals. The interview protocol for principals (see Appendix C for the initial interview protocol) was tested on two principals (see Appendix D for the IRB approval letter). Data from the interview with the first principal were analyzed and revisions were made to the protocol. The protocol was then tested on the second principal.

The researcher read through the data and felt that the protocol collected appropriate information. Questions that generated information on changes teachers made in their instructional practices and influences on these changes were kept. Questions that did not produce this information were deleted (see Table 4).

One additional step was taken to revise the instrument. Immediately following the interviews, the two principals were sent an email thanking them for participating. This email contained an instrument (see Appendix E) asking them to analyze questions on the interview protocol and the interview process. The principals were asked to email this back when completed. Questions on the protocol were deleted,

Table 4

Principal Interview Protocol Revisions

Questions	Initial principal interview protocol	Revised principal interview protocol
1	<p>Think about this past year or two, what changes have you observed in teachers' instructional practices?</p> <ul style="list-style-type: none"> For principals with more than two years experience, ask, What changes have you observed in teachers' instructional practices this year? Two years ago? Three years ago? 	<p>Think about this past year or two, what changes have teachers in your school made in their teaching?</p> <p>Deleted</p>
2	<p>Let's look at the change made by Teacher [A]. [B]. [etc.]. Tell me why you think that Teacher A made that change. Do the same for all examples provided by the interviewee.</p>	<p>No change</p>
3	<p>Were other people involved in helping Teacher A with this change? If so, who were these people (by position only)? Please describe their involvement as you understand it.</p>	<p>No change</p>
4	<p>If the principal is mentioned as a person who was involved in the change, follow up with: Tell me about your involvement with the change.</p>	<p>Deleted</p>

(table continues)

Table 4 (continued)

Questions	Initial principal interview protocol	Revised principal interview protocol
5	Can you identify anything else that may have affected how teachers changed their instructional practices this year?	No change
6	Is there anything else you would like to say about how teachers have changed their instructional practices this year?	Deleted
7	Think about the past few weeks. What kind of interactions have you had with teachers in your school?	No change
7a	Tell me about your interaction with the teacher about [A]. [B]. [etc.]	No change
7b	If no instructional interactions are mentioned, I will ask: When have you talked about instruction with teachers in your school?	No change
7c	If the principal answers yes to b, then ask the principal to tell about each interaction.	If the principal provides information on conversations regarding instruction in b, then ask the principal to tell about each interaction.

(table continues)

Table 4 (continued)

Questions	Initial principal interview protocol	Revised principal interview protocol
8	Describe a typical school day for you. Pick a day recently and tell me what you did?	No change
8a	If the principal mentions anything regarding visibility in the school, ask: What are you trying to accomplish by being visible in the school? [Probes: How do you think your visibility affects teachers? Learning? The school in general?] Do you interact with the teacher during formal and informal classroom visits? Tell me about these interactions. If not, do you find the teacher later to talk about the visit? If yes: What do you talk about?	No change
9	What are your school's goals?	Tell me about goals that are unique to your school?
9a	How did these get established?	No change
9b	How do teachers get to know these goals?	Deleted
9c	How do you think they affect learning? How do you think these goals affect what teachers do in the classroom? The school in general?	How do you think they affect what teachers do in the classroom?

(table continues)

Table 4 (continued)

Questions	Initial principal interview protocol	Revised principal interview protocol
10	What types of support do teachers in your school receive?	No change
10a	Where does [Support A] [Support B] [etc.] come from?	No change
10b	How does this affect the school? Learning?	Deleted
11	Tell me about professional development in your school?	No change
11a	Think about this past year, what were some of the professional development opportunities available to teachers?	No change
11b	If the principal mentions specific activities, ask: Where did [PD A] [PD B] [etc.] come from? Who provided these opportunities?	No change

(table continues)

Table 4 (continued)

Questions	Initial principal interview protocol	Revised principal interview protocol
11c	How have teachers used ideas from these activities in their classrooms? What are some examples of how teachers implemented ideas from these opportunities?	No change
12a	Who provided [Resource A] [Resource B] [etc.]	No change
12b	How have teachers used [Resource A] [Resource B] [etc.]?	No change
12c	What can you point to that would indicate that [Resource A] [Resource B] [etc.] affected what teachers did in their classrooms? What students learned?	No change
13	Describe what you think motivates teachers in your school?	No change
13a	If it is not clear where the motivation comes from, ask: Where does this motivation come from?	No change
13b	How does this motivation affect learning?	Deleted
13c	How does it affect teaching?	Deleted

(table continues)

Table 4 (continued)

Questions	Initial principal interview protocol	Revised principal interview protocol
14	Tell me about the collegial relationships teachers in your school have with one another.	No change
14a	What do you think they talk about?	No change
14b	Do you think they share instructional approaches with each other?	No change
14c	If yes, tell me about what approaches they have shared.	No change
14d	With whom did they share [Approach A] [Approach B] [etc.]?	No change
14e	Do you know if they used [Approach A] etc.?	No change
14f	For each approach, ask: With what results?	No change
15	Describe the leadership of department chairs in your school?	No change
15a	What do they talk about with teachers in their department?	No change

(table continues)

Table 4 (continued)

Questions	Initial principal interview protocol	Revised principal interview protocol
15b	<p>If instruction is not mentioned, ask: Do you think they ever talk about teaching methods?</p> <ul style="list-style-type: none"> If principal mentions instructional methods, go to c. 	No change
15c	If yes, tell me about [Method A] [Method B] [etc.].	No change
15d	Did the teacher use [Method A] [Method B] [etc.]?	No change
15e	Were these methods successful?	No change
16	Talk about the No Child Left Behind Act. State standards.	No change
16a	How do you think this affects teachers in your school? Learning? The school in general?	How do you think this affects the way teachers in your school teach?
16b	How about the way teachers teach?	Deleted
17	How are classrooms in your school structured?	No change

(table continues)

Table 4 (continued)

Questions	Initial principal interview protocol	Revised principal interview protocol
17a	Do you think it affects learning? If yes, how?	No change
17b	How about the way teachers teach?	No change
18	Which one of the following best describes teachers in your school?	No change
18a	They tend to use the same methods of instruction each year.	They tend to use the same instructional practices each year.
18b	They tend to incorporate one or two new methods each year.	They tend to incorporate one or two new instructional practices each year.
18c	They tend to change how they teach a great deal each year.	No change
18d	They never teach the same way each year.	No change
19	How many years were you a teacher? What did you teach?	No change

(table continues)

Table 4 (continued)

Questions	Initial principal interview protocol	Revised principal interview protocol
20	What was your major for your bachelor's degree?	No change
21	Did you go through the traditional teacher education preparation program provided by a college or university? How about leadership?	No change
22	If the answer to #21 is no, ask: How did you get your teaching license? Your administrative license?	No change
23	How many years have you been an administrator? Tell me about each administrative position you have held and for how long?	No change
24	Do you have a master's or doctoral degree and if so in what area?	No change
25	How many years have you been at this school?	No change

revised, or left the same (see Table 4). The revised and final protocol for principals is in Appendix F.

Administration of the interview protocol for principals. Principals who agreed to participate through email (see Appendix G) were interviewed on one occasion over the telephone. Each participant was allowed to pick the time of day for this to occur. Interview sessions lasted on average 13 minutes with a range of 12 to 19 minutes. All interview sessions were audio-taped and transcribed verbatim. Interview sessions were recorded through two tape recorders. One of these recorders was used as a back-up in case of a problem with the other tape recorder. Hand-written notes were taken in each interview. All data were transcribed into Word documents.

The interview protocol for teachers. The interview protocol was based on the theory of influences on change in teachers' instructional practices. There are two primary categories of influence, and both are the same as those in the principal's protocol: principal influences and other influences. The principal influences are: (a) communicating goals, (b) supervising instruction, (c) promoting professional development, (d) providing resources, and (e) providing incentives. The other influences are: (a) collegial interactions, (b) departmental chair support, (c) state and national policies, (d) building and classroom structural features, (e) personal characteristics, (f) teacher quality characteristics, and (g) professional development. As with the principal's protocol, the teacher's protocol had three categories of questions: (a) general questions on change in teachers' instructional practices and influences on these changes, (b) probes related to the major influences identified in the theory, and (c) demographic and background questions.

Teachers were not asked how the principal influences the strategies they used in the classroom. Asking teachers how principals influenced them would bias their responses. By asking more general questions that explored what influences the instructional strategies they used, teachers were given the opportunity to report on a range of influences on their instructional practices.

Testing of the teacher interview protocol for teachers. The content of the interview protocol was tested with three teachers (see Appendix H for the initial teacher interview protocol). Data from the interview with the first teacher were analyzed and revisions were made. The protocol was then tested with two more teachers.

The researcher read through the data and felt that the protocol collected appropriate information. Questions that generated information on changes teachers made in their instructional practices and influences on these changes were kept. Questions that did not produce this information were deleted (see Table 5).

One additional step was taken to revise the instrument. Immediately following the interviews, the three teachers were sent an email thanking them for participating. This email contained an instrument (see Appendix I) asking them to analyze questions on the interview protocol and the interview process. The teachers were asked to email this back when completed. Questions on the protocol were deleted, revised, or left the same (see Table 5). The final protocol for teachers is in Appendix J.

Administration of the interview protocol for teachers. Teachers who agreed to participate by email (see Appendix K) were interviewed on one occasion. Telephone

Table 5

Teacher Interview Protocol Revisions

Questions	Initial teacher interview protocol	Revised teacher interview protocol
1	<p>Compared to last year, what changes did you make in your teaching this year (identify and describe each change)?</p> <ul style="list-style-type: none"> For teachers with more than two years experience, ask: Compared to last year, what changes did you make in your teaching this year? Two years ago? Three years ago? 	<p>Think about this past year or two, what changes have you made in your teaching?</p> <ul style="list-style-type: none"> Deleted
2	<p>Let's look at the change you made in [A]. [B]. [etc.]. Tell me why you made that change (ask this for each change mentioned).</p>	<p>No change</p>
3	<p>Were other people involved in helping you with this change? If so, who were these people (by position only)? Please describe their involvement.</p>	<p>No change</p>
4	<p>Where did you learn about this technique or method?</p>	<p>Deleted</p>
5	<p>Can you identify anything else that may have affected the instructional practices you have used?</p>	<p>No change</p>

(table continues)

Table 5 (continued)

Questions	Initial teacher interview protocol	Revised teacher interview protocol
6	Is there anything else you would like to say about the changes you have made in the instructional practices you have used?	Deleted
7	Think about the past few weeks. What kind of interactions have you had with your principal?	No change
7a	Tell me about your interaction with the principal about [A]. [B]. [etc.]	No change
7b	If no instructional interactions are mentioned, I will ask: When have you talked about instruction with your principal?	If no instructional interactions are mentioned, I will ask: Have you talked about instruction with your principal?
7c	If teacher answers yes to b, then ask the teacher to tell about each interaction.	No change
8	How often do you see your principal during the school day? Where?	No change

(table continues)

Table 5 (continued)

Questions	Initial teacher interview protocol	Revised teacher interview protocol
8a	How do you think this affects the students? Learning? The school, in general?	No change
8b	If instruction is not mentioned in a, ask: How does this affect the way you teach?	No change
9	What are your school's goals?	What goals are unique to your school?
9a	How did these goals get established?	No change
9b	How do they affect what you do in the classroom?	No change
9c	If the principal is not mentioned, ask: What does your principal have to do with these goals?	Deleted
10	Tell me about the support you receive as a teacher.	No change
10a	If they respond by saying they do not feel supported, probe with: Does this affect what you do in the classroom?	No change

(table continues)

Table 5 (continued)

Questions	Initial teacher interview protocol	Revised teacher interview protocol
10b	If they respond with yes, ask: In what ways do you receive support? What effect does [Support A] [Support B] [etc.] have on your job? If it is not clear where this support is coming from, ask: Where does this support come from?	No change
11	Tell me about professional development for teachers in your school.	What professional development have you participated in the past year or two?
11a	Who decides what is offered through professional development?	No change
11b	Think about this past year, what were the topics that had an influence on you?	Deleted
11c	What did you use from [PD A] [PD B] [PD C] in your classroom?	No change
11d	Why did you use it?	No change
11e	Did you talk with your principal about using these ideas in your classroom?	Deleted
11f	What did the principal say or do?	Deleted

(table continues)

Table 5 (continued)

Questions	Initial teacher interview protocol	Revised teacher interview protocol
12	What resources have you been provided so far this school year? For each resource mentioned, probe with the following:	No change
12a	Where did this resource come from?	No change
12b	How did you use this resource?	No change
12c	If teacher does not mention how this resource dealt with the classroom, ask: How did this resource affect what you do in the classroom?	No change
13	What motivates you as a teacher?	No change
13a	How does [Motivation A] [Motivation B] [etc.] affect what you do in the classroom?	No change
13b	If it is not clear where the motivation is coming from, ask: Where does this motivation come from?	No change
14	How have you interacted with colleagues lately?	How have you interacted on a professional level with colleagues lately?

(table continues)

Table 5 (continued)

Questions	Initial teacher interview protocol	Revised teacher interview protocol
14a	What do you talk to your colleagues about?	Deleted
14b	Have you shared some of your instructional approaches with them?	No change
14c	If yes, tell me about what approaches you have shared.	No change
14d	With whom did you share [Approach A] [Approach B] [etc.]?	No change
14e	Do you know if they used [Approach A] etc.?	No change
14f	For each approach, ask: With what results?	No change
15	How have you interacted recently with your department chair?	No change
15a	What did you talk about?	No change

(table continues)

Table 5 (continued)

Questions	Initial teacher interview protocol	Revised teacher interview protocol
15b	If instruction is not mentioned, ask: When have you talked with your department head about teaching methods? *If teacher responds with a time, go to c.	No change
15c	If yes, tell me about [Method A] [Method B] [etc.].	No change
15d	Did you use [Method A] [Method B] [etc.]?	No change
15e	Were these methods successful?	No change
16	Talk about the No Child Left Behind Act. State standards.	No change
16a	How do you think this affects your job as a teacher? Learning? The school in general?	Deleted
16b	How about the way you teach?	How do you think this affects the way you teach?
17	How is your classroom structured?	No change

(table continues)

Table 5 (continued)

Questions	Initial teacher interview protocol	Revised teacher interview protocol
17a	Do you think it affects learning?	No change
17b	If yes, how? How about the way you teach?	No change
18	Which one of the following best describes you?	No change
18a	I tend to use the same methods of instruction each year.	I tend to use the same instructional practices each year.
18b	I tend to incorporate one or two new methods each year.	I tend to incorporate one or two new instructional practices each year.
18c	I tend to change how I teach a great deal each year.	No change
18d	I never teach the same way each year.	No change
19	How many years have you been teaching, including this year?	No change
20	What was your major for your bachelor's degree?	No change

(table continues)

Table 5 (continued)

Questions	Initial teacher interview protocol	Revised teacher interview protocol
21	Did you go through the traditional education preparation program provided by a college or university?	No change
22	If the answer to #21 is no, ask: How did you get your teaching license?	No change
23	Are you endorsed to teach each of the subjects you are assigned?	No change
24	What is your highest degree? What was your major?	No change
25	How many years have you been at this school?	No change

interviews were conducted and each participant was allowed to pick the time of day for the interview. Interview sessions lasted on average 13 minutes with a range of 11 to 17 minutes. All interview sessions were audio-taped and transcribed verbatim. Interview sessions were recorded through two tape recorders. One of these recorders was used as a back-up in case of a problem with the other tape recorder. Hand-written notes were taken in each interview. All data were transcribed into a Word document.

Management of the Data from the Teacher and Principal Interviews

The interview tapes were transcribed after each session, and the transcripts were coded as follows: Each line on each transcript was numbered. Principal interviews were coded with the letter P and a number for each principal (e.g., P1 =Principal 1) in the upper right hand corner of each sheet. Teacher interviews were coded with the letter T and a number for each teacher (e.g., T1 = Teacher 1) in the upper right hand corner of each sheet. Data were stored in the researcher's personal files and in password protected files on his computer. Access was limited to the researcher and his advisor.

Analysis of the Interview Data

Data were analyzed with the constant comparative method (Maykut & Morehouse, 1994). The constant comparative method is an inductive approach to data analysis. Data were analyzed after each interview (Merriam, 1998). I was searching for changes teachers made in their instructional practices and the influences on these changes. The specific analytical procedures follow:

- The transcripts were read and re-read to identify categories and units of meaning. Units of meaning were based on the words of participants and involved a single sentence or as much as a paragraph. Files were kept on the researcher's computer for each category and unit of meaning.
- Units of meaning were placed under appropriate categories.
- The units of meaning that I was looking for with teachers were the changes teachers made in their instructional practices and the influences on these changes. For principals, I compiled their responses and looked for what they felt influenced teachers to change their instructional practices. The source was noted for each unit of meaning by labeling each one by the person interviewed and the page number from the transcript (e.g., T1, p.1 = Teacher 1, page 1, P1, p.1 = Principal 1, page 1). I repeated this process after each interview.
- Units of meaning from all sources were constantly compared with one another, combined when they contained the same information, and shifted among categories until I was comfortable that the meaning of the data had been extracted. The transcripts and units were re-read because new information led to the formation of new units, elimination of units, or the combination of units.
- Raw data matrices (Miles & Huberman, 1994) were developed to categorize the data by teachers' years of experience, undergraduate major, certification, level of education, and other influences (see Appendix

L). Direct quotations collected from teachers and principals were placed in these raw data matrices.

- The findings were compared with the theory of influences on change in teachers' instructional practices.
- Conclusions were drawn from the findings. For teachers, conclusions were based on what influenced them to change their instructional practices. Conclusions for principals were based on what they thought influenced teachers to change their instructional practices. Both categories of influences and specific influences, regardless of source, were identified to provide information for the development of the questionnaire in Part II of the study.

Part II: The Quantitative Study

The quantitative study was based on the findings of the qualitative study. Data collected from the interviews were used to construct a questionnaire that was distributed to a national sample of high school teachers. The purpose of the national study was to find out how much change teachers experience in their instructional strategies and what influences that change.

Populations and Samples

A nationwide population of teachers was targeted for this part of the study. In early planning, the teacher data base maintained by Market Data Retrieval (MDR) was considered as a source of a national population. MDR provides education marketing services and information with a database of 4 million public school administrators and teachers (Market Data Retrieval, 2007). The expected response rate through MDR was 1% to 2%, and the costs were relatively high. Consequently, other avenues for acquiring a national population were explored, and the following procedure for identifying a population was created.

A broadly representative population of teachers across the United States was desired. Urban, suburban, and rural schools from each time zone (Eastern, Central, Mountain, and Pacific) and each part of the time zone (northern, central, and southern) were wanted. All school districts with websites were in the target population.

An accessible population of 96 school districts was identified as follows: Twenty four school divisions were selected from each time zone: (a) 12 districts from a rural area (population of less than 2,500) (U.S. Census Bureau, n.d.b), (b) 6 from a

suburban area (proximity to a major city), and (c) 6 from an urban area (large city with a population of at least 250,000). The number of rural districts was doubled because rural districts are generally smaller and have fewer high schools. Twice as many districts provided a larger number of high schools from which to select teachers for the population (see Table 6).

High school teachers within the school districts were the source of data for the study. Twelve hundred high school teachers were needed for the study. This number was based on recommendations provided by Krecjie and Morgan (1970) who recommended a sample of 384 for a population of 1,000,000 or more. The sample was tripled because of an anticipated response rate of 30 to 35% (Felton, 2006; Hartley, 2007). The oversampling would provide a sufficient number of responses for analytical purposes. The sample had 1,412 teachers, but 144 emails were returned because they were recognized as junk mail or no longer in service (see Table 7). This left a sample of 1,268. Twenty-four percent (304 out of 1268) of the sample returned useable responses. This was below the desired response, but the number was sufficient for data analysis.

Internet search engines were used to locate school districts in urban areas (e.g., searching for Atlanta, Georgia, public schools). Suburban areas were identified through Internet maps of major U.S. cities. Urban and suburban school districts included a large number of schools. Two school districts from the southern, central, and northern sections of each time zone were targeted. Eight schools from each district were selected for urban and suburban areas. Schools were randomly selected from lists on school district websites by using a random numbers

Table 6

Location of Participants for the Quantitative Study

Eastern Time Zone								
Districts								
Urban 6			Suburban 6			Rural 12		
Southern 4	Central 0 ¹	Northern 2	Southern 2	Central 3 ²	Northern 1	Southern 4	Central 4	Northern 4
Schools								
32	0	16	16	18 ³	5	5 ⁴	5	5
Teachers								
96	0	48	48	54	15	48	48	47

(table continues)

Table 6 (continued)

Central Time Zone								
Districts								
Urban 6			Suburban 6			Rural 12		
Southern 2	Central 3 ⁵	Northern 1	Southern 2	Central 2	Northern 2	Southern 4	Central 4	Northern 4
Schools								
9	18	8	13	7	5	5	5	4
Teachers								
27	54	24	39	21	15	48	48	47

(table continues)

Table 6 (continued)

Mountain Time Zone								
Districts								
Urban 6			Suburban 6			Rural 12		
Southern 3	Central 3	Northern 0 ⁶	Southern 3	Central 3	Northern 0 ⁶	Southern 4	Central 4	Northern 4
Schools								
24	17	0	8	22	0	5	6	4
Teachers								
72	48 ⁷	0	24	66	0	44	45	47

(table continues)

Table 6 (continued)

Pacific Time Zone								
Districts								
Urban 6			Suburban 6			Rural 12		
Southern 2	Central 2	Northern 2	Southern 2	Central 2	Northern 2	Southern 4	Central 4	Northern 4
Schools								
16	14	16	6	5	8	4	7	4
Teachers								
48	42	48	18	15	24	48	48	48

Note. Total school districts=96.

¹ No urban districts provided emails for teachers.

² Extra schools from the central part of the time zone were added to balance numbers from each section.

³ Twenty three urban and suburban districts across all time zones had fewer than eight schools.

⁴ Numbers for rural schools varied depending on the size of the school district. Sufficient schools were selected to achieve an accessible population of 48 teachers from rural schools in each sector of each time zone

⁵ One urban district provided emails for teachers. An extra district from central section was added to get six schools.

⁶ No areas in the northern section fit the criteria for urban or suburban. Extra districts were included in the south and central sections to get six schools.

⁷ Only one district had eight schools. One district had four schools and one had five schools for a total of seventeen schools.

Table 7
Summary of the Sample for the Quantitative Study by State

States	School districts	Schools	Teachers
Alabama	1	1	12
Arizona	6	25	86
Arkansas	1	1	12
California	11	39	136
Colorado	6	31	105
Delaware	1	1	12
Florida	4	25	84
Georgia	3	18	60
Idaho	1	1	11
Illinois	3	11	42
Iowa	1	1	12
Kansas	2	5	24
Kentucky	1	1	12
Louisiana	1	1	3
Maine	1	1	12
Maryland	2	16	48
Massachusetts	1	8	24
Minnesota	2	4	21
Mississippi	1	2	12
Missouri	1	2	6

(table continues)

Table 7 (continued)

States	School districts	Schools	Teachers
Montana	1	1	12
Nebraska	1	3	9
New Jersey	1	5	15
New Mexico	4	12	52
Nevada	5	15	72
North Carolina	2	9	36
North Dakota	1	1	12
Ohio	1	1	12
Oklahoma	2	9	36
Oregon	4	12	54
Pennsylvania	1	8	24
Rhode Island	1	1	12
South Carolina	1	1	12
South Dakota	1	1	12
Tennessee	1	8	24
Texas	4	22	88
Utah	4	15	53
Vermont	1	2	11
Virginia	2	3	18
Washington	4	16	66

(table continues)

Table 7 (continued)

States	School districts	Schools	Teachers
West Virginia	1	2	12
Wisconsin	1	1	12
Wyoming	2	2	24
Total	96	344	1412

generator at <http://www.random.org>. This same process was used to choose teachers from lists on school websites. Twenty three districts had less than eight schools (see Table 6). All schools were included from these divisions. The researcher selected three teachers for participation from each high school. This process resulted in a sample of 850 urban and suburban teachers.

School districts in rural areas were found by using population estimates of all areas in the United States provided by the U.S. Census Bureau website (U.S. Census Bureau, n.d.a). School districts in these areas were located through Internet search engines. Twelve teachers from each school district were targeted for participation. School districts in rural areas varied in their number of schools and teachers. Five school districts had schools with less than 12 teachers or did not provide emails for 12 teachers. All teachers were selected for participation in these schools. Thirty eight school districts had only one school, and 12 teachers were chosen from these schools for participation by using the random numbers generator. Three school districts had two schools, and two districts had three schools. In these districts an equal number of teachers was chosen from each school (e.g., six from each school in a district with two schools). This resulted in a sample of 562 rural teachers.

External Validity of the Study

Non-respondents challenge the external validity of studies (Ary, Jacobs, & Razavieh, 1996; Creswell, 2003). Relying solely on information from respondents introduces bias into findings of a study and prevents the results from being generalizable to the population (Creswell). Comparing early respondents and late

respondents is one way to deal with this problem, because late respondents have been shown to have similar characteristics to non-respondents (Ary et al.; Goldhor, 1974).

The procedure used to analyze differences between early and late respondents follows: Questionnaires were placed in order by date and time received. The date and time for each questionnaire was provided by Virginia Tech's survey.vt.edu. Early respondents were the first one-third of the questionnaires received-- respondents 1-101 (N=101 of 304 usable returns). Late respondents were the last one-third of the questionnaires received--respondents 202-304 (N=102 of 304 usable returns). Questionnaire responses from each group were compared for statistical differences. Pearson chi-square tests were used to analyze background variables because the data were nominal. The criterion variable and predictor variables were interval data so independent sample t-tests were used to analyze the data. No significant differences between the early and late groups were found with the chi-square or t-test analyses (see Tables 8 and 9). These results support the generalizability of the findings to the accessible population.

Data Collection

A questionnaire (see Appendix M) was developed to collect data from the sampled teachers. The following sections provide a detailed description of the development and testing of this questionnaire.

Development and Structure of the Questionnaire

The questionnaire had three parts: (a) questions gathering demographic information on teachers, (b) questions measuring the criterion variable and (c)

Table 8
Comparison of Early and Late Returns for the Demographic Variables

Demographic variable	Early returns		Late returns		X^2	p
	N	%	N	%		
Gender					1.45	.23
Male	46	46.0	38	38.0		
Female	54	54.0	63	61.8		
Missing	1	1.0	1	1.0		
Total	101	100.0	102	100.0		
Degree					.46	.50
Bachelors	34	34.0	39	38.0		
Masters, EdS/CAS and Doctoral	67	66.0	63	62.0		
Missing	0	0.0	0	0.0		
Total	101	100.0	102	100.0		
Teacher preparation					2.44	.12
Alternative	27	27.0	18	18.0		
Traditional	72	73.0	82	80.0		
Missing	2	2.0	2	2.0		
Total	101	100.0	102	100.0		

(table continues)

Table 8 (continued)

Demographic variable	Early returns		Late returns		X^2	p
	<i>N</i>	%	<i>N</i>	%		
Areas of teaching					2.73	.10
None-core subjects and core and non-core subjects	36	36.0	48	47.0		
Core subjects	65	64.0	54	53.0		
Missing	0	0.0	0	0.00		
Total	101	100.0	102	100.0		
Endorsement					.00	1.00
No	3	3.0	3	3.0		
Yes	97	97.0	97	95.0		
Missing	1	1.0	2	2.0		
Total	101	100.0	102	100.0		
Certification					.29	.60
No license or provisional	9	9.0	7	7.0		
Standard or additional	90	91.0	93	91.0		
Missing	2	2.0	2	2.0		
Total	101	100.0	102	100.0		

* $p \leq .05$, ** $p \leq .01$

Table 9

Comparison of Early and Late Returns for the Continuous Predictor Variables and the Criterion Variable

Variable	Early			Late			<i>t</i>	<i>p</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>		
Mean change in instruction	101	.94	.44	102	.86	.40	1.31	.19
Administrative influence	101	2.71	.40	102	2.81	.46	-1.67	.10
Pressure influence	101	2.47	.34	102	2.56	.43	-1.63	.10
Peer influence	100	2.92	.51	102	2.94	.54	-.25	.80
Self/family/student influence	101	3.07	.32	102	3.07	.39	-.14	.89 ^a
External growth influence	101	2.92	.39	101	2.95	.34	-.52	.61

^aLevene's test for equality of variances was significant [$F(100, 101)=6.35$; $p \leq .05$].

questions measuring the predictor variables. The questionnaire was developed from the researcher's experience, a review of the literature, and the findings from the qualitative study.

Questions gathering demographic information on teachers. The questionnaire began with demographic questions that provided the following information on teachers: (a) gender, (b) years of experience, (c) type of degree held, (d) type of teacher preparation program attended, (e) area(s) of endorsement, (f) teaching within or outside area(s) of endorsement, and (g) current certification. This information was used to categorize data and predict change in teachers' instructional practices.

Questions measuring the criterion variable. The criterion variable is the amount of change in teachers' instructional strategies over the previous two school

years: 2006-2007 and 2007-2008 (see Table 10). Amount of change refers to teachers experiencing much decrease in the use of the strategy, some decrease in the use of the strategy, no change in the use of the strategy, some increase in the use of strategy, much increase in the use of strategy, or have not used the strategy during the 2006-2007 and 2007-2008 school years.

Data collected from the qualitative study and the literature were used to identify instructional practices and develop questions on those practices. According to Wahlstrom and Louis (2008), researchers disagree on what are the most effective instructional strategies. Instructional practices were identified from the work of Blase and Roberts (1994), Desimone, Porter, Garet, Yoon, & Birman (2002), Duke and Tucker (2003), Garet et al. (2001), Johnson (2006), Marzano (2003), and Shank (2005). See Table 11 for a list of these strategies.

Measurement of the criterion variable involved participants completing a multiple-choice formatted on-line questionnaire through Virginia Tech's survey.vt.edu. Teachers were asked to identify if their use of a list of instructional practices increased, remained the same, decreased, or if they had not used the practice during the last two school years. The amount of change was -2 = much decrease in the use of the strategy, -1 = some decrease in the use of the strategy, 0 = no change in the use of the strategy, 1 = some increase in the use of strategy, 2 = much increase in the use of strategy, and 9 = have not used the strategy. The scale was recoded to calculate mean change by converting all negative values to positive values. The scale was changed to: 0 = no change in use of the strategy, 1 = some change in use of the strategy, 2 = much change in use of the strategy. Nines were

Table 10
Conceptual and Operational Definitions for Variables in the Study

Variable	Conceptual definition	Operational definition
Communicating goals to teachers	Efforts made by principals to share instructional expectations with teachers.	Mean of items 41, 78, 75, 98, and 99 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.
Supervising instruction	Giving feedback on instructional strategies during observations, post-observation conferences, formal evaluations, and informal classroom visits.	Mean of Items 33, 73, 80, 97, and 130 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Items 33 and 80 were reverse coded. ¹
Promoting professional development	The extent to which principals alert, and make accessible to teachers, opportunities for professional growth.	Mean of Items 43, 71, 77, 102, and 129 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Item 71 was reverse coded. ¹

(table continues)

Table 10 (continued)

Variable	Conceptual definition	Operational definition
Providing resources	Supplying teachers with the necessary materials for instruction.	Mean of Items 32, 72, 76, 101, and 120 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Item 120 was reverse coded. ¹
Providing incentives for teachers	Promoting teacher improvement and growth through public and private recognition of classroom performance, material rewards, and persuasion.	Mean of Items 42, 74, 79, 100, and 121 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.
Providing support	Encouraging instructional improvement by supporting what teachers do in the classroom, protecting instructional time, handling student discipline, and dealing with disgruntled parents.	Mean of Items 44, 70, 91, 104, and 132 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.

(table continues)

Table 10 (continued)

Variable	Conceptual definition	Operational definition
Issuing directives	Influencing teachers to change by introducing ideas that all staff members must follow.	Mean of Items 34, 68, 84, 105, and 131 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.
Collegiality among teachers	The extent to which teachers interact and support one another on instructional issues.	Mean of Items 46, 67, 83, 107, and 123 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.
Departmental chair support	The amount of instructional leadership provided by departmental chairs.	Mean of Items 51, 58, 94, 116, and 126 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Item 126 was reverse coded. ¹

(table continues)

Table 10 (continued)

Variable	Conceptual definition	Operational definition
Teacher personal beliefs	The amount of influence teachers' own beliefs have on classroom instruction.	Mean of items 53, 57, 115, 119, and 140 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Item 119 was reverse coded. ¹
State and national initiatives	Initiatives at the state and national levels that focus on standards and accountability.	Mean of Items 48, 66, 85, 108, and 134 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Item 85 was reverse coded. ¹
Graduate work	The extent to which knowledge learned from graduate level courses influences what teachers do in the classroom.	Mean of items 35, 63, 86, 124, and 135 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Items 86 and 135 were reverse coded. ¹

(table continues)

Table 10 (continued)

Variable	Conceptual definition	Operational definition
Professional development	Opportunities provided to teachers for professional growth.	Mean of items 45, 69, 81, 103, and 122 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Items 45 and 103 were reverse coded. ¹
Central office	Support given from central office staff by distributing resources, providing professional development, and implementing district-wide initiatives.	Mean of items 36, 64, 90, 109, and 136 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Item 109 was reverse coded. ¹
School improvement plan	The extent to which instructional goals included in school improvement plans support teacher classroom improvement.	Mean of items 49, 59, 92, 111, and 138 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Items 111 and 138 were reverse coded. ¹

(table continues)

Table 10 (continued)

Variable	Conceptual definition	Operational definition
Literacy coach	The extent to which a literacy coach provides teachers with strategies for teaching reading and writing.	Mean of items 38, 61, 88, 112, and 139 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Items 112 and 139 were reverse coded. ¹
Assistant principal	The amount of instructional leadership provided by an assistant principal.	Mean of items 52, 56, 93, 114, and 141 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.
Technology resource teacher	The amount of instructional support provided by technology resource teachers.	Mean of items 39, 54, 96, 117, and 128 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Item 39 was reverse coded. ¹

(table continues)

Table 10 (continued)

Variable	Conceptual definition	Operational definition
Students	The extent to which students provide teachers with new ideas and ways to improve instruction.	Mean of items 47, 65, 82, 106, and 133 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.
Daughter and family members	The extent to which family members provide teachers with new ideas and ways to improve instruction.	Mean of items 40, 55, 95, 118, and 127 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Item 55 was reverse coded. ¹
Outside influences	Instructional support given to teachers by people and organizations outside of school systems.	Mean of items 50, 60, 89, 113, and 125 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Items 89 and 125 were reverse coded. ¹

(table continues)

Table 10 (continued)

Variable	Conceptual definition	Operational definition
Experience	The extent to which a teacher's experience in the classroom affects his or her instruction.	Mean of Items 37, 62, 87, 110, and 137 in the <i>Lineburg Change Questionnaire</i> . The scale is: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.
Teacher endorsement	Identification of teachers as being endorsed in their area of teaching or not being endorsed in their area of teaching.	Item 6 in the <i>Lineburg Change Questionnaire</i> . The coding was 0=no, 1=yes.
Type of degree	The type of degree held by teachers: Bachelors only, or Masters, EdS/CAS, or Doctoral.	Item 3 in the <i>Lineburg Change Questionnaire</i> . The coding was 0=bachelors only, 1 = Masters, EdS/CAS, or Doctoral.
Gender	Identification of teachers as male or female.	Item 1 in the <i>Lineburg Change Questionnaire</i> . The coding was 0=male, 1=female.
Teacher certification	The type of certification held by teachers: (1) no license, (2) provisional, (3) standard, or (4) additional certification(s) beyond standard certification.	Item 7 in the <i>Lineburg Change Questionnaire</i> . The coding was 0=no license/not sure or provisional, 1=Standard or additional.

(table continues)

Table 10 (continued)

Variable	Conceptual definition	Operational definition
Teacher preparation program	Identification of teachers as receiving their teacher training through a traditional college preparation or through an alternative program.	Item 4 in the <i>Lineburg Change Questionnaire</i> . The coding was 0=alternative program, 1=traditional teacher preparation program.
Years of experience	The number of years of experience in teaching.	Item 2 in the <i>Lineburg Change Questionnaire</i> . Data were placed into four groups of experience, 1-10 years, 11-20 years, 21-30 years, and 30+ years.
Area(s) of teaching	Subject(s) taught by teachers during the 2006-2007 and 2007-2008 school years.	Item 5 in the <i>Lineburg Change Questionnaire</i> . The coding was 0=non-core subjects and core and non-core subjects, 1=core subjects.
Administrative influences ²	The influence of assistant principals, principals promoting professional development, principals providing resources, principals communicating goals, principals providing incentives for teachers, principals supervising instruction, and principals providing support on change in teachers' instructional practices.	Items 32, 33, 41, 42, 43, 44, 52, 56, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 91, 93, 97, 98, 99, 100, 101, 102, 104, 114, 120, 121, 129, 130, 132, and 141 in the <i>Lineburg Change Questionnaire</i> . Items 33, 80, and 120 were reverse coded. ¹

(table continues)

Table 10 (continued)

Variable	Conceptual definition	Operational definition
Pressure influences	The extent to which pressures from principals issuing directives, state and national policies, central office staff, school improvement plan, literacy coach, and technology resource teacher influence change in teachers' instructional practices.	Items 34, 36, 38, 39, 48, 49, 54, 59, 61, 64, 66, 68, 84, 85, 88, 90, 92, 96, 105, 108, 109, 111, 112, 117, 128, 131, 134, 136, 138, and 139 in the <i>Lineburg Change Questionnaire</i> . Items 39, 85, 109, 111, 112, 138, and 139 were reverse coded. ¹
Peer influences	The extent to which collegiality among teachers and departmental chair support influence change in teachers' instructional practices.	Items 46, 51, 58, 67, 83, 94, 107, 116, 123, and 126 in the <i>Lineburg Change Questionnaire</i> . Item 126 was reverse coded. ¹
Self/family/student influences	The influence of students, family members, teacher experience, and teacher personal beliefs on change in teachers' instructional practices.	Items 37, 40, 47, 53, 55, 57, 62, 65, 82, 87, 95, 106, 110, 115, 118, 119, 127, 133, 137, and 140 in the <i>Lineburg Change Questionnaire</i> . Items 55 and 119 were reverse coded. ¹
External growth influences	Influences on change in teachers' instructional practices from professional development opportunities, graduate work, and outside influences.	Items 35, 45, 50, 60, 63, 69, 81, 86, 89, 103, 113, 122, 124, 125, and 135 in the <i>Lineburg Change Questionnaire</i> . Items 45, 85, 89, 103, 125, and 135 were reverse coded. ¹

(table continues)

Table 10 (continued)

Variable	Conceptual definition	Operational definition
Amount of change in teachers' instructional practices	The amount of change in teachers' instructional practices over the previous two school years, 2006-2007 and 2007-2008.	Sum of the absolute value of items 8 through 31 in the <i>Lineburg Change Questionnaire</i> , excluding those items marked as not having been used during the past two years. The scale is: -2 = much decrease in the use of the strategy, -1 = some decrease in the use of the strategy, 0 = no change in the use of the strategy, 1 = some increase in the use of the strategy, 2 = much increase in the use of the strategy, and 9 = have not used the strategy. The scale was recoded for mean change by converting all negative values to positive values. The scale was changed to: 0 = no change in use of the strategy, 1 = some change in use of the strategy, 2 = much change in use of the strategy

Note. The items on the *Lineburg Change Questionnaire* are in Appendix M.

¹The recoding was 1=4, 2=3, 3=2, and 4=1

² Administrative influences, pressure influences, peer influences, self/family/student influences, and external growth influences were added after the principal components analysis.

Table 11

Instructional Practices Identified in the Literature and the Qualitative Study

Instructional practices	Source
Assessments	P1, p.1
Classroom discussion	Marzano (2003)
Collaborative teaching	P7, p.3
Concept-based instruction	T3, p.4
Cooperative groups	Marzano (2003); T7, p.1
Critical thinking skills	Desimone et. al (2002); T7, p.3
Cross-curricular activities	T7, p.3
Differentiation	Blase and Roberts (1994); P9, p.5
Direct Instruction	Martin and Shulman (2006)
Enrichment activities	Duke and Tucker (2003)
Focus on vocabulary	T1, p.1
Giving feedback on assignments	Marzano (2003)
Graphic organizers	Marzano (2003); P2, p.1
Hands-on learning activities	Supovitz and Turner (2000); T6, p.1
Homework	Marzano (2003)
Incorporating reading and writing strategies	P4, p.1
Questioning	Shank (2005)
Review activities	Duke and Tucker (2003)
Standards-based instruction	T2, p.1

(table continues)

Table 11 (continued)

Instructional practices	Source
Student inquiry	Johnson (2006); T6, p.1
Student projects	Marzano (2003)
Use of technology for instruction	Garet et al. (2001); T1, p.1

Note: Instructional strategies were identified from the literature review and the qualitative study (e.g., P1, p1 is from the interview transcript of principal 1, page 1 of the qualitative study (T =teacher), and Marzano (2003) is from the literature review).

not included in the analysis of the data. Teachers who experienced much change in their instructional practices had a higher score.

Questions measuring the predictor variables. The predictor variables are principal leadership strategies, other influences found in the theory as influencing change in teachers' instructional practices, and teacher demographic variables (see Table 10). Principal leadership strategies are: (a) communicating goals, (b) issuing directives, (c) promoting professional development, (d) providing incentives, (e) providing resources, (f) providing support, and (g) supervising instruction. Other influences are: (a) collegiality among teachers, (b) departmental chair support, (c) state and national policies, (d) teacher personal beliefs, (e) professional development (f) experience, (g) students, (h) graduate work, (i) central office staff, (j) outside influences, (k) school improvement plan, (l) literacy coach, (m) assistant principal, (n) technology resource teacher, and (o) family members. Teacher demographic variables are: (a) gender, (b) years of experience, (c) type of degree held, (d) type of teacher preparation program attended, (e) area(s) of endorsement, (f) teaching within or outside area(s) of endorsement, and (g) current certification (see Appendix N for a list of questions under each variable).

Content Validation of the Questionnaire

Content validation was conducted on two parts of the questionnaire: Part 1 contained the domains of influences on teachers' instructional practices. Part 2 contained a list of practices that teachers may use in their classrooms.

Content validation for Part 1 began with developing three content validation instruments that contained the items generated from my experience, a review of the

literature, and the analysis of the qualitative data (see Appendix O). Three instruments were used because of the large number of domains and items to be tested. The instruments were divided by domain numbers and administered to separate groups: (a) items for domains one through seven were administered to a class of doctoral students at Virginia Tech and administrators from surrounding school districts, (b) items for domains eight through fifteen were administered to two master's degree classes at Virginia Tech and administrators from surrounding school districts, and (c) items for domains sixteen through twenty-two were administered to teachers at the school where the researcher works. Administrators from surrounding school districts were contacted due to low response rates (see Table 12).

Each item was analyzed for its fit within a domain, strength of association with that domain, and its level of clarity. Participants were asked to provide feedback on any item they felt had a weak association with the expected domain or had a low level of clarity. The feedback received was not helpful in revising items that did not meet the inclusion criteria. Level of association and clarity of each item were determined through calculating the mean and standard deviation for each item. To be acceptable, an item had to be placed into its expected domain by at least 80% of the raters and had to have a mean association score of 3.5 or higher and a clarity score of 2.5 or higher. The results of this step were used to revise or omit items found by participants to be unclear or lack association with the domain it was placed under (see Appendix P).

Table 12
Number of Participants for the Content Validation Instruments

<u>Instruments</u>	<u>Participants</u>	
	<u>Number contacted</u>	<u>Number responded</u>
Domains 1 through 7	27	11
Domains 8 through 15	37	10
Domains 16 through 22	71	14
Domains 1 through 7 ¹	12	10

¹ A second content validation instrument was created for Domains 1 through 7. The researcher wanted five items from each domain for the questionnaire. Only four items met the criteria for inclusion from the first content validation instrument.

The five items from each domain with the highest mean strength of association and clarity scores were included on the questionnaire. Some domains had more than five items that met the inclusion criteria. In these instances, items that the researcher believed best represented the domain, and those that were not redundant, were chosen for final inclusion.

A second content validation instrument was created for domains one through seven (see Appendix O). Four out of ten items in domain seven met the criteria for inclusion. The six items that did not meet the criteria were revised and placed on the second content validation instrument. The instrument was administered to summer school teachers, administrators in the school district where the researcher is employed, and teachers who are personal contacts of the researcher. Item 20 in Domain 7 met the criteria for inclusion on the questionnaire (see Appendix P). See Table 13 for a list of final items included in each domain.

Content validation for Part 2 was conducted with teachers who were given a list of instructional strategies identified in the literature review and qualitative study (see Appendix O). They were asked if they typically used these instructional strategies, or if they were used by other teachers in their building. Numbers one through nineteen were used by 77% or more of the respondents. This supports the validity of the selected

Table 13

The Final Domains and Items for the Quantitative Study

Domains, Descriptions, and Items

Domain 1: Promoting professional development

Description: The extent to which principals alert and make accessible to teachers opportunities for professional growth.

Items:

- 129. My principal organizes in-service activities.
 - 71. Professional development is not made accessible by my principal. (R)
 - 43. I am encouraged by my principal to participate in professional development opportunities.
 - 77. My principal alerts me to college courses for professional development.
 - 102. My principal brings in experts in certain areas for professional development.
-

Domain 2: Providing resources

Description: Supplying teachers with the necessary materials for instruction.

Items:

- 101. My principal allocates money each year for teachers to spend.
 - 32. My principal always provides resources that I ask for.
 - 120. My principal does not supply resources for my work. (R)
 - 76. My principal provides ample resources for my work.
 - 72. If I need resources they are made available to me by my principal.
-

(table continues)

Table 13 (continued)

Domains, Descriptions, and Items

Domain 3: Communicating goals.

Description: Efforts made by principals to share instructional expectations with teachers.

Items:

- 41. My principal communicates instructional goals for the school.
 - 78. My principal communicates instructional goals during faculty meetings.
 - 75. My principal communicates a clear vision for the school.
 - 98. Instructional goals are posted throughout my school.
 - 99. Teachers in my school are aware of the instructional goals for our school.
-

Domain 4: Providing incentives for teachers

Description: Promoting teacher improvement and growth through public and private recognition of classroom performance, material rewards, and persuasion.

Items:

- 100. Teachers are publicly praised by my principal.
 - 74. My principal uses faculty meetings to praise teachers.
 - 79. My principal celebrates achievements by teachers.
 - 121. Rewards provided by my principal motivate me.
 - 42. My principal recognizes teachers for their achievements.
-

Domain 5: Supervising instruction

Description: Giving feedback on instructional strategies during observations, post-observation conferences, formal evaluations, and informal classroom visits.

Items:

- 80. My principal does not discuss classroom observations with me. (R)
 - 33. Post-observation conferences by my principal are just a formality. (R)
 - 97. I receive suggestions from my principal following observations.
 - 73. I am frequently observed by my principal.
 - 130. I receive feedback from my principal following observations.
-

(table continues)

Table 13 (continued)

Domains, Descriptions, and Items

Domain 6: Providing support

Description: Encouraging instructional change and improvement by supporting what teachers do in the classroom.

Items:

- 91. My principal prevents disruptions during the school day.
 - 70. My principal handles student discipline.
 - 104. Instructional time is protected by my principal.
 - 44. I feel supported by my principal.
 - 132. My principal deals with disgruntled parents.
-

Domain 7: Issuing directives

Description: Influencing teachers to change by introducing ideas that all staff members must follow.

Items:

- 105. Decisions regarding instruction in my school are top down.
 - 84. My principal directs teachers to use certain instructional practices.
 - 131. My principal makes decisions regarding instructional changes.
 - 68. My principal dictates how I teach.
 - 34. My principal makes all decisions regarding instruction.
-

Domain 8: Professional development

Description: Opportunities provided to teachers for professional growth.

Items:

- 69. I have learned new instructional practices from professional development opportunities.
 - 45. Teachers in my school are not provided professional development opportunities. (R)
 - 103. Professional development has no impact on what I do in the classroom. (R)
 - 122. Professional development supports what I do in the classroom.
 - 81. Professional development has changed the way I teach.
-

(table continues)

Table 13 (continued)

Domains, Descriptions, and Items

Domain 9: Collegiality among teachers

Description: The extent to which teachers interact and support one another on instructional issues.

Items:

- 46. I feel comfortable approaching my colleagues for new instructional ideas.
 - 83. I get new instructional ideas from members of my department.
 - 67. Teachers in my school plan together.
 - 123. I discuss new ways to teach a subject with other teachers.
 - 107. I share instructional strategies with teachers in my school.
-

Domain 10: State and national policies

Description: Initiatives at the state and national levels that focus on standards and accountability.

Items:

- 48. The No Child Left Behind Act has forced me to implement strategies to reach diverse learners.
 - 85. State and national policies have little impact on what I do in the classroom. (R)
 - 108. My instruction is focused on state standards.
 - 134. I use data from state tests to drive my instruction.
 - 66. Scores on state tests have forced me to focus on remediation.
-

Domain 11: Students

Description: The extent to which students provide teachers with new ideas and ways to improve instruction.

Items:

- 65. Feedback from my students has motivated me to change how I teach.
 - 106. I have incorporated more technology because of my students.
 - 47. I change the way I teach to accommodate the needs of my students.
 - 82. My students influence how I teach.
 - 133. I use more technology because students are accustomed to it.
-

(table continues)

Table 13 (continued)

Domains, Descriptions, and Items

Domain 12: Central office staff

Description: Support given from central office staff by distributing resources, providing professional development, and implementing district-wide initiatives.

Items:

- 90. Central office support has encouraged changes in my teaching.
 - 36. Central office sets instructional goals for teachers.
 - 109. I rarely communicate with members of central office. (R)
 - 64. I receive resources to support instruction from central office.
 - 136. Central office directives influence how I teach.
-

Domain 13: Graduate work

Description: The extent to which knowledge learned from graduate level courses influences what teachers do in the classroom.

Items:

- 86. Graduate classes I have taken do not relate to what I do in the classroom. (R)
 - 35. Graduate level classes have improved my teaching skills.
 - 63. I have learned new instructional strategies from graduate classes.
 - 135. Graduate work has not influenced what I do in the classroom. (R)
 - 124. I have used instructional strategies I learned from graduate work.
-

Domain 14: Experience

Description: The amount of influence years of experience has on teachers' classroom instruction.

Items:

- 62. Experience has made me more willing to take instructional risks.
 - 87. Experience has improved my teaching skills.
 - 110. How I learned as a student has influenced how I teach.
 - 37. Experience has changed the instructional strategies I use.
 - 137. My personal experiences have influenced the way I teach.
-

(table continues)

Table 13 (continued)

Domains, Descriptions, and Items

Domain 15: Outside influences

Description: Instructional support given to teachers by people and organizations outside of school systems.

Items:

- 60. I have learned new instructional strategies from sources outside of my school system.
 - 125. I have never used instructional resources from outside of my school system. (R)
 - 50. I have received resources to support instruction from sources outside of my school.
 - 89. I am not aware of instructional resources outside of my school system. (R)
 - 113. I am influenced by organizations outside of my school.
-

Domain 16: School improvement plan

Description: Promoting school-wide growth by concentrating on goals that focus on areas of improvement.

Items:

- 49. The goals of my school's improvement plan have changed what I do in the classroom.
 - 111. I am not familiar with goals included in my school's improvement plan. (R)
 - 92. My school's improvement plan focuses on new instructional strategies.
 - 138. I am not aware of a school improvement plan for my school. (R)
 - 59. I have incorporated instructional strategies included in my school's improvement plan.
-

Domain 17: Literacy coach

Description: The extent to which a literacy coach provides teachers with strategies for teaching reading and writing.

Items:

- 38. My school's literacy coach has provided strategies on how to teach reading.
 - 88. I have received training on reading strategies from a literacy coach.
 - 112. I am not aware of a literacy coach in my school. (R)
 - 61. My school's literacy coach has motivated me to focus on teaching reading.
 - 139. I have never received support from a literacy coach. (R)
-

(table continues)

Table 13 (continued)

Domains, Descriptions, and Items

Domain 18: Personal beliefs

Description: The amount of influence teachers' own beliefs have on classroom instruction.

Items:

- 57. Changes I make in the classroom come from my own beliefs about how students learn.
 - 53. I believe that traditional teaching methods are the most effective way for students to learn.
 - 119. I am unwilling to change my personal beliefs about how students should learn. (R)
 - 115. My personal beliefs about education influence what I do in the classroom.
 - 140. The instructional strategies I use are ones I feel are beneficial to students.
-

Domain 19: Assistant principal

Description: The amount of instructional leadership provided by an assistant principal.

Items:

- 114. My assistant principal provides suggestions following classroom observations.
 - 52. My assistant principal has provided me resources to support instruction.
 - 93. My assistant principal discusses classroom observations with me.
 - 141. I discuss instructional methods with my assistant principal.
 - 56. My assistant principal holds instructional conferences with teachers.
-

Domain 20: Departmental chair

Description: The amount of instructional leadership provided by departmental chairs.

Items:

- 51. My departmental chair discusses instructional strategies with members of my department.
 - 94. I receive instructional resources from my departmental chair.
 - 116. I have a strong, collegial relationship with my departmental chair.
 - 126. I never discuss instruction with my departmental chair. (R)
 - 58. My departmental chair is an instructional leader.
-

(table continues)

Table 13 (continued)

Domains, Descriptions, and Items

Domain 21: Technology resource teacher

Description: The amount of instructional support provided by technology resource teachers.

Items:

- 54. I have learned to use technology in the classroom from a Technology Resource Teacher.
 - 96. The Technology Resource Teacher in my school is knowledgeable about instructional practices.
 - 117. I have received instructional support from a Technology Resource Teacher.
 - 128. I have received technology support from a Technology Resource Teacher.
 - 39. My school does not have a Technology Resource Teacher. (R)
-

Domain 22: Daughter and family members

Description: The extent to which siblings provide teachers with new ideas and ways to improve instruction.

Items:

- 95. My own children's experiences in school have influenced my teaching.
 - 40. Family members have influenced my teaching.
 - 118. My children have influenced my teaching.
 - 127. I have learned new instructional strategies from my own children.
 - 55. My family is not supportive of my teaching career. (R)
-

Note: All Items are in the *Lineburg Change Questionnaire* (see Appendix M). Items marked with an R were recoded as follows: 1=4, 2=3, 3=2, and 4=1.

¹ Item numbers were changed from the content validation instruments to show their placement on the questionnaire.

strategies. Numbers 20 through 26 were added by respondents. They were used by .06% or fewer respondents and were not included in the questionnaire (see Table 14).

Construct validity. Factor analysis is a form of construct validity that reduces data sets by clustering variables into factors (Green & Salkind, 2003). It helps researchers understand the relationships within a large set of variables (Comrey & Lee, 1992). Twenty-two variables were hypothesized to influence teachers' instructional practices. A type of factor analysis, principal components analysis, was used to reduce the 22 variables to a smaller set of factors for data analysis. Varimax rotation with Kaiser normalization was used to interpret the factors. The rotation converged in 6 iterations. See Appendix Q for the statistical tables associated with the principal components analysis.

The analysis produced five components (see Table 15). The five components and their related scales follow (see Appendix Q for the items within each component and the variance in the items explained by the components). Definitions of scales are in Table 10.

Component 1: Administrative influence. This component contained seven scales, and all scales had content associated with the principal's or assistant principal's work in

Table 14

*Content Validation Data for the Change in Instructional Practices Questionnaire:
Frequency of Instructional Practices Usage, N=35*

Item	N (used strategy)	N (did not use strategy)	Percent
1. Assessments	34	1	97
2. Classroom discussion	33	2	94
3. Collaborative teaching	29	6	83
4. Concept-based instruction	30	5	86
5. Cooperative groups	32	3	91
6. Critical-thinking skills	28	7	80
7. Cross-curricular activities	27	8	77
8. Differentiation	29	6	83
9. Direct instruction	33	2	94
10. Enrichment activities	32	3	91
11. Focus on vocabulary	31	4	89
12. Giving feedback on assignments	28	7	80
13. Graphic organizers	27	8	77
14. Hands-on learning activities	32	3	91
15. Homework	33	2	94
16. Incorporating reading and writing strategies	32	3	91
17. Questioning	33	2	94
18. Review activities	32	3	91
19. Standards-based instruction	33	2	94
20. Authentic assessment	1	34	.03
21. Content enhancement routines	1	34	.03
22. Inquiry labs	1	34	.03
23. Internships	1	34	.03
24. Community service projects	2	33	.06
25. Volunteerism	1	34	.03
26. Project-based instruction	1	34	.03
27. Student inquiry ¹	0	0	0
28. Use of technology for instruction	0	0	0
29. Student projects	0	0	0

Note. Numbers 1 through 19 were found in the literature and results from the qualitative study. Numbers 20 through 26 were added from the content validation process.

¹ Items 27, 28, and 29 were inadvertently omitted from the content validation instruments. They were included on the final questionnaire.

Table 15

Rotated Components Matrix for the Factor Analysis

	Component				
	1	2	3	4	5
Providing professional development	.813	.173	.196	.011	.010
Providing resources	.823	.020	.119	.016	.171
Communicating goals	.767	.302	.186	.081	-.020
Providing incentives	.813	.077	.186	.050	.074
Supervising instruction	.705	.202	.011	-.107	-.060
Providing support	.806	.052	.032	.144	.113
Issuing directives	-.001	.729	-.152	-.106	-.084
Professional development	.430	.147	.173	.014	.625
Collegiality among teachers	.176	.056	.816	.060	.020
State and national policies	.029	.707	.060	-.070	.037
Students	.060	.043	.258	.598	.266
Central office staff	.286	.609	.033	.030	.178
Graduate work	-.009	.163	-.157	-.012	.723
Outside influences	.111	-.187	.334	.309	.564
School improvement plan	.424	.507	.214	.071	.083
Literacy coach	.249	.573	.282	.041	.101
Assistant principal	.428	.381	.356	.028	-.319
Departmental chair	.235	.186	.698	-.123	.043
Technology resource teachers	.260	.405	.268	.220	.028
Daughter and family members	.144	.212	-.124	.643	.005
i37r	.009	-.191	.284	.422	-.009
i57r	-.115	-.146	-.303	.634	-.057

Note. Method: Principal components analysis. Rotation method: Varimax with Kaiser Normalization. The criteria for placing an item within a component was a loading of .40 or more and researcher judgment.

promoting school change. The scales were: (1) promoting professional development, (2) providing resources, (3) communicating goals, (4) providing incentives for teachers, (5) supervising instruction, (6) providing support, and (7) the assistant principal as a source of influence on teachers' instructional practices.

Component 2: Pressure influence. This component contained six scales and all scales had content associated with pressures put on teachers to change their instructional practices. One scale, issuing directives, was associated with principal leadership. It was placed in this component because of a high factor loading. The scales were: (1) issuing directives, (2) state and national policies, (3) central office staff, (4) school improvement plan, (5) literacy coach, (6) technology resource teacher.

Component 3: Peer influence. This component contained two scales, and they were associated with the influence of colleagues on teacher change. The scales were (1) collegiality among teachers and (2) departmental chair.

Component 4: Self/family/student influence. This component contained four scales, and they were associated with influences on teacher change from teachers' personal beliefs, experience, family members, and students. The scales were: (1) students, (2) family, (3) experience, and (4) personal beliefs.

Component 5: External growth influence. This component contained three scales, and they were associated with influences on teachers from outside the school system. The scales were: (1) professional development, (2) graduate work, and (3) outside influences.

Administering the Questionnaire

The questionnaire was administered by email using Virginia Tech's survey.vt.edu (see Appendix R for IRB approval letter). Administration and follow up was conducted using Dillman's Tailored Design Method (2000). An email questionnaire was chosen because it is more convenient and saves money (Schaefer & Dillman, 1998). Dillman stated that electronic questionnaires allow researchers to go beyond just surveying samples, but entire populations.

Mail merge was used to increase personalization of each email. Efforts were made to address emails with the first and last name of each potential participant. Full names for 57 potential participants were not found. These individuals were addressed with their title and last name. Seventeen potential participants were addressed as teacher. First names or titles were not located for these individuals. The remaining individuals were addressed with their first and last names.

The procedures for emailing a questionnaire are similar to that of a mail questionnaire (Dillman, 2000). Like the mail questionnaire, Dillman recommended multiple contacts through email to increase participant response rate. This process began with a pre-notice (see Appendix S) emailed three days prior to the questionnaire. This message made each participant aware of the questionnaire that would soon be arriving by email.

The next step was to e-mail a brief cover letter that explained the purpose of the study and its benefits to teachers and principals (see Appendix T). It emphasized to each person that response to the questionnaire is vital to the success of the study. An

explanation of respondent confidentiality was provided through letting participants know that their names would not be used in the study. Included in the cover letter was the questionnaire's URL.

Within a week of the questionnaire and cover letter being emailed, a follow-up email message (see Appendix U) was sent to each participant extending my gratitude for their participation in the study. This included the questionnaire's URL for those who had not responded. Two weeks after the original email of the questionnaire, another email with the questionnaire's URL was sent to all participants thanking those who responded, and encouraging those who had not responded to do so at this time (see Appendix U). Three weeks after the original email of the questionnaire, a final notice to complete the questionnaire was emailed to all participants (see Appendix U). Dillman (2000) suggested a special follow-up email after the final notice to all participants to improve response rates. This was not done due to a low response rate from the final notice.

Reliability of the Scales

Cronbach's alpha was used to test the reliability of the scales. This method is a measure of internal consistency among items in a scale. A high alpha indicates that items in the scale have a strong association. Two reliability analyses were performed. The first included the original scales and their related items, and the second included the scales constructed following the principal components analysis (see Table 16).

In the first reliability analysis with the items and original scales, all alphas met the criterion except for: (a) experience (.53), (b) state and national policies (.66), (c) students (.60), (d) central office staff (.62), (e) outside influences (.64), (f) school

Table 16

Cronbach's Alpha Coefficients for the Predictor Variables before the Principal Components Analysis

Scale	Number of items	Items	N	Item mean	Item variance	Cronbach's alpha
Promoting professional development (Ppd)	5	i129r, i71rr, i43r, i77r, i102r	273	2.87	.51	.76
Providing resources (Prores)	5	i101r, i32r, i120rr, i76r, i72r	279	2.81	.48	.83
Communicating goals (Comgoal)	5	i41r, i78r, i75r, i98r, i99r	283	2.84	.51	.78
Providing incentives for teachers (Proincen)	5	i100r, i74r, i79r, i121r, 142r	278	2.79	.57	.87
Supervising instruction (Supinst)	5	i80rr, i33rr, i97r, i73r, i130r	270	2.63	.57	.82
Providing support (Provsup)	5	i91r, i70r, i104r, i44r, i132r	274	2.83	.58	.72
Issuing directives (Issdirec)	5	i105r, i84r, i131r, i68r, i34r	274	2.19	.50	.70
Professional development (Profdeve)	5	i69r, i45rr, i103rr, i122r, i81r	278	3.00	.45	.74
Collegiality among teachers (Collegia)	5	i46r, i83r, i67r, i123r, i107r	277	3.03	.44	.74
State and national policies (Statenat)	5	i48r, i85rr, i108r, i134r, i66r	267	2.61	.60	.66
Students (Students)	5	i65r, i106r, i47r, i82r, i133r	269	3.10	.34	.60
Central office staff (Centoffi)	5	i90r, i36r, i109rr, i64r, i136r	273	2.38	.59	.62

(table continues)

Table 16 (continued)

Scale	Number of items	Items	N	Item mean	Item variance	Cronbach's alpha
Graduate work (Graduate)	5	i86rr, i35r, i63r, i135rr, i124r	260	2.78	.59	.89
Experience (Experien)	5	i62r, i87r, i110r, i37r, i137r	273	3.30	.36	.53
Outside influences (Outside)	5	i60r, i125rr, i50r, i89rr, i113r	271	2.98	.46	.64
School improvement plan (Scimprov)	5	i49r, i111rr, i92r, i138rr, i59r	274	2.90	.46	.68
Literacy coach (Literacy)	5	i38r, i88r, i112rr, i61r, i139rr	267	2.33	.89	.90
Personal beliefs (Persbeli)	5	i57r, i53r, i119rr, i115r, i140r	275	2.96	.44	.10
Assistant principal (Ap)	5	i114r, i52r, i93r, i141r, i56r	267	2.44	.67	.85
Departmental chair (Depchair)	5	i51r, i94r, i116r, i126rr, i58r	271	2.85	.74	.88
Technology resource teacher (Trt)	5	i54r, i96r, i117r, i128r, i39rr	266	2.51	.84	.89
Daughter and family members (Family)	5	i95r, i40r, i118r, i127r, i55rr	254	2.75	.68	.71

Note. Because of the low reliability coefficients for experience and personal beliefs, these scales were not used in the analysis of the data. A single item was selected as a measure of each construct. For experience, Item 37 was selected as the measure, and for personal beliefs, Item 57 was selected. The content of these items is in Table 13.

improvement plan (.68), and (g) personal beliefs (.10). Variables with coefficients that were .60 or higher were considered close enough to the accepted criterion (.70) for further analysis. Experience and personal beliefs were below .60. One item, considered by the researcher to be a good proxy for each of these variables, was selected for use in further analyses. Those items were: (1) item 37 for experience, which stated, “Experience has changed the instructional strategies I use”, and (2) item 57 for personal beliefs, which stated, “Changes I make in the classroom come from my own beliefs about how students learn” (see Table 16).

In the second reliability analysis, Cronbach’s alpha coefficients were run for the predictor variables after the principal components analysis (see Table 17). All alphas met the criterion except for self/family/student influence (.38) and external growth influence (.47). External growth influence and self/family/student influence were kept in further analyses to see how they would perform as variables.

Scoring Change in Teachers’ Instructional Practices

A numeric scale with the following responses was used to measure change in teachers’ instructional practices: -2 = much decrease in the use of the strategy, -1 = some decrease in the use of the strategy, 0 = no change in the use of the strategy, 1 = some increase in the use of the strategy, 2 = much increase in the use of the strategy, and 9 = have not used the strategy. The scale was recoded to calculate mean change by converting all negative values to positive values. The scale was changed to: 0 = no change in use of the strategy, 1 = some change in use of the strategy, 2 = much change in use of the strategy. Nines were not included in the

Table 17

Cronbach's Alpha Coefficients for the Predictor Variables after the Principal Components Analysis

Scale	Number of variables	Variables	N	Item mean	Item variance	Cronbach's alpha
Administrative influence	7	Promoting professional development, providing resources, communicating goals, providing incentives, supervising instruction, providing support, and assistant principal	295	2.75	.32	.89
Pressure influences	6	Issuing directives, state and national policies, central office staff, school improvement plan, literacy coach, and technology resource teacher	299	2.50	.35	.71
Peer influence	2	Collegial support, departmental chair	301	2.93	.36	.65
Self/family/student influence	4	Students, family, i37r, i57r ¹	294	3.10	.32	.38
External growth influence	3	Professional development, graduate work, outside influences	296	2.91	.27	.47

¹ Because of the low reliability coefficients for experience and personal beliefs, these scales were not used in the analysis of the data. A single item was selected as a measure of each construct. For experience, Item 37 was selected as the measure, and for personal beliefs, Item 57 was selected. The content of these items is in Table 12.

analysis of the data. Teachers who experienced much change in their instructional practices had a higher score.

Scoring Influences on Change in Teachers' Instructional Practices.

A four-point Likert-type response scale was used for each item in the following measures: (a) communicating goals, (b) issuing directives, (c) promoting professional development, (d) providing incentives, (e) providing resources, (f) providing support, (g) supervising instruction, (h) collegiality among teachers, (i) departmental chair support, (j) state and national policies, (k) teacher personal beliefs, (l) professional development (m) experience, (n) students, (o) graduate work, (p) central office staff, (q) outside influences, (r) school improvement plan, (s) literacy coach, (t) assistant principal, (u) technology resource teacher, and (v) family members. The scale has the following responses and values: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Items with negative questions were reverse coded: 1 = 4, 2 = 3, 3 = 2, and 4 = 1. An individual's score is the average item score across all items in a scale. A principal components analysis was run to assess the factor structure of the items. This new factor structure was used in the analysis of the data (see Table 15). Scores for each predictor variable were computed through SPSS, Version 11.0.

Data Management

Data compiled from administering the questionnaire were exported from Virginia Tech's survey.vt.edu to SPSS. This was followed by conducting data checks to test for accuracy and to correct errors. Means, standard deviations, frequencies,

and minimum and maximum values were calculated and reviewed to locate any data errors.

Data Analysis

Two types of analysis were conducted. Following presentation of the univariate statistics for the variables, bivariate analyses between and among the variables were conducted and reported. Multiple regression was used to analyze the multivariate relationships between the criterion variable and the predictor variables.

CHAPTER 3

RESULTS

Results from the qualitative and quantitative parts of the study are presented in this chapter. Data from interviews with nine teachers and nine principals are analyzed and interpreted qualitatively. Data from a questionnaire distributed to a nationwide sample of teachers are analyzed with multiple regression and interpreted to assess the relationships between the predictor and criterion variables.

Results of the Qualitative Part of the Study

Results from the interview protocols are divided into three sections. The amount of change in the instructional practices used by teachers is reported in Section I. The influence principals have on change in teachers' instructional practices is presented in Section II, and other influences on change in teachers' instructional practices are identified in Section III.

Amount of Change in Teachers' Instructional Practices

Teachers were asked, "Which of the following best describes you?" Principals were asked, "Which one of the following best describes teachers in your school?" These were multiple choice questions where participants had four possible answers: (a) Used the same instructional practices each year, (b) incorporated one or two new instructional practices each year, (c) changed how they teach a great deal each year, and (d) never taught the same way each year. Nine principals and five teachers stated that teachers incorporated one or two new instructional practices each year, two teachers said it was somewhere between changing how they teach a great deal each year and never

teaching the same way each year, and one teacher answered that he or she never taught the same way each year.

A clear pattern was found in the answers to this question. Fourteen participants chose incorporating one or two new instructional practices as their answer. Two others thought their answer was somewhere between incorporating one or two new instructional practices and changing how they teach a great deal each year. Most participants did not explain why they said one or two new instructional practices each year. One principal stated that a focus on differentiated instruction motivated teachers to incorporate one or two new strategies:

We did differentiated instruction last year, and we will be continuing it this year. In the past we may have mentioned it, we may have looked for it, but now we have more intensive training on it. (P4, p. 5)

Participants may have felt incorporating one or two new instructional practices was the safe answer because it was not as extreme as the other options. Using the same instructional practices each year would indicate an unwillingness to change, while changing how they teach a great deal and never teaching the same way each year both indicate a great deal of change. One teacher did explain that experience influenced her change in instructional practices:

If I was to answer this up to three years ago I would probably have said (a), I teach the same way each year, but as I said earlier, I am beginning to incorporate new strategies. So I would say that the answer would probably be (b), I try to introduce at least one new strategy each year. (T7, p. 4)

Participants mentioned 12 changes in instructional practices during the last two school years (see Table 18). Incorporating more technology than in the past was the most common category of changes. Technological changes were mentioned by four principals and six teachers.

Principals and teachers differed in the changes they believed teachers made in classrooms. Five principals identified strategies addressing different learning styles (referred to as differentiation by several principals), and four principals stated that teachers were using more standards-based instruction, such as data-driven instruction and remediation. Principals focused on strategies in differentiation, standards-based instruction, and assessments. According to the principals, these changes were the result of state and national policies. One principal explained when asked why teachers were focusing on data:

Well, we don't have a choice really. I am sure it is the same with you. We have these state-mandated achievement tests. In Ohio we are graded as a district and as a building and of course now with AYP you have to meet your AYP goals ... to avoid the consequences of not meeting the goals. (P9, p.4)

No teachers mentioned incorporating more differentiation strategies. Three teachers stated that they were implementing more standards-based instructional practices, but none mentioned assessments. Nine teachers mentioned student-centered instruction, including simulations, review games, or hands-on learning as their focus. Teachers focused more on student-centered instructional strategies, while principals concentrated on standards-based instructional strategies.

Table 18
Categories of New Instructional Practices Implemented by Teachers

Instructional Strategy	Principals	Teachers
Incorporating more technology	P5, P6, P8, P9	T1, T2, T3, T5, T8, T9
Strategies addressing different learning styles (differentiation)	P1, P3, P4, P8, P9	T9
Graphic organizers		T1
Focus on vocabulary	P2	T1
Standards-based instruction (focus on data, remediation)	P1, P3, P4, P9	T2, T4, T5
Concept-based instruction	P8	T3
Student-centered instruction (simulations, review games)		T3, T4, T5, T7, T9
Student inquiry		T6
Hands-on learning		T6
Critical thinking		T6
Cooperative learning	P6	T7, T8
Curriculum renewal	P8	T8
Cross-curricular activities	P2, P3	T7
Assessments	P1, P2, P8	
Incorporating reading and writing strategies	P4	T8, T9
Collaborative teaching	P7	

Note: P1 = Principal 1, and T1 = Teacher 1

Influences on Changes in Teachers' Instructional Practices

The theory constructed for this study is an explanation for changes that teachers make in their instructional practices, with special emphasis on the influence of high school principals. The theory has two components of influence: (a) leadership strategies of principals, and (b) other influences on teachers' classroom practices.

Sixteen influences on change in teachers' instructional practices were found in the interview data. They were: (a) the principal, (b) other teachers, (c) state and national policies, (d) professional development, (e) students, (f) central office staff, (g) graduate work, (h) experience, (i) outside influences, (j) school improvement plan, (k) literacy coach, (l) personal belief, (m) assistant principal, (n) department head, (o) technology resource teacher, and (p) family members. The principal's influence is reported first and is followed by the 14 other influences.

The Principal's Influence on Teachers' Instructional Practices

Twelve participants, four teachers and eight principals, cited the principals' leadership as an influence. Principal leadership strategies that influenced teachers were: (a) promoting professional development, (b) communicating goals, (c) providing resources, (d) providing incentives, (e) supervising instruction, (f) providing support, and (g) issuing directives. The only strategies not included in the previously constructed theory were providing support and issuing directives.

Promotion of professional development. Four principals stated that promoting professional development influenced teachers to change their instructional practices. They did this by sending teachers to workshops, organizing in-house staff

development opportunities, and bringing in guest speakers to address instructional strategies. One principal stated:

The third thing we have done is differentiated instruction. We are paying a lot of attention to this. We are sponsoring a lot of professional development and allowing our teachers to go to workshops to learn about different ways to reach all students instead of just touching a few. (P1, p. 1)

Three teachers mentioned professional development as an influence on their instructional practices. No teachers cited the principal as the person who provided them professional development opportunities.

Communicating goals. Two principals and one teacher said that goal setting influenced the instructional practices used by teachers. The teacher stated that his school had re-aligned its curriculum with state standards to raise low test scores. He cited the leadership of his department and principal for this realignment (T4, p. 4). Both principals helped guide goal setting through their school improvement plan. When asked who helped teachers with changes in their use of technology, one principal explained:

Of course we always go through our school improvement plan. In North Carolina we have a school improvement plan that has teachers, parents, and administrators on it. In high schools we have students on it. I mention to them what I think our goals should be, and part of our goal was to improve the school technologically and that was part of it as well. (P6, p. 5)

Providing resources. Principals were found to provide teachers with technology and materials to support teaching state standards. Two principals and

two teachers identified this strategy. One teacher explained that the main change in his instruction was gearing his lessons around state standards. He credited his school's administration with providing resources from the state department of education to support this effort (T2, p.2). Support by the principal in purchasing materials was crucial for one teacher who stated:

He does things like this year he and the superintendent got me a Smartboard which I have in my classroom. They are real good at utilizing technology and helping me buy the supplies that I need. (T6, p. 3)

One principal felt that she promoted collegiality among teachers, such as sharing lessons and assessments and by sending materials through electronic devices (P8 p. 2). Another principal wanted teachers to use Inspiration, educational software that creates graphic organizers, so he purchased this for teachers if they agreed to use it (P9, p.3).

Supervising instruction. One principal felt that he promoted the sharing of classroom management strategies by having teachers observe two other teachers, one in their content area and one outside of it. When asked if teachers had shared instructional practices, he stated that it was more sharing of classroom management strategies (P2, pp. 2-3).

The principal's use of instructional conferences motivated one teacher to improve. She did not mention any change in instructional practices. The teacher stated:

When we got a new principal last year, he took over as my evaluator. His approach is a bit different, so he would come in and observe my class and

instead of telling you what he thought, he would always ask what you think. I am very critical of myself. Just the fact that he even gave me the time to say, “Oh man all of these things went wrong was really good for me”. I am pretty sure from what I know about him evaluating other people, if I had not pointed all of them out myself, I think I was just saving him time, because if I hadn’t said it, then he would have said all of those things. That is really good because there was more of an incentive. (T8, p. 5-6)

Providing incentives. Incentives were mentioned by two people as encouraging change in the classroom. As stated earlier, one teacher was motivated to change by the principal’s approach to instructional conferences, although no specific instructional strategy was mentioned by the teacher (T8, pp.5-6). One principal felt that he motivated teachers to make changes in technology through promising a new computer. The principal stated:

And then there are times, it has been subtle, where I say, “Hey I want to make a transition to an electronic grade book, do I have any volunteers.” With the seven or eight volunteers I told them that I was going to get them a new computer for volunteering. The next year I pushed everyone onto it, but I had seven or eight coaches now. I had seven or eight people who were saying, “Hey this is great. This is what it did for my efficiency and my time”. (P9, p. 3)

Support. One teacher felt the support of her principal was crucial in implementing more inquiry-based lessons. She explained:

My principal has been absolutely wonderful with my change towards inquiry-based lessons. He understands what I want to do with it. He understands the

backing, the support that I need. (T6, p.2)

Issuing directives. Two principals felt they influenced changes in teachers by giving directives. Teachers in one principal's school district concentrated on differentiating instruction. The principal attributed this change to directives given by central office and building administrators on differentiating instruction (P8, pp.1-2). State standards motivated one principal to make changes in how teachers assess students. He explained:

So what we have done recently is I have introduced a way of assessing students every three weeks on student performance on content we call proficiency checks, but essentially what it amounts to is the content that we know will be tested in the testing system somewhere, sometime. (P7, p.2)

Other Influences on Change in Teachers' Instructional Practices

There were 15 categories of other influences on teachers. These were: (a) collegiality among teachers, (b) state and national policies, (c) professional development, (d) students, (e) central office staff, (f) graduate work, (g) experience, (h) outside influences, (i) school improvement plan, (j) literacy coach, (k) personal beliefs, (l) assistant principal, (m) department head, (n) technology resource teacher, and (o) family members.

Collegiality among teachers. Collegiality among teachers was the most common influence found. Eight teachers and five principals discussed the influence of other teachers on change in their instructional practices. It took two forms: (a) teacher delivery of staff development activities and (b) sharing of instructional strategies and materials.

Teachers provided professional development for other teachers. When asked why teachers were focusing on differentiation, one principal said that teachers were responsible for the change. Teachers set this as a goal during a summer faculty meeting (P3, p.3). Four principals felt that teachers initiating staff development opportunities influenced change. The focus of one school district was Incorporating reading across all curriculums. To help teachers with this change, the principal explained:

We have also utilized our own personnel here at school. We have a reading coach that is outstanding, who does many trainings with teachers. We have also identified faculty members with certain strengths that have also inserviced teachers so we have used a variety of trainers. (P4, p.2)

Eight teachers stated that sharing instructional strategies and materials with other teachers influenced them to change. One teacher stated:

Of the people that teach the EOG, History and Civics are EOG classes, we really do a good job of sharing information on different things to prepare students for the tests. We share stuff we found off the internet, maps we use, different projects we use; we just do a good job of sharing with each other.

(T5, p.2)

Teachers shared several instructional strategies with colleagues. These included technology, inquiry-based lessons, science labs, review games, writing strategies, and cooperative learning activities. One teacher explained:

We have compiled this huge three-ring binder in our teacher workroom with everyone's graphic organizer ideas and ones they have tried, so if you want

to go there you can get an idea. We also share websites to use. We also use Inspiration software to create graphic organizers. (T1, p.4)

State and national policies. State and national policies affected the instructional strategies of teachers. State standards and the No Child Left Behind Act were mentioned by eight principals and three teachers. Four principals said that teachers were concentrating more on meeting the needs of all students by differentiating instruction. When asked why teachers were differentiating instruction, one principal explained:

When you look at test results and NCLB, I am not a huge proponent of all of it, but there are pieces that are positive. ... We are looking at subgroups and how they are performing. That really glares for us [in] that our lower socioeconomic groups and minority groups are not performing near as well as white, middle to upper class kids. The NCLB Act really brought that home....
(P3, p. 1)

Three principals felt teachers changed assessments to better prepare students for state tests. Two principals and one teacher stated that teachers were concentrating on content included in state standards. The teacher explained:

So much of education is being geared towards standardized tests, I have had to keep up and make sure our kids are accountable and well-prepared. That is the biggest reason I have for the shift I have made in gearing my lessons more towards the SOL's. (T2, p. 2)

Three principals and two teachers stated that scores on state testing and data from these tests were influences. They discussed re-aligning curriculum,

implementing strategies to improve students' vocabulary, and efforts to remediate students. One teacher explained how they used data from state tests:

We have created something called proficiency checks and after we get through a unit or chapter, however we do it, we give them a set of questions which we basically know will be on the KAATS test given by the state department in the spring. This gives us some idea after we run the data. We do the scantrons, collect the data and do the number crunching. We then find out how many kids in our freshman class answered the question correctly about, for example, checks and balances or federalism. (T4, pp. 2-3)

Professional development. Four principals and four teachers asserted that professional development influenced change in teachers' instructional practices. Professional development was offered in different ways, including: inviting guest speakers in, attending national conferences, granting professional development days, collegiality among teachers, and through education on new technology programs such as Blackboard. Professional development was found to help teachers use technology, inquiry-based lessons, class projects, assessments, student-centered lessons, and vocabulary lessons. One teacher described what she learned at a national science convention:

I do a project that is basically a physics vector search. The students have to do vector math and then go around the school into different people's classrooms and try to find little clues that I have left them, if they have done the math right. (T6, p.4)

Students. Students had an effect on the strategies used by teachers. The influence came from an understanding of student learning, from feedback from a former student, and from an understanding of the importance of technology in the lives of students. Five teachers and five principals discussed students as an influence. Two teachers said that they had students doing presentations and in-class research because the students learned more from those methods. One teacher discussed how feedback from a former student in college changed how much content he taught in his math class:

That feedback has really changed, not the way I teach but, what I am teaching and the depth I go into it. That feedback from kids, who call me about what they struggle with in university and college math and science classes, I can tailor my instructional methodology on those concepts differently. (T3, p.6)

Technology was the most common theme. Eight people felt that teachers were incorporating technology because of students, and their comments were similar. They felt that teachers were incorporating technology because students' lives revolved around it, and students were more attentive to lessons that utilize technology. One teacher explained:

I teach ninth graders and one of my big focuses is to get them to enjoy reading. I found by doing the collaboration, it is a webpage called Goodread, which is kind of like Myspace or Facebook, and they all set up a profile and connect with everyone in the class as their friends. It has encouraged their reading. They see what other students read and what they like, and they are

able to communicate through a medium they are already familiar with through Facebook and Myspace. (T9, pp. 1-2)

Central office staff. Central office influenced teachers' instructional practices by providing technology resources, a vision, policies, and instructional direction. Four principals and two teachers felt central office staff was an influence. One principal and one teacher cited central office as a source of technology for teachers. A principal explained:

In addition, our district does offer technological resources that you can receive through one of our district intranet portals so you can pull stuff off of it, therefore requiring the technology ability to do so. I think that teachers are adjusting their abilities accordingly to utilize some of those resources. (P5, p.2)

One principal cited curriculum renewal and an emphasis on concepts as changes experienced by teachers, and she attributed this to the assistant superintendent's vision (P8, p.4). A similar comment was made by a teacher who said that curriculum renewal was the vision of their former superintendent (T8, p.4). Most felt that school district policy influenced teachers to change. A teacher provided an example of this:

Our district has moved to a standardized curriculum. Within the last year, I have been required to use that [standardized curriculum] which has been a huge change to a lot of things. I am not sure how to address that, because those are not things that I have chosen to change. It's like, you will teach this lesson; so I do. (T8, p.1)

Graduate work. Pursuing a master's degree or taking graduate-level courses

influenced five teachers. Graduate work helped one teacher implement inquiry-based lessons and another teacher asserted that a graduate course taught her reading and writing strategies. Three teachers said they implemented technology in their classrooms that they learned from graduate work. When one teacher was asked what influenced him to use student-centered lessons, he commented:

While working on my master's in educational leadership, we had to do some action research, and I did mine on student-centered lessons. It made things so much better with student-centered instruction than the teacher dominating the class. (T4, p.1)

Experience. Experience was an influence on teachers implementing technology in their lessons. Three teachers felt that they learned how to use technology through their own efforts. One teacher stated:

A lot of it, too, has just been playing around with stuff, like playing around with that website and setting up the rubric and how to get them on it and figuring out the Smartboard and Senteo software. (T9, p.2)

Three principals felt that teachers were more accustomed to using technology because of their own experiences. Young teachers were specifically mentioned by two principals. One stated:

I think ... the younger teachers that are coming in are more affixed to utilizing technology. They grew up in that era, I shall say. (P5, p.2)

Outside influences. Three principals cited influences outside of school. One principal stated that teachers concentrated more on technology because of 21st Century Skills (P8, p.4), and one felt that teachers were embedding more reading

and writing due to working with the College Board (P4, p.2). One principal described how working in a union state influenced teachers:

I also think accountability. Teachers in our area are very well compensated for what they do, and I think there is a little bit of pressure and a lot of, “I come to work doing what I love, and I get paid really well for it, so I better be accountable for how my students perform.” (P1, p.3)

The National Board Certification process influenced change in one teacher. She stated:

Last year I went through the National Board Certification process, so I made a lot of changes because of that. It made me focus my teaching more on facilitating small group work and incorporating that more into my lesson planning because that was a weakness of mine. I didn't have the students working with each other. (T8, p.1)

School improvement plan. Three people felt that their school improvement plans influenced teachers to change. One principal stated that teachers were using Smartboards to support instruction. He explained that this was a part of their school improvement plan to help teachers with technology in the classroom (P6, p.5).

Another principal felt that teachers were using a new vocabulary strategy called L to J and graphic organizers because they bought into the school's improvement goals (P2, p.1). A teacher in this principal's school supported this by stating:

Another thing we have done as a district is that we have tried using graphic organizers a lot. That has been a school improvement process goal. We want kids to not only be able to do graphic organizers but be able to create their

own in their own settings when they are not instructed to do so. So, [we] try to incorporate more graphic organizers to touch the different types of learning styles that the kids have. (T1, p.2)

Literacy coach. Two principals mentioned the influence of a literacy coach. They felt that the literacy coach supported teachers by providing them with strategies on how to teach reading. One principal stated:

Literacy is a big focus for us, and the literacy coach has helped us generate ideas, and now we are starting to share other ideas. Social Studies has started to share with the math department and English sharing with science and working out projects together, so we are really growing in those areas. (P3, p.4)

Personal beliefs of teachers. Five teachers and one principal felt that personal beliefs influenced change. The principal felt teachers changed instructional practices because of their desire to help all kids (P1, p.3). Teachers gave reasons such as believing certain instructional practices were more engaging or were better learning tools. One teacher stated that she implemented cooperative learning because she believed it was the direction education was taking at the present time (T7, pp.1-2).

Another teacher stated:

I am a science teacher, and as far as the sciences go, it is better for students to have a more interactive approach with science. They tend to understand the concepts better. They retain it for a longer period of time.... (T6, p. 1)

Assistant principal. An assistant principal encouraged change in one teacher by providing resources to support instruction. The teacher explained:

We have an assistant principal who sends out information from sources like *National Geographic*, *U.S. News and World Report*, and *Wall Street Journal* which contains the stock market game. (T5, p.4)

Departmental chair. One teacher said he discussed teaching methods with his departmental chair, and he received instructional resources from him. He described how this influenced his teaching:

Actually it is something called TIA Interactive. What it does is that it actually hooks up to your S Video of your TV so instead of me stopping my lecture and getting an overhead to hook the calculator up to, now the calculator is a permanent part of my lecture. All I have to do is turn on my TV and there it is. I can walk around the classroom and the kids can actually use it because it has a 50 foot extension cord so I can hand them the calculator and tell them to show me what they have.... (T3, p.2)

Technology resource teacher. One teacher discussed the influence of a Technology Resource Teacher (TRT). She stated:

We hired a full-time TRT at our school. This person has helped me learn better how to use technology in the classroom, and a lot of it has just been trial and error on my own. Figuring out what works and does not work. I would say the graduate courses and the TRT have had the most influence on my use of technology. (T2, p.1)

Family members. Cooperative learning was a change experienced by one teacher. When asked what person influenced this change, the teacher explained:

You may find this a little funny, but my initial ideas came from my own daughter. I have a daughter that is entering her senior year of college and is going into education. Just talking with her about different practices and talking about different philosophies that are currently being introduced to them. She said to me that it is something that needs to be looked at. You really need to think about and alter your lessons to allow for more engagement by students. (T7, p.2)

Summary of Results from the Qualitative Study

Data collected from interviews supported all parts of the theory except building and classroom structural features. The principal was found as an influence on teachers' instructional practices, and other variables were found as influences on teachers.

Eight principals mentioned their own actions as an influence on teachers. They engaged in several leadership strategies they believed influenced teachers in their schools. These strategies included: (a) communicating goals, (b) issuing directives, (c) promoting professional development, (d) providing incentives, (e) providing resources, (f) providing support, and (g) supervising instruction. Issuing directives and providing support were found in the data, but not included in the initial theory.

Four teachers mentioned the principal as an influence. All five leadership strategies contained in the theory were found as an influence. Two teachers stated that their principal's provision of resources influenced change. Communicating goals, supervising instruction, and providing incentives were mentioned by one

teacher each. In the theory promoting professional development was the most common strategy used by principals. Results partially supported this aspect of the theory. Four principals explained how they promoted professional development, but no teacher mentioned the principal promoting professional development.

There were 15 other influences on change in teachers' instructional practices. Building and classroom structural features was the only variable included in the theory not found in the study. Collegiality among teachers was the largest influence. Eight teachers and five principals stated that colleagues influenced teachers to change instructional practices. Teachers reported that colleagues affected their teaching more than any other variable.

There were several influences found in the data that were not included in the theory. They were: (a) students, (b) central office staff, (c) outside influences, (d) school improvement plan, (e) literacy coach, (f) assistant principal, (g) technology resource teacher, and (h) family members. Among these, students and central office staff were mentioned more frequently than others. Students were mentioned by ten people and central office staff by six people. The school improvement plan and outside influences were reported by three people. Two people identified a literacy coach as an influence. An assistant principal, technology resource teacher, and a teacher's daughter were mentioned by one teacher each.

Discussion of Results from the Qualitative Study

The overall research question was: What are the influences on change in teachers' instructional practices? The influence of principals was found to be an important factor in teacher instructional behavior in the literature; however, other

factors were acknowledged as well. Both factors were included in the theory, and both were supported by the interview data. One of the flaws in the theory that was brought out by the data was that the theory was not adequately specified. Variables had been omitted, either because literature was not found on them or they were not considered important enough to be included in the theory by the researcher. Thus, the interview data were quite valuable in both verifying the variables that had been identified and selected for the theory and in identifying variables that had been omitted and needed to be included. These additional variables have been added to the theory and appear in the diagram of a revised theory in Figure 2.

The total number of principals and teachers mentioning that principals influenced teachers was 12, with eleven of these individuals discussing changes in instructional practices. Four of the twelve discussing the principal were teachers. One of the teachers discussed the principal allowing him to reflect on his own strengths and weaknesses, but did not mention a change in instructional practices. Only one of the statements of influence mentioned by a principal was supported by a teacher's comment. On the face of it, this indicates that the influence of principals on the instructional practices of teachers, from the teachers' point of view, is limited. Principals may not have as much influence on what teachers do in their classrooms as thought to be the case by principals, their associations, and the field of educational leadership generally. However, this is a small sample, and the effect of the principal on teachers' instructional practices may not have been adequately detected. It is clear from these data that teachers' instructional practices are

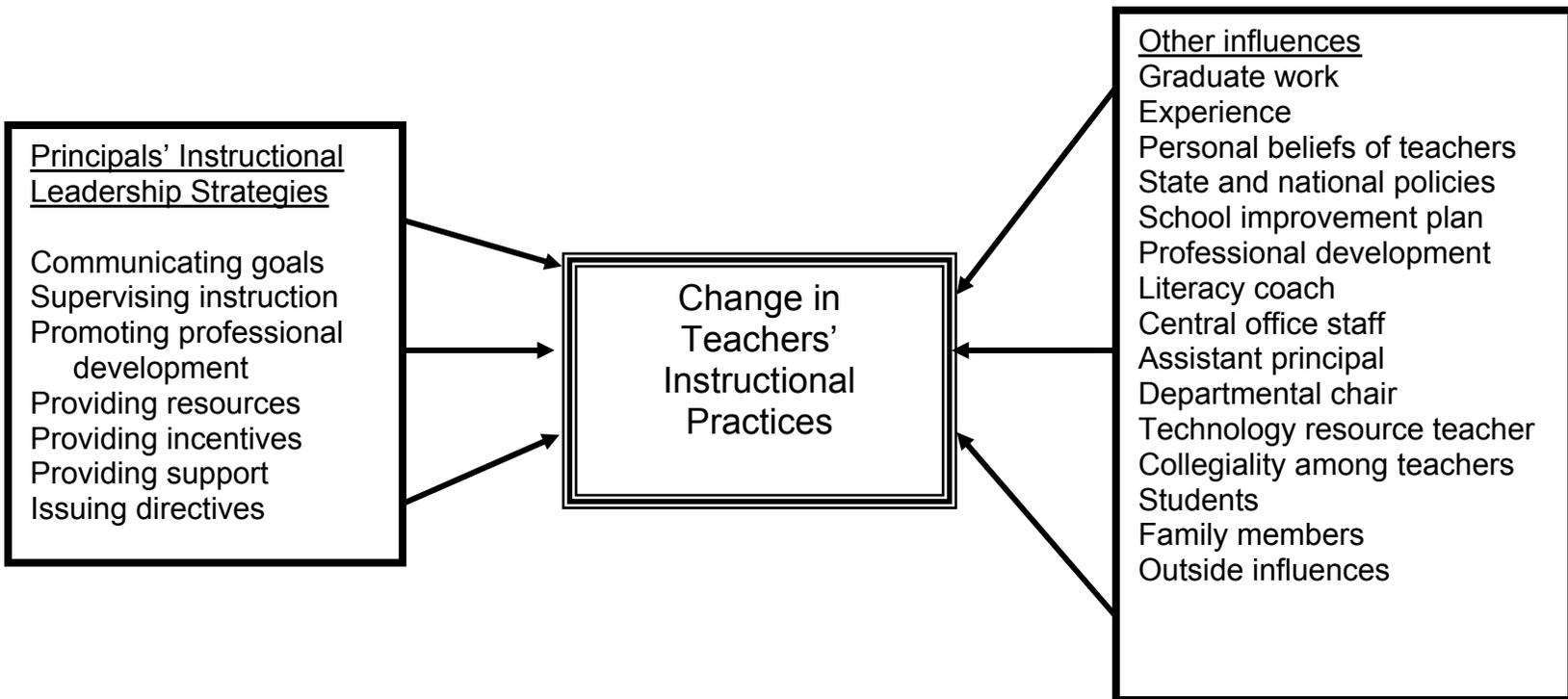


Figure 2. A revised theory of change in teacher instructional practices following the analysis of data from the qualitative portion of the study.

influenced by many different variables, most of which are outside the principal's control.

The researcher was surprised by the influence of students and graduate work. Ten people believed students were an influence. Only collegiality among teachers, the principal, and state and national policies were mentioned by more people. Five teachers described graduate work as an influence. Graduate work was included in the theory under teacher quality characteristics. Results were consistent with Superka's (1977) results in which teachers who had taken nine or more college credit hours in teaching social studies, used more innovative teaching practices than those with fewer than nine credit hours. The researcher did not anticipate the number of people identifying graduate work as an influence.

The initial theory of influences on teachers' instructional practices was revised to incorporate the findings in the qualitative study (see Figure 2). One variable was deleted from the theory: building and classroom structural features. The variable was not mentioned by the principals or teachers who participated in the interviews. Teacher quality was replaced with graduate work and experience. They were the only components of teacher quality found.

Two principal leadership strategies were added to the theory: providing support and issuing directives. Issuing directives was mentioned by two principals, and one teacher discussed support provided by her principal. The following other influences were added to the theory because they were mentioned by at least one participant: (a) central office staff, (b) outside influences, e.g., 21st Century Skills and the National Board Certification process (c) school improvement plan, (d) literacy coach, (e) assistant principal, (f) technology resource teacher, and (g) family members, e.g.,

daughter. The new theory guided the development of the questionnaire for the quantitative study.

Results of the Quantitative Part of the Study

The data from the questionnaire distributed to a random sample of teachers nationwide are presented in two parts. The first part is the descriptive data for the criterion and 22 predictor variables. This part includes means, standard deviations, minimums, maximums, frequencies, and percentages. Results from the regression of the criterion variable onto the predictor variables are presented in part two.

Descriptive Data for the Criterion and Predictor Variables

The sample had 1,412 teachers, but 144 emails were returned because they were recognized as junk mail or no longer in service (see Table 7). This left a sample of 1,268. Twenty-four percent (304 out of 1,268) of the sample returned useable responses. Descriptive data are presented for the criterion variable--the amount of change teachers' experienced in their instructional practices during the 2006-2007 and 2007-2008 school years-- and the predictor variables before and after a principal components analysis. Detailed data on each item in the questionnaire are in Appendix V.

Descriptive Data for the Criterion Variable

The criterion variable was measured with 23 items on the questionnaire—items 8-31. Each item was an instructional practice, and participants were asked the level of change they experienced with the practice during the 2006-2007 and 2007-2008 school years (see Appendix V). The scale was: -2 = much decrease in the use of the strategy, -1 = some decrease in the use of the strategy, 0 = no change in the use of the strategy,

1 = some increase in the use of the strategy, 2 = much increase in the use of the strategy, and 9 = have not used the strategy (strategy and practice are used interchangeably throughout the study).

Mean change across all of the strategies was the measure of interest in testing the underlying theory in the study. This was the average absolute change across all instructional strategies, regardless of the direction of change, for each respondent. The scale was recoded for mean change by converting all negative values to positive values. The scale was changed to: 0 = no change in use of the strategy, 1 = some change in use of the strategy, 2 = much change in use of the strategy (see Table 19). Values of nine were not recoded. They were included with missing items, because nine indicated no use of the strategy. The researcher did not analyze data for positive and negative values. Amount of change, whether positive or negative, was the primary interest in this study.

Scores on mean change ranged from the lowest, .08, to the highest, 2.00 (see Table 19). The highest percentage of respondents (158 of 304, 52%), had a mean change of .51 to 1.00. This indicates that respondents experienced no change to some change in their instructional practices. The lowest percentage of respondents (25 of 304, 8%) had mean change scores between 1.51 and 2.00, indicating that few experienced a high level of change. Mean change data showed that respondents, overall, did not experience a high level of change in their instructional practices ($M=.87$). This validates findings in the qualitative study. In the qualitative study, 14 out of 18 respondents stated they incorporated 1 or 2 new strategies during the previous two

Table 19

Mean Change for Criterion Variables

Amount of absolute change in instructional practices	Frequency	%
.00-.50	52	17
.51-1.00	158	52
1.01-1.50	69	23
1.51-2.00	25	8
Total	304	100

Note. The original scale was: -2 = much decrease in the use of the strategy, -1 = some decrease in the use of the strategy, 0 = no change in the use of the strategy, 1 = some increase in the use of the strategy, 2 = much increase in the use of the strategy, and 9 = have not used the strategy. The scores were recoded for data analysis to: 0 = no change in the use of the strategy, 1 = some change in the use of the strategy, 2 = much change in the use of the strategy.

school years. One teacher stated that they never taught the same way each year, indicating a high level of change for that teacher.

Discussion of the descriptive data for the criterion variable. Respondents indicated their level of change for 23 instructional practices (see Appendix V). Incorporating the Internet in the classroom (much decrease in use of the strategy=3%, some decrease in use of the strategy=0.7%, no change in use of the strategy=16%, some increase in use of the strategy=52%, much increase in use of the strategy=23%) had the highest level of change. Eighty-three percent of respondents (241 of 290, 14 of 304 missing or did not use strategy) experienced change with this strategy. Use of computers (much decrease in use of the strategy=3%, some decrease in use of the strategy=4%, no change in use of the strategy=19%, some increase in use of the strategy=43%, much increase in use of the strategy=28%) had the second highest level of change, with 81% of respondents (237 of 294, 10 of 304 missing or did not use strategy) stating they experienced change with this strategy. This validated results from the qualitative study. Incorporating more technology was the most common category of change in the qualitative study.

Strategies addressing different learning styles had the third highest amount of change (much decrease in use of the strategy=1%, some decrease in use of the strategy=1%, no change in use of the strategy=19%, some increase in use of the strategy= 54%, much increase in use of the strategy= 24%). Eighty percent of respondents (242 of 302, 2 of 304 did not use the strategy) experienced change with this strategy. This strategy was mentioned by only one teacher in the qualitative study, which surprised the researcher. Results from the questionnaire confirmed the

researcher's belief, based on experience, that teachers are concentrating more on using strategies to address different learning styles.

Descriptive Data for the Predictor Variables

Descriptive data for the predictor variables (see Appendix V) are organized into four parts: (a) Descriptive data for items in the questionnaire, (b) descriptive data for the background variables before and following recoding, (c) descriptive data for the scaled predictor variables before the principal components analysis, and (d) descriptive data for the scaled predictor variables after the principal components analysis. This is followed by a discussion of the descriptive data for the predictor variables.

Descriptive data for items within the predictor variables. Items 32-141 on the questionnaire contained questions on influences on change in teachers' instructional practices. Descriptive statistics included frequencies, percentages, means, and standard deviations for each item (see Appendix V). Because of the large number of items, single items are not discussed. Summary statistics are provided for the variables derived from the items later in this chapter.

Descriptive data for the background variables before and following recoding. Descriptive data for background variables, items 1-7 on the questionnaire, were run (see Table 20). The number and percentage of respondents were compiled for each category of each variable. There were more females (58%) than males (41%) in this sample. Out of the four groups for experience, the largest percentage of teachers (42%) had the least amount of experience, 1-10 years of experience. A large number of teachers had advanced degrees: (a) 57% had a Masters degree, (b) 3% had an EdS/CAS degree, and (c) 3% had a Doctoral degree. Few teachers in this sample

Table 20
Frequencies and Percentages for Categories of Background Variables before Recoding

Variable	N	%
Gender		
Male	126	41.4
Female	175	57.6
Missing	3	1.0
Total	304	100.0
Years of experience		
1-10	127	42.0
11-20	98	32.2
21-30	42	14.0
31+	33	11.0
Missing	4	1.0
Total	304	100.0
Highest degree		
Bachelors	112	36.8
Masters	173	56.9
EdS/CAS	10	3.3
Doctoral	9	3.0
Missing	0	0.0
Total	304	100.0
Teacher preparation		
Alternative	64	21.1
Traditional	234	77.0
Missing	6	2.0
Total	304	100.0
Teaching area		
Non-core subjects	96	31.6
Core subjects	181	59.5
Core and non-core subjects	27	8.9
Missing	0	0.0
Total	304	100.0

(table continues)

Table 20 (continued)

Variable	<i>N</i>	%
Endorsement		
Yes	292	96.1
No	7	2.3
Missing	5	1.6
Total	304	100.0
Certification		
No license/not sure	2	0.7
Provisional	20	6.6
Standard	149	49.0
Additional	129	42.4
Missing	4	1.3
Total	304	100.0

received their teacher training through alternative programs (21%). A majority (77%) were trained through traditional college preparation. Most teachers in this study were endorsed in their area(s) of teaching and fully certified. Ninety-six percent of teachers were endorsed and two percent were not. Seven percent of teachers were provisionally certified. Most had a standard certification (49%) or additional certifications (42%). Additional certifications refer to teachers who have more than one type of standard certification. The sample contained teachers from core and non-core areas. Most teachers in this sample (60%) were core teachers. Thirty-two percent taught non-core classes and nine percent taught a mixture of core and non-core classes.

Data were recoded for the regression analysis by combining categories in several of the demographic variables. Highest degree was reduced to two groups, Bachelors only (37%) and Masters, Eds/CAS or Doctoral (63%). Areas of teaching were combined into non-core subjects or core and non core subjects (40.5%) and core subjects only (59.5%). Certification became no license or provisional license (7%) and standard license or additional license (91%). Gender, teacher preparation, endorsement, and experience were not recoded (see Table 21).

Descriptive data for the scaled predictor variables before the principal components analysis. Data on the predictor variables prior to the principal components analysis are in Table 22. Means, standard deviations, minimum and maximum values, and rank based on mean are in this table. Most means for the predictor variables were in the *disagree to agree* range, (M between 2.17 and 2.99). Only three variables were outside of this range: collegiality among teachers ($M = 3.02$), students influence ($M = 3.12$), and experience influence ($M = 3.30$). These variables were in the *agree to*

Table 21
Frequencies and Percentages for Recoded Categories of Background Variables

Variable	N	%
Gender		
Male	126	41.4
Female	175	57.6
Missing	3	1.0
Total	304	100.0
Years of experience		
1-10	127	42.0
11-20	98	32.2
21-30	42	14.0
31+	33	11.0
Missing	4	1.0
Total	304	100.0
Highest degree		
Bachelors	112	37.0
Masters, EdS/CAS or Doctoral	192	63.0
Missing	0	0.0
Total	304	100.0
Teacher preparation		
Alternative	64	21.1
Traditional	234	77.0
Missing	6	2.0
Total	304	100.0
Teaching area		
Non-core subjects, core and non-core subjects	123	40.5
Core subjects	181	59.5
Missing	0	0.0
Total	304	100.0

(table continues)

Table 21 (continued)

Variable	<i>N</i>	%
Endorsement		
Yes	292	96.1
No	7	2.3
Missing	5	1.6
Total	304	100.0
Certification		
No license or provisional	22	7.2
Standard or additional	278	91.4
Missing	4	1.3
Total	304	100.0

Table 22
Descriptive Statistics for the Predictor Variables before the Principal Components Analysis

Predictor variable	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Rank</i>
Experience (experien)	304	3.30	0.37	2.40	4.00	1
Students (students)	303	3.12	0.36	2.20	4.00	2
Collegiality among teachers (collegia)	303	3.02	0.46	1.40	4.00	3
Outside influences (outside)	301	2.99	0.44	1.00	4.00	4.5
Professional development (profdeve)	301	2.99	0.48	1.20	4.00	4.5
Personal beliefs (persbeli)	302	2.93	0.35	1.50	4.00	6
School improvement plan (scimprov)	301	2.91	0.45	1.00	4.00	7
Promoting professional development (Ppd)	302	2.89	0.51	1.00	4.00	8 ¹
Communicating goals (comgoal)	301	2.86	0.52	1.00	4.00	9
Providing support (provsup)	301	2.85	0.53	1.20	4.00	10
Departmental chair (depchair)	301	2.84	0.71	1.00	4.00	11
Providing resources (prores)	303	2.80	0.54	1.20	4.00	12
Daughter and family members (family)	304	2.79	0.57	1.00	4.00	13.5
Providing incentives for teachers (proincen)	302	2.79	0.60	1.00	4.00	13.5
Graduate work (graduate)	299	2.76	0.64	1.00	4.00	15
Supervising instruction (supinst)	302	2.65	0.56	1.20	4.00	16
State and national policies (statenat)	301	2.60	0.51	1.00	4.00	17
Technology resource teacher (trt)	302	2.51	0.75	1.00	4.00	18
Assistant principal (ap)	298	2.46	0.65	1.00	4.00	19
Central office staff (centoffi)	303	2.38	0.48	1.00	3.60	20

(table continues)

Table 22 (continued)

Predictor variable	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Rank</i>
Literacy coach (literacy)	303	2.34	0.79	1.00	4.00	21
Issuing directives (issdirec)	303	2.17	0.49	1.00	4.00	22

Note. The means differ in this table from those in Table16 because of differing *Ns* due to calculations based on listwise deletions for missing data. Data in this table are based on the mean for all items within a scale. The response categories were: 1=Strongly Disagree, 2=Disagree, 3=Agree and 4=Strongly Agree. For definitions of the variables, see Table 10.

¹ Predictor variables are ranked by means. Highest mean = 1.

strongly agree range. Experience influence ($M=3.30$) had the highest mean and issuing directives ($M=2.17$) had the lowest mean.

The three influence variables with the highest means (experience, students, and collegiality among teachers) are related. Descriptive data indicate that the personal experiences of teachers, interactions with students, and collegial relationships with other teachers are what teachers think have the most influence on their instruction. These are variables that are “close” to the teacher and his or her daily work. Teachers interact with colleagues and students on a daily basis, and their experiences are always with them. All three variables were found as influences in the qualitative study, which supports these results. Collegial interactions among teachers was the most common influence found in the qualitative study.

The variables with the lowest means were issuing directives ($M=2.17$), literacy coach ($M=2.34$), and central office staff ($M=2.38$). These variables are more distant from the teacher. Issuing directives may have a low mean because teachers often have negative feelings when told what to do in the classroom. The mean for central office staff may be low because some teachers have the attitude that the central office is not aware of what happens in schools. Teachers often resist central office assistance and directives because of this attitude.

The mean for literacy coach may have been affected by a large number of missing ($N=37$) respondents. Only daughter and family members ($N=50$), graduate work ($N=44$), and technology resource teachers ($N=38$) had larger numbers of missing respondents. Respondents may not have had experience with these sources of potential influence on their instruction. Based on the researcher’s experiences,

technology resource teachers are a relatively new position in schools and not every school has a literacy coach. The mean for graduate work may have been influenced by some respondents who have not taken a graduate course, and the 50 missing for daughter and family members may have resulted from some respondents not having children.

Descriptive data for the scaled predictor variables after the principal components analysis. The principal components analysis reduced the number of predictor variables from 22 to 5 (see Table 23). Most means were in the *disagree* to *agree* range (M between 2.48 and 2.93) (see Table 23). Self/family/student influence had the highest mean and was the only variable in the *agree* to *strongly agree* range ($M=3.10$). The variable with the second highest mean is peer influence ($M=2.93$) and the variable with the third highest mean is external growth influence ($M=2.91$). The lowest means are administrative influence ($M=2.76$) and pressure influence ($M=2.48$). These results are similar to the ones mentioned in the descriptive data for predictor variables before the principal components analysis. The variables with the highest mean levels of influence-- peer influence (collegiality among teachers and departmental chair), self/family/student influence (students, family, experience, personal beliefs), and external growth influence (professional development, graduate work, outside influences) -- are closer to the teacher and his or her daily work. The further you move away from the teacher-- administrative influence (principal promoting professional development, principals providing resources, principal communicating goals, principal providing incentives,

Table 23

Descriptive Data for the Scaled Predictor Variables after the Principal Components Analysis

	<i>N</i>	<i>M</i>	<i>Min</i>	<i>Max</i>	Standard deviation
Mean change in instructional strategies	304	.87	0	2	.40
Administrative influence	304	2.76	1.23	3.86	.43
Pressure influence	304	2.48	1.43	3.73	.38
Peer influence	303	2.93	1.20	4.00	.52
Self/family/student influence	304	3.10	2.00	3.88	.33
External growth influence	303	2.91	1.53	4.00	.38

Notes: Mean change in instructional strategies was on a different scale than the other items. Scale was: 0 = no change in the use of the strategy, 1 = some change in the use of the strategy, 2 = much change in the use of the strategy. Scale for administrative influence, pressure influence, peer influence, self/family/student influence, and external growth influences was: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.

principal supervising instruction, principal providing support, and assistant principal) and pressure influence (issuing directives, state and national policies, central office staff, school improvement plan, literacy coach, and technology resource teacher)--the lower the level of influence.

A Discussion of the Descriptive Data for the Predictor Variables

The predictor variables are principal leadership strategies, other influences on change in teachers' instructional practices, and teacher demographic variables. The researcher theorized that these variables had an influence on change in teachers' instructional practices. There were 22 principal leadership and other influences, along with 7 demographic variables, before the principal components analysis. The principal components analysis reduced the 22 principal leadership strategies and other influences to 5.

Descriptive data prior to the principal components analysis indicated that teachers are most influenced by variables closest to themselves. Colleagues, the personal experiences of teachers, and their students had the largest influence on teachers' instruction. Teachers can decide who they have collegial interactions with, what they take from students, and how experience influences them. The variables with the lowest means were issuing directives, literacy coach, and central office staff. These are variables teachers have little control over.

Descriptive data after the principal components analysis had similarities to the above results. The variables with the highest mean levels of influence were the ones closest to teachers. Peer influence, external growth influence, and self/family/student

influence had the highest mean levels of influence. Pressure influences and administrative influence had the lowest level of influence.

Descriptive data for the predictor variables validated the results of the qualitative study. Nine teachers and nine principals were interviewed in the qualitative study. Collegiality among teachers was the most frequently mentioned variable. It was discussed by eight teachers and five principals. Students were discussed by five teachers and five principals, and experience was mentioned by three teachers and zero principals. The variables with the lowest means in the quantitative study were only reported by principals in the qualitative study. Central office staff was reported by one teacher. Issuing directives and literacy coach were mentioned only by principals.

Regression of the Criterion Variable on to the Predictor Variables

The purpose of the multiple regression analysis was to assess how well the predictor variables accounted for change in teachers' instructional practices. Three multiple regression analyses were run. The first two were exploratory analyses. In the first analysis, the amount of change reported by the teachers was regressed on administrative influence, pressure influence, peer influence, self/family/student influence, external growth influence, gender, degree, years of experience, endorsement, certification, teacher preparation, and areas of teaching (see Appendix W). In the second analysis, demographic variables that contributed little to the overall R^2 , that is demographic variables that were not statistically significant, were dropped from the analysis, and the amount of change was regressed on administrative influence, pressure influence, peer influence, self/family/student influence, external growth influence, and degree (see Appendix W). In the third analysis, the amount of change

was regressed on administrative influence, pressure influence, peer influence, self/family/student influence, and external growth influence, the primary predictors in the theory of teacher change in instructional strategies. Degree was dropped because it was not a significant contributor to the overall R^2 in the second analysis.

Results of the first analysis indicated that the predictor variables were significantly related to change in teachers' instructional practices, $R^2 = .16$, $F(12, 280) = 4.45$, $p = .00$ (see Appendix W). This indicates that 16% of the variance in the change in teachers' instructional practices can be explained by the predictor variables. Gender ($\beta = .04$), years of experience ($\beta = -.05$), teacher preparation ($\beta = .01$), areas of teaching ($\beta = -.04$), endorsement ($\beta = -.03$), and certification ($\beta = .00$) were dropped from the analysis. These variables did not contribute significantly to the variance in the change in teachers' practices. Administrative influence ($\beta = .00$), pressure influence ($\beta = .34$), peer influence ($\beta = -.01$), self/family/student influence ($\beta = .07$), external growth influence ($\beta = .11$), and degree ($\beta = .06$) were kept for the second regression analysis.

Results of the second analysis indicated that the predictor variables were significantly related to change in teachers' instructional practices, $R^2 = .15$, $F(6, 295) = 8.72$, $p = .00$ (see Appendix W). Degree ($\beta = .02$), was the only demographic variable included in this analysis. The variable was recoded from 0 = Bachelors and Masters, 1 = EdS/CAS and Doctoral to 0 = Bachelors only and 1 = Masters, EdS/CAS, and Doctoral. Degree was found to be not a significant contributor to the variance in the amount of change in teachers' instructional strategies and was dropped in the third analysis.

Results of the third and final analysis indicated that the predictor variables were significantly related to change in teachers' instructional practices, $R^2 = .15$, $F(5, 296) =$

10.46, $p = .00$ (see Tables 24 and 25 and Appendix W). The third regression analysis included: (a) administrative influence ($\beta = .00$), (b) pressure influence ($\beta = .34$), (c) peer influence ($\beta = -.02$), (d) self/family/student influence ($\beta = .06$), and (e) external growth influence ($\beta = .12$). Pressure influence ($t = 5.24$, $p = .00$) and external growth influence ($t = 2.06$, $p = .04$) were the only variables significantly related to change in teachers' instructional practices (see Table 26).

Correlations between the Criterion Variables and Predictor Variables

Pearson correlation coefficients were computed to analyze correlations between the criterion variable and predictor variables. Significant correlations were found between the criterion variable and four of the predictor variables: (a) administrative influence ($r = .21$, $p \leq .01$), (b) pressure influence ($r = .36$, $p \leq .01$), (c) peer influence ($r = .12$, $p \leq .05$), and (d) external growth influence ($r = .21$, $p \leq .01$). These correlations were significant, but weak. Pressure influence had the strongest significant correlation with change in teachers' instructional practices, and peer influence had the weakest significant correlation. Self/family/student influence ($r = .08$) was the only variable that did not have a significant correlation with the criterion variable (see Table 27).

Inter-correlations among the Predictor Variables and Multicollinearity

Inter-correlations among the predictor variables were assessed even though a principal components analysis was conducted to reduce collinearity among variables. The strongest significant correlation was between pressure influence and administrative

Table 24
Model Summary for the Third and Final Regression Analysis

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.39 ^a	.15	.14	.37

Note. Predictor variables: Administrative influence, pressure influence, peer influence, self/family/student influence, and external growth influence.

Table 25
Analysis of Variance for the Third and Final Regression Analysis

	Sum of squares	df	Mean square	F	p
Regression	7.33	5	1.47	10.46	.000 ^a
Residual	41.49	296	.140		
Total	48.82	301			

Note. ^a Predictor variables used in the ANOVA are administrative influence, pressure influence, peer influence, self/family/student influence, and external growth influence. The criterion variable was the amount of change in teachers' instructional practices.

Table 26

Regression Coefficients and Collinearity Statistics for the Regression of Change in Teachers' Instructional Practices on All Predictor Variables ($R^2 = .15$) for the Third and Final Regression Analysis

Predictor	Unstandardized coefficients		Standardized coefficients		Collinearity statistics		
	<i>b</i>	Std. error	Beta	<i>t</i>	<i>p</i>	Tolerance	VIF
(Constant)	-.57	.28		-2.08	.04		
Administrative influence	.00	.06	.00	.04	.97	.64	1.56
Pressure influence	.36	.07	.34	5.24	.00	.69	1.45
Peer influence	-.02	.05	-.02	-.37	.71	.80	1.25
Self/family/student Influence	.07	.07	.06	1.10	.27	.97	1.03
External growth influence	.13	.06	.12	2.06	.04	.88	1.14

Table 27

Pearson Correlation Matrix for the Third and Final Regression Analysis

Factors	Mean change of instructional strategies	Administrative influence	Pressure influence	Peer influence	Self/family/student influence	External growth influence
Mean change of instructional strategies						
Administrative influence	.21*					
Pressure influence	.36*	.53*				
Peer influence	.12**	.42*	.34*			
Self/family/student influence	.08	.06	-.00	-.00		
External growth influence	.21*	.27*	.26*	.20*	.17*	

Note. * $p \leq .01$, ** $p \leq .05$.

influence ($r=.53, p \leq .01$). The weakest significant correlation was between external growth influence and self/family/student influence ($r=.17, p \leq .01$).

Multicollinearity exists when there is high inter-correlation among predictor variables (Garson, 2009). This is a problem when one is trying to understand how several predictor variables individually impact a criterion variable (Motulsky, 2002). Multicollinearity exists if *VIF*'s (variance inflation factors) for predictor variables are higher than 10 and tolerances are less than .10. The highest *VIF* was 1.56 and the lowest tolerance was .64 when multicollinearity statistics were run to assess *VIF* and tolerance levels (see Table 26). Multicollinearity was not an issue in this study.

Summary of Multiple Regression Analysis

Two of the five predictor variables were significant. Pressure influence had the highest association with change in teachers' instructional practices ($\beta=.34$). Pressure influence included issuing directives, state and national policies, central office staff, school improvement plan, literacy coach, and technology resource teacher. External growth was the other significant variable ($\beta=.12$). This included professional development opportunities, graduate work, and outside influences.

CHAPTER 4

CONCLUSIONS, DISCUSSION, POST-STUDY THEORY, SUGGESTIONS FOR FURTHER RESEARCH, RECOMMENDATIONS FOR PRACTICE, LIMITATIONS OF STUDY, AND REFLECTIONS

The purpose of this study was to measure how high school principals influence change in teachers' instructional practices; however, other factors were expected to surface. A two-part study was conducted. The first was a qualitative study in which nine principals and nine teachers from across the country were interviewed over the telephone. A quantitative study was conducted for the second part. Results from the qualitative study were used to create a questionnaire that was distributed to a national sample of teachers. Conclusions, discussion of the findings, and a revised theory are presented. Suggestions for further research, recommendations for practice, limitations of the study, and reflections are included in this chapter.

Conclusions

The overall research question for the study was: What are the influences on change in teachers' instructional practices? There were two sub questions of interest: (a) How do principals influence change in teachers' instructional practices? (b) What are other influences on change in teachers' instructional practices? The researcher theorized that there were seven principal influences-- *promoting professional development, providing resources, communicating goals, providing incentives, supervising instruction, providing support, and issuing directives*--and fifteen other influences--*professional development, collegiality among teachers, state and national policies, students, central office staff, graduate work, experience, outside influences, school improvement plan, literacy coach, personal beliefs, assistant principal,*

departmental chair, technology resource teacher, and daughter and family members--on change in teachers' instructional practices.

The Influence of Principals on Change in Teachers' Instructional Practices

The main focus of this study was to see what influence principals had on change in teachers' instructional practices. Principals had a limited influence on change in teachers' instructional practices.

1. In the qualitative study, the researcher interviewed nine teachers and nine principals from across the country. Twelve out of eighteen respondents mentioned the principal as an influence. Eight of the twelve respondents were principals, and only one of their statements was supported by a teachers' comment. Four of the twelve discussing the principal were teachers. One of these teachers did not mention a change in teachers' instructional practices but was encouraged by the principal to engage in reflection on his own strengths and weaknesses.
2. In the quantitative descriptive analysis there were seven variables associated with the principal. Promoting professional development ($M=2.89$) had the highest mean of the 7 principal influence variables and was ranked 8 out of 22 when combined with the 15 other influence variables (see Table 22). Mean ranks of the other principal influence variables were: (a) communicating goals (9 of 22, $M=2.86$), (b) providing support (10 of 22, $M=2.85$), (c) providing resources (12 of 22, $M=2.80$), (d) providing incentives (13 of 22, $M=2.79$), (e) supervising instruction (16 of 22, $M=2.65$), and (f) issuing directives (22 of 22,

$M=2.17$). This indicates that from the perspective of teachers the influence of principals on teacher instruction is limited.

3. After a principal components analysis, the predictor variables were reduced to five and included *administrative influence, pressure influence, peer influence, self/family/student influence, and external growth influence*. In the regression analysis school-level administrative influence was not found to be a significant predictor of change in teachers' instructional practices. It did not account for any variance in change in teachers' instructional practices ($\beta=.00$).
4. Issuing directives was the only principal variable significantly related to change in teachers' instructional practices. It was included under pressure influence because it had a higher factor structure under pressure influence than administrative influence. Pressure influence was a significant influence on change in teachers' instructional practices ($\beta=.34$).

Other influences on Change in Teachers' Instructional Practices

Results of the study show that teachers are influenced by many variables, most of which are often outside the control of the principal.

1. In the qualitative study, collegiality among teachers was the most common influence found. It was reported by eight out of nine teachers. Personal beliefs, graduate work, and students were other variables that were each mentioned by five teachers. Results indicate that teachers are more influenced by variables that are closer to them such as their own beliefs, experiences, colleagues, and students.
2. Results of the quantitative descriptive analysis are similar to the qualitative

results. Experience ($M=3.30$) and students ($M=3.12$) had the largest influence on change, according to teachers in the study. Collegial interactions among teachers had the third highest mean ($M=3.02$) indicating that teachers felt strongly that this variable influenced their instruction. The qualitative and quantitative descriptive data indicate, that the closer the variable is to the teacher, the greater the apparent influence on change in teachers' instructional practices.

3. In the regression analysis, pressure influence ($\beta=.34$) and external growth influence ($\beta=.12$) were found to be the best predictors, given those included in this study, of change in teachers' instructional practices. Peer influence ($\beta=-.02$) and self/family/student influence ($\beta=.06$) had no effect in the regression of the criterion variable on the predictor variables.
4. The regression of the criterion variable--change in teachers' instructional practices--on the five predictor variables was statistically significant, $R^2 = .15$, $p = .00$ (see Tables 24, 25, and Appendix W), indicating that the combined variables do predict the amount of change in teachers' instructional practices. The predictor variables explained 15% of the total variance in change in teachers' instructional practices. Although statistically significant, the regression equation with the selected variables is not a very good predictor of change in teachers' instructional practices. There are other unidentified variables that account for 85% of the variance in the criterion variable.

Discussion

There is some ambiguity between results of the qualitative study and quantitative descriptive analysis, and the regression analysis. Collegial interactions among teachers, personal beliefs, graduate work, and students were the most common influences mentioned by participants in the qualitative study. Collegial interactions among teachers, teacher experience, and students had the largest influence on teachers according to the quantitative descriptive data. However, in the regression analysis when the overlapping variances of the predictor variables are accounted for, these variables did not have a unique effect on change in teachers' instructional practices. Collegial interactions among teachers was a component of peer influence, and teacher experience, personal beliefs, and students were components of self/family/student influence.

The only variables in the regression analysis with a significant effect--pressure influence and external growth influence--are relatively distant from teachers. In the descriptive data, variables under pressure influence had low means, indicating that they had little influence on teachers. Pressure influence had the strongest relationship in the regression analysis with teachers' change in instructional practices, and it is more distant from teachers than the other four variables.

The reason for this ambiguity is unclear and further work needs to be done on this. It may be the result of error in measurement, the way questions were asked, or the way teachers interpreted questions. Another possibility is that teachers are continually reminded of the standards, test results, pacing guides, and other aspects of national and state reforms. They may lose sight of the influences that are closer to them such as

students, colleagues, and personal experiences. The instrument measuring the predictor variables may have been sensitive enough to assess teachers' perceptions of the influence of reform pressures on their instructional behavior.

State and national policies are an example of this ambiguity. In the qualitative study no teacher mentioned state and national policies as influencing them, but four principals did. This may be the case because principals may feel the pressure of reform more quickly and more intensely than teachers. They are a little farther up the chain of command. In the quantitative descriptive analysis, the mean score for state and national policies ($M=2.60$) was ranked 17 out of 22. This indicated that state and national policies had less influence on teachers. In the regression analysis, state and national policies was one of the variables under pressure influences. Teachers may not feel that state and national policies have a large influence on them. However, when pressures are put on them, such as the principal discussing methods for raising test scores, teachers do comply and do implement these changes. Teachers may associate pressure to change with state and national policies instead of changes they willingly make, such as suggestions from colleagues.

One variable was found as having an influence in the qualitative study and quantitative regression analysis. Graduate work had an influence on five out of nine teachers interviewed in the qualitative study and was one of the variables under external growth influence in the quantitative study. The researcher did not expect graduate work to have such an influence in the qualitative study. Results of the quantitative regression analysis validate the influence of graduate work on change in teachers' instructional practices. Additional training of teachers goes hand-in-hand with

the pressures of the reform movement. Implementation of a reform agenda requires additional training of all involved.

There were seven background variables included in this study. These variables were gender ($\beta=.04$), degree ($\beta=.02$), teacher preparation ($\beta=.00$), years of experience ($\beta= -.05$), areas of teaching ($\beta= -.04$), endorsement ($\beta= -.01$), and certification ($\beta=-.01$). These variables were dropped after the first and second regression analyses because they did not contribute a statistically significant amount of variance to the change in teachers' instructional practices.

The researcher felt years of experience was more likely to have an influence on teachers than the other background variables. Based on the researcher's experience, it is a common assumption, probably best labeled a bias, among educators that young teachers are more willing to change and veteran teachers are more resistant to change. Results of this study do not support this assumption. One study in the literature supported the notion that experience makes teachers more innovative teachers (Superka, 1977). Nor was this supported by the results of the study. No relationship was found between years of experience and change in teachers' instructional practices.

The focus of this study was to measure how high school principals influence change in teachers' instructional practices. The literature (Blase & Blase, 1998; Blase & Roberts, 1994; Johnsen et al., 2002; King, 1991; Sheppard, 1996) indicated that principals have an influence on teachers' instructional practices. This was not fully supported by this study. In the qualitative study three out of nine teachers mentioned the principal as influencing change in their instructional practices. This indicates that the influence of the principal was limited. Only one principal variable, issuing directives,

showed any relationship with change in teachers' instructional practices, and it was not a unique relationship. Issuing directives was a component of pressure influence, one of the factors that emerged from the principal components analysis. Pressure influence was found to be statistically related to change in teachers' instructional practices in the regression analysis. The researcher believes this is due to teachers interacting with principals and conforming to pressures such as implementing instructional practices to help raise test scores. Issuing directives had the lowest mean ($M=2.17$) in the quantitative descriptive analysis indicating that teachers did not recognize its unique influence on change in their instructional practices. Issuing directives was discussed by two principals in the qualitative study but was not mentioned by a teacher as an influence.

The findings in the study surprised the researcher. Based on experience and the literature, the researcher thought that principals have a larger influence on teachers' instructional practices. The literature indicates that the amount of influence principals have on teachers may depend on the level--elementary or secondary (Cotton, 2003; Smith & Andrews, 1989). Kmetz and Willower (1982) found that elementary principals spent more time on instructional issues compared to secondary principals. The samples in both parts of this study included high school teachers and principals and no middle or elementary school teachers and principals. Results of the study raise continuing questions about the differences in the instructional leadership of principals at the elementary and secondary levels.

Post Study Theory

The researcher theorized that teachers made changes in their instruction based on influencing factors. The influencing factors were principal instructional leadership strategies and other influences. The pre-study theory in Chapter 1 included five principal instructional leadership strategies and seven other influences (see Figure 1). This theory was revised based on results from the qualitative study. The new theory included 7 principal instructional leadership strategies and 15 other influences (see Figure 2). A post-study theory was formed based on results from the multiple regression analysis. The new theory contains the variables that were significantly related to change in teachers' instructional practices (see Figure 3).

Recommendations for Future Research

The post-study theory suggests that teachers are influenced to change their instructional practices by pressure influences and external growth influences. The researcher believes that future research on this topic could improve this model. The amount of variance (15%) accounted for by the predictor variables on the criterion variable was not sufficient. Future researchers should try to identify other variables affecting change in teachers' instructional practices. Recommendations for future research include:

- Researching the influence of shared leadership situations. The researcher encountered research on this topic in the literature. A study could look at

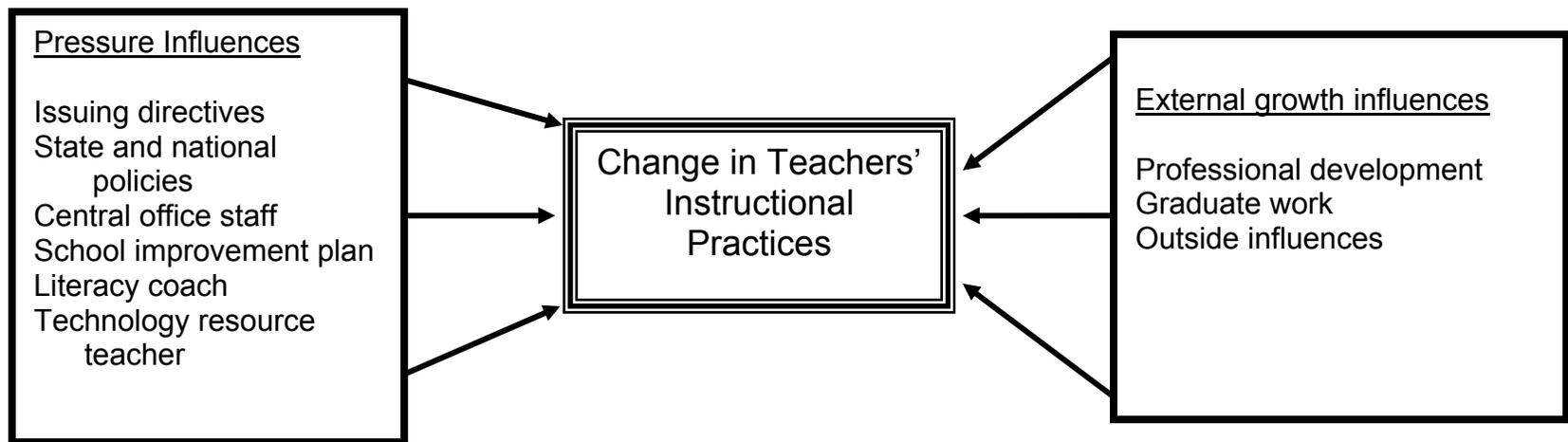


Figure 3. Post study theory of change in teacher instructional practices

the influence of principals sharing instructional leadership with teachers. This study investigated the instructional leadership of principals and discovered that principals had a limited influence. Results of study may indicate that the researcher did not capture what it means to be an instructional leader. There could be other leadership strategies, such as shared leadership, that could possibly affect teachers.

- More interviews were needed to get a better idea of what changes teachers were making. The researcher conducted interviews with nine principals and nine teachers in the qualitative study. These were brief interviews that asked a general question concerning change, “Think about the past two school years, what changes have teachers made in their instructional practices”. The measure of change in the quantitative study was self-reports from teachers on the questionnaire. More interviews with principals and central office supervisors may give future researchers a better picture of what changes teachers are making. Relying on self-reports from teachers may not be the best source for indicating the level of change experienced by teachers.
- Measurement of the predictor variables could have been improved. Two of the predictor variables, self/family/student influence (.38) and external growth influence (.47) were used in the regression analysis, despite Cronbach’s alpha coefficients that were below the acceptable range of .70. This may account for the combined variables in the

regression analysis accounting for just 15% of the variance in the criterion variable. This could be improved by adding items to lengthen the scales, improving items by rewording them, and more clearly defining variables used in the study.

- The researcher did not find the direct instructional influence of principals on teachers. Researching the indirect influences of principals on teachers may help understand what principals do that influence teacher instruction. Indirect influences include the principal's impact on school culture, the principal's handling of distractions such as disgruntled parents and student discipline, the principals ability to deal with the many things that can interrupt instructional time in the day to day operations of schools, and how principals handle the scheduling of teachers.

Implications for Practice

Results of the study show that the most significant influence on change in teachers' instructional practices was pressure influences followed by external growth influences. There was ambiguity between results of the qualitative study and quantitative descriptive analysis, and regression analysis. The regression picked up external, remote variables as major influences on teachers. The qualitative study and quantitative descriptive data picked up variables closer to the teacher as the major influences. This ambiguity may suggest that both factors are working. Teachers do respond to external pressures and outside influences. State and national policies are some of these influences. Results of the multiple regression

analysis indicate that emphasizing standards and putting pressure on teachers to perform does work, so school administrators need to keep focusing on these levers.

Principals were not found to have a direct influence in this study, rather an indirect influence through issuing directives. However, results indicate that there are things principals can do to influence teachers. Principals need to recognize that teachers are influenced by many factors close to them and outside of them. They can help teachers by giving teachers the time to work with colleagues through common planning periods or staff development. Principals can facilitate external growth by allowing teachers to participate in professional development and encouraging teachers to pursue graduate work.

This study indicates that teachers have a number of pressures (principal directives, state and national policies, central office staff, school improvement plan, literacy coach, and technology resource teacher) that influence them. It is important for principals to recognize these pressures and make sure that these are helping teachers, not causing a burden. Awareness of these pressures could help principals in their day to day interactions with teachers and understanding how any change from inside or outside of the school may affect teachers.

The results of this study show the complexities involved in being a high school principal. Principals are expected to be strong instructional leaders (Tucker, 2003; Wahlstrom & Louis, 2008), but as the results of this study show, teachers are often more influenced by variables outside of the control of the principal. Teachers in high schools specialize in the content they teach. Principals specialize in a content area, based on what they taught, but when they are supervising teachers from

different content areas, they are generalists. Strong principals know good instruction, regardless of the content being taught. However, teachers may not be as willing to listen to principals in regard to instructional practices that may be content specific. Teachers may rely on what they have learned from colleagues, departmental chairs, students, experience, or professional development for help with content specific strategies. This may help to explain why principals had a limited influence in this study.

Limitations of the study

There were several limitations with this study. The selected predictor variables only accounted for 15% of the variance in the dependent variable. Selection of predictor variables could be improved. The researcher thoroughly reviewed the research and found that these variables were the best that could be identified at the time as influences on change in teachers' instructional practices. Results indicate that there are obviously other variables that influence change in teachers' instructional practices that were not included in this study.

Reliability of the predictor variable scales could have been stronger. Two of the predictor variables, self/family/student influence (.38) and external growth influence (.47) were used in the regression analysis, despite Cronbach's alpha coefficients that were below the acceptable range of .70. This may account for the combined variables in the regression analysis accounting for just 15% of the variance in the criterion variable. Improving the reliability of the scales may help increase the percentage of variance in the dependent variable accounted for by the predictor variables.

Measurement of the criterion variable-- change in teachers' instructional practices—could be improved. The study relied on self-measures of change by teachers. The only exception to this was that principals were asked in the qualitative study how much change teachers had experienced in their instructional practices. Self- measurement of change may not be a reliable measure of change. This could be improved in future studies by getting an outside estimate of change. More interviews could be conducted with principals, and central office supervisors may be a good source of measuring change.

Reflections

The primary focus of this study was to investigate the influence principals have on change in teachers' instructional practices, with the understanding that other variables influence teacher instruction. I was surprised by the results of the study which revealed that the principal had a limited influence on instructional practices. Based on experience and a review of the literature, I maintain that principals have more of an influence on teachers than what the results indicate due to the limitations in measurement of this study.

Principals may have only an indirect influence through pressures such as issuing directives, as indicated by this study, but my experiences cause me to question this result. I vividly recall my principal directly influencing my instructional techniques through classroom observations and post-observation conferences. I pursued this topic for investigation because of my experiences in the classroom and the influence my principal had on me. While I consider the influence of my principal

to be profound, this direct instructional influence by the principal was not found in this study.

The results of this study will help principals in working with teachers' daily instructional methods. Results indicate that there are many forces that influence teachers, inside and outside of the school. Principals need to understand what these are and use them to their advantage to influence best instructional practices. This will certainly assist principals when looking at professional development opportunities, scheduling of teachers, and their day-to-day interactions with teachers.

As a high school assistant principal, I find the results of this study beneficial. I have often reflected when I enter a teacher's classroom what effect, if any, I have on a teacher's instructional methodology. This was an additional motivation for choosing this topic for investigation. It is common in the field of education and in the literature to hear that principals are expected to be the instructional leader of schools. On the surface it would appear that the results of my study counter this assertion. However, I believe this study indicates that future research needs to concentrate on exactly what it means to be an instructional leader.

It was my goal that the results of this study influence principals as instructional leaders and add to the understanding of what it means to be a leader of instruction. I am convinced that information collected in this study is useful in planning staff development opportunities for principals and in reconceptualizing the content of principal preparation programs. Results provide beneficial information for staff development on what influences teachers and how principals can use these

influences to their benefit. Principal preparation programs could use this information to explore what it means to be an instructional leader and the multifaceted nature of this role. However, more research needs to be done to clarify what actions principals engage in as instructional leaders that influence teacher instruction.

Results will help teachers in understanding what affects their behaviors in the classroom. Increased awareness of instructional influences may provide teachers with opportunities for growth. Students were found as an influence in the qualitative study and quantitative descriptive analysis. This may motivate teachers to consider student input and implement strategies beneficial to student learning. Teachers taking graduate courses or participating in professional development opportunities may be more cognizant of how students learn and its relationship to their classrooms. Results could also help teachers in understanding where the pressures (issuing directives, state and national policies, central office staff, school improvement plan, literacy coach, and technology resource teacher) they feel are coming from. An increased awareness of these pressures may allow teachers to manage them more efficiently.

I continue to hold the conviction the literature asserts that principals are an essential component of effective schools (Cotton, 2003; Goodwin, Cunningham, & Childress, 2003; Hallinger & Heck, 1996). This study contains a thorough review of the research, and data from a qualitative and quantitative study that included teachers and principals from across the country. The direct influence of principals on change in teachers' instructional practices was not captured by this study. However, this does not mean that principals do not influence instruction in schools. Principals

dictate school climate, foster professional atmospheres, and guide students, teachers, and the community at large through the multitude of demands that schools in this age of accountability face. This research provides a powerful glimpse into the multitude of facets involved in being a high school principal and provides information that is beneficial to best instructional practices for principals and teachers.

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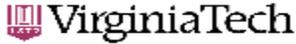
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APPENDIX A

IRB APPROVAL LETTER FOR QUALITATIVE STUDY

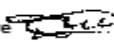


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www.irb.vt.edu
FWA/0000572 expires 1/20/2010
IRB # is IRB00000667

DATE: December 5, 2007

MEMORANDUM

TO: David J. Parks
Paul Lineburg

FROM: David M. Moore 

Approval date: 5/2/2007
Continuing Review Due Date: 4/17/2008
Expiration Date: 5/1/2008

SUBJECT: **IRB Amendment 2 Approval:** "School Leaders Influence on Instructional Strategies: Validation of Interview Guide Content", IRB # 08-280

This memo is regarding the above referenced protocol which was previously granted approval by the IRB on May 2, 2007. You subsequently requested permission to amend your IRB application. Since the requested amendment is nonsubstantive in nature, I, as Chair of the Virginia Tech Institutional Review Board, have granted approval for requested protocol amendment, effective as of December 5, 2007. The anniversary date will remain the same as the original approval date.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in previously approved human subject research activities to the IRB, including changes to your study forms, procedures and investigators, regardless of how minor. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.
2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.
3. Report promptly to the IRB of the study's closing (i.e., data collecting and data analysis complete at Virginia Tech). If the study is to continue past the expiration date (listed above), investigators must submit a request for continuing review prior to the continuing review due date (listed above). It is the researcher's responsibility to obtain re-approval from the IRB before the study's expiration date.
4. If re-approval is not obtained (unless the study has been reported to the IRB as closed) prior to the expiration date, all activities involving human subjects and data analysis must cease immediately, except where necessary to eliminate apparent immediate hazards to the subjects.

cc: File

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APPENDIX B

EQUIVALENCE OF INTERVIEW PROTOCOL QUESTIONS

<u>Principals' protocol</u>	<u>Teachers' protocol</u>
<hr/> <p>General questions</p> <hr/>	
1. Think about this past year or two, what changes have teachers in your school made in their teaching?	1. Think about this past year or two, what changes have you made in your teaching?
2. Let's look at the change made by Teacher [A]. [B]. [etc.]. Tell me why you think that Teacher A made that change. Do the same for all examples provided by the interviewee.	2. Let's look at the change you made in [A]. [B]. [etc.]. Tell me why you made that change (ask this for each change mentioned).
3. Were other people involved in helping Teacher A with this change? If so, who were these people (by position only)? Please describe their involvement as you understand it.	3. Were other people involved in helping you with this change? If so, who were these people (by position only)? Please describe their involvement.
4. Can you identify anything else that may have affected how teachers changed their instructional practices this year?	4. Can you identify anything else that may have affected the instructional practices you have used?

Principals' protocol

Teachers' protocol

Potential Probes

5. Think about the past few weeks. What kind of interactions have you had with teachers in your school? (If the teacher mentions several, pick those regarding instruction, take one at a time, and ask the following for each:)
- Tell me about your interaction with the teacher about [A]. [B]. [etc.]
 - If no instructional interactions are mentioned, I will ask: When have you talked about instruction with teachers in your school?
 - If the principal provides information on conversations regarding instruction in b, then ask the principal to tell about each interaction.
6. Describe a typical school day for you. Pick a day recently and tell me what you did? (This question may be addressed in #2)
- If the principal mentions anything regarding visibility in the school, ask: What are you trying to accomplish by being visible in the school? [Probes: How do you think your visibility affects teachers? Learning? The school in general?] Do you interact with the teacher during formal and informal classroom visits? Tell me about these interactions. If not, do you find the teacher later to talk about the visit? If yes: What do you talk about?

5. Think about the past few weeks. What kind of interactions have you had with your principal? (If the teacher mentions several, pick those regarding instruction, take one at a time, and ask the following for each:)
- Tell me about your interaction with the principal about [A]. [B]. [etc.]
 - If no instructional interactions are mentioned, I will ask: Have you talked about instruction with your principal?
 - If teacher answers yes to b, then ask the teacher to tell about each interaction.
6. How often do you see your principal during the school day? Where?
- How does this affect the way you teach?

Principals' protocol

Teachers' protocol

Potential Probes

7. Tell me about goals that are unique to your school?
 - a. How did these get established?
 - b. How do you think they affect what teachers do in the classroom?

8. What types of support do teachers in your school receive?
 - a. Where does [Support A] [Support B] [etc.] come from?
 - b. How do you think this affects what teachers do in the classroom?

9. Tell me about professional development in your school?
 - a. Think about this past year, what were some of the professional development opportunities available to teachers?
 - b. If the principal mentions specific activities, ask: Where did [PD A] [PD B] [etc.] come from? Who provided these opportunities?
 - c. How have teachers used ideas from these activities in their classrooms? What are some examples of how teachers implemented ideas from these opportunities?

7. What goals are unique to your school?
 - a. How did these goals get established?
 - b. How do they affect what you do in the classroom?

8. Tell me about the support you receive as a teacher.
 - a. If they respond by saying they do not feel supported, probe with: Does this affect what you do in the classroom?
 - b. If they respond with yes, ask: In what ways do you receive support? What effect does [Support A] [Support B] [etc.] have on your job? If it is not clear where this support is coming from, ask: Where does this support come from?

9. What professional development have you participated in the past year or two?
 - a. Who provided you with this professional development opportunity?
 - b. What did you use from [PD A] [PD B] [PD C] in your classroom?
 - c. How did you use it?

Potential Probes

10. What are some of the major resources provided to teachers in your school to support instruction?
- Who provided [Resource A] [Resource B] [etc.]?
 - How have teachers used [Resource A] [Resource B] [etc.]?
 - What can you point to that would indicate that [Resource A] [Resource B] [etc.] affected what teachers did in these classrooms? What students learned?
11. Describe what you think motivates teachers in your school?
- If it is not clear where the motivation comes from, ask: Where does this motivation come from?
 - How does it affect teaching?
12. Tell me about the collegial relationships teachers in your school have with one another.
- What do you think they talk about?
 - Do you think they share instructional approaches with each other?
 - If yes, tell me about what approaches they have shared.
 - With whom did they share [Approach A] [Approach B] [etc.]?
 - Do you know if they used [Approach A] etc.?
 - For each approach, ask: With what results?

10. What resources have you been provided so far this school year? For each resource mentioned, probe with the following:
- Where did this resource come from?
 - How did you use this resource?
 - If teacher does not mention how this resource dealt with the classroom, ask: How did this resource affect what you do in the classroom?
11. What motivates you as a teacher?
- How does [Motivation A] [Motivation B] [etc.] affect what you do in the classroom?
 - If it is not clear where the motivation is coming from, ask: Where does this motivation come from?
 -
12. How have you interacted with colleagues lately?
- Have you shared some of your instructional approaches with them?
 - If yes, tell me about what approaches you have shared.
 - With whom did you share [Approach A] [Approach B] [etc.]?
 - Do you know if they used [Approach A] etc.?
 - For each approach, ask: With what results?

Principals' protocol

Teachers' protocol

Potential Probes

13. Describe the leadership of department chairs in your school?
- What do they talk about with teachers in their department?
 - If instruction is not mentioned, ask: Do you think they ever talk about teaching methods?
* If principal mentions instructional methods, go to c.
 - If yes, tell me about [Method A] [Method B] [etc.].
 - Did the teacher use [Method A] [Method B] [etc.]?
 - Were these methods successful?
14. Talk about the No Child Left Behind Act. State standards. (Ask these questions first for the No Child Left Behind Act, then ask the same ones for state standards).
- How do you think this affects the way teachers in your school teach?
15. How are classrooms in your school structured?
- Do you think it affects learning? If yes, how?
 - How about the way teachers teach?

13. How have you interacted recently with your department chair?
- What did you talk about?
 - If instruction is not mentioned, ask: When have you talked with your department head about teaching methods?
* If teacher responds with a time, go to c.
 - If yes, tell me about [Method A] [Method B] [etc.].
 - Did you use [Method A] [Method B] [etc.]?
 - Were these methods successful?
14. Talk about the No Child Left Behind Act. State standards. (Ask these questions first for the No Child Left Behind Act, then ask the same ones for state standards).
- How do you think this affects the way you teach?
15. How is your classroom structured?
- Do you think it affects learning?
 - If yes, how? How about the way you teach?

Principals' protocol

Teachers' protocol

Potential probes

16. Which one of the following best describes teachers in your school?
- a. They tend to use the same instructional practices each year.
 - b. They tend to incorporate one or two new instructional practices each year.
 - c. They tend to change how they teach a great deal each year.
 - d. They never teach the same way each year.

16. Which one of the following best describes you?
- a. I tend to use the same instructional practices each year.
 - b. I tend to incorporate one or two new instructional practices each year.
 - c. I tend to change how I teach a great deal each year.
 - d. I never teach the same way each year.

Background questions

17. How many years were you a teacher? What did you teach?
18. What was your major for your bachelor's degree?

17. How many years have you been teaching, including this year?
18. What was your major for your bachelor's degree?
-

Principals' protocol

Teachers' protocol

Background questions

19. Did you go through the traditional teacher education preparation program provided by a college or university? How about for leadership?

20. If the answer to #21 is no, ask: How did you get your teaching license? Your administrative license?

23. How many years have you been an administrator? Tell me about each administrative position you have held and for how long?

21. Do you have a master's or doctoral degree and if so in what area?

22. How many years have you been at this school?

19. Did you go through the traditional education preparation program provided by a college or university?

20. If the answer to #21 is no, ask: How did you get your teaching license?

21. Are you endorsed to teach each of the subjects you are assigned? (Refer to subjects teacher mentioned in question #1. Mention each one.)

22. What is your highest degree? What was your major?

23. How many years have you been at this school?

APPENDIX C

INITIAL INTERVIEW PROTOCOL FOR PRINCIPALS

Introduction: Hello, my name is Paul Lineburg, and I am a doctoral student at Virginia Tech. I would first like to thank you for participating in this interview. Before we begin, I will explain the purpose of my work and ask you for permission to use the information from our interview to assess the effectiveness of the questions in the protocol and my interview technique. This process is required by the Virginia Tech Institutional Review Board. This will take a few minutes. Please feel free to stop me at any point and to ask any questions that may arise. (Read the informed consent document and ask for consent.) Do you have any questions before we begin? You may refuse to answer any of the questions.

General Questions:

1. Think about this past year or two, what changes have you observed in teachers' instructional practices?
 - For principals with more than two years experience, ask, What changes have you observed in teachers' instructional practices this year? Two years ago? Three years ago?
2. Let's look at the change made by Teacher [A]. [B]. [etc.]. Tell me why you think that Teacher A made that change. Do the same for all examples provided by the interviewee.
3. Were other people involved in helping Teacher A with this change? If so, who were these people (by position only)? Please describe their involvement as you understand it.
4. If the principal is mentioned as a person who was involved in the change, follow up with: Tell me about your involvement with the change.
5. Can you identify anything else that may have affected how teachers changed their instructional practices this year?

6. Is there anything else you would like to say about how teachers have changed their instructional practices this year?

Potential Probes:

7. Think about the past few weeks. What kind of interactions have you had with teachers in your school? (If the teacher mentions several, pick those regarding instruction, take one at a time, and ask the following for each:)
 - a. Tell me about your interaction with the teacher about [A]. [B]. [etc.]
 - b. If no instructional interactions are mentioned, I will ask: When have you talked about instruction with teachers in your school?
 - c. If the principal answers yes to b, then ask the principal to tell about each interaction.
8. Describe a typical school day for you. Pick a day recently and tell me what you did? (This question may be addressed in #2)
 - a. If the principal mentions anything regarding visibility in the school, ask: What are you trying to accomplish by being visible in the school? [Probes: How do you think your visibility affects teachers? Learning? The school in general?] Do you interact with the teacher during formal and informal classroom visits? Tell me about these interactions. If not, do you find the teacher later to talk about the visit? If yes: What do you talk about?
9. Tell me about your school's goals.
 - a. How did these get established?
 - b. How do teachers get to know these goals?
 - c. How do you think they affect learning? How do you think these goals affect what teachers do in the classroom? The school in general?
10. What types of support do teachers in your school receive?
 - a. Where does [Support A] [Support B] [etc.] come from?
 - b. How does this affect the school? Learning?
 - c. How do you think this affects what teachers do in the classroom?
11. Tell me about professional development in your school?
 - a. Think about this past year, what were some of the professional development opportunities available to teachers?
 - b. If the principal mentions specific activities, ask: Where did [PD A] [PD B] [etc.] come from? Who provided these opportunities?
 - c. How have teachers used ideas from these activities in their classrooms? What are some examples of how teachers implemented ideas from these opportunities?
12. What are some of the major resources provided to teachers in your school to support instruction?

- a. Who provided [Resource A] [Resource B] [etc.]?
 - b. How have teachers used [Resource A] [Resource B] [etc.]?
 - c. What can you point to that would indicate that [Resource A] [Resource B] [etc.] affected what teachers did in their classrooms? What students learned?
13. Describe what you think motivates teachers in your school?
- a. If it is not clear where the motivation comes from, ask: Where does this motivation come from?
 - b. How does this motivation affect learning?
 - c. How does it affect teaching?
14. Tell me about the collegial relationships teachers in your school have with one another.
- a. What do you think they talk about?
 - b. Do you think they share instructional approaches with each other?
 - c. If yes, tell me about what approaches they have shared.
 - d. With whom did they share [Approach A] [Approach B] [etc.]?
 - e. Do you know if they used [Approach A] etc.?
 - f. For each approach, ask: With what results?
15. Describe the leadership of department chairs in your school?
- a. What do they talk about with teachers in their department?
 - b. If instruction is not mentioned, ask: Do you think they ever talk about teaching methods?
* If principal mentions instructional methods, go to c.
 - c. If yes, tell me about [Method A] [Method B] [etc.].
 - d. Did the teacher use [Method A] [Method B] [etc.]?
 - e. Were these methods successful?
16. Talk about the No Child Left Behind Act. State standards. (Ask these questions first for the No Child Left Behind Act, then ask the same ones for state standards).
- a. How do you think this affects teachers in your school? Learning? The school in general?
 - b. How about the way teachers teach?
17. How are classrooms in your school structured?
- a. Do you think it affects learning? If yes, how?
 - b. How about the way teachers teach?
18. Which one of the following best describes teachers in your school?
- a. They tend to use the same methods of instruction each year.
 - b. They tend to incorporate one or two new methods each year.
 - c. They tend to change how I teach a great deal each year.
 - d. They never teach the same way each year.

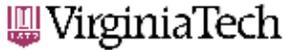
Background Questions: I am going to end the interview by asking you a few background questions so that I can become more familiar with you and your leadership.

19. How many years were you a teacher? What did you teach?
20. What was your major for your bachelor's degree?
21. Did you go through the traditional teacher education preparation program provided by a college or university? How about leadership?
22. If the answer to #21 is no, ask: How did you get your teaching license? Your administrative license?
23. How many years have you been an administrator? Tell me about each administrative position you have held and for how long?
24. Do you have a master's or doctoral degree and if so in what area?
25. How many years have you been at this school?

Thank you for taking the time out of your day to participate in my study. Your input will be a valuable part of my study

APPENDIX D

IRB APPROVAL LETTER FOR VALIDATING INTERVIEW PROTOCOLS



Office of Research Compliance
Institutional Review Board
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24061
540/231-4991 Fax 540/231-0959
e-mail moored@vt.edu
www.irb.vt.edu
PVA00000572 expires 1/20/2010
IRB # is IRB00000867

DATE: July 25, 2007

MEMORANDUM

TO: David J. Parks
Paul Lineburg

Approval date: 5/2/2007
Continuing Review Due Date: 4/17/2008
Expiration Date: 5/1/2008

FROM: David M. Moore 

SUBJECT: **IRB Amendment 1 Approval:** "School Leaders Influence on Instructional Strategies: Validation of Interview Guide Content", IRB # 08-280

This memo is regarding the above referenced protocol which was previously granted approval by the IRB on May 2, 2007. You subsequently requested permission to amend your IRB application. Since the requested amendment is nonsubstantive in nature, I, as Chair of the Virginia Tech Institutional Review Board, have granted approval for requested protocol amendment, effective as of July 25, 2007. The anniversary date will remain the same as the original approval date.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in previously approved human subject research activities to the IRB, including changes to your study forms, procedures and investigators, regardless of how minor. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.
2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.
3. Report promptly to the IRB of the study's closing (i.e., data collecting and data analysis complete at Virginia Tech). If the study is to continue past the expiration date (listed above), investigators must submit a request for continuing review prior to the continuing review due date (listed above). It is the researcher's responsibility to obtain re-approval from the IRB before the study's expiration date.
4. If re-approval is not obtained (unless the study has been reported to the IRB as closed) prior to the expiration date, all activities involving human subjects and data analysis must cease immediately, except where necessary to eliminate apparent immediate hazards to the subjects.

cc: File

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An equal opportunity, affirmative action institution

APPENDIX E

TESTING OF PRINCIPAL INTERVIEW PROTOCOL

I. General Items

Directions: Please rate each item for its clarity and ability to solicit influences on teacher classroom practices by using the criteria listed below.

- a. Place a 1, 2, or 3 in the column for **clarity** of the item.
 1. Unclear, drop the item
 2. Somewhat clear, but reword as suggested below
 3. Clear, leave as is

- b. Place a 1, 2, or 3 in the column for the **ability of the item to solicit influences on teacher classroom practices**.
 1. Misses the point, drop the item
 2. Some potential for soliciting influences on teacher classroom practices, reword as I have suggested below
 3. Good potential for soliciting influences on teacher classroom practices, leave as is

- c. If you feel an item needs to be reworded, place your recommendation in the column labeled "Recommended rewording."

Item	Clarity	Ability to solicit influences on teacher classroom practices	Recommended rewording
Q1. Think about this past year or two, what changes have you observed in teachers' instructional practices?			
Q2. Let's look at the change made by Teacher A. Tell me why you think that Teacher A made that change. Do the same for all examples provided by the interviewee.			
Q3: Were other people involved in helping Teacher A with this change? If so, who were these people (by position only)? Please describe their involvement as you understand it.			

Q4: Can you identify anything else that may have affected how teachers changed their instructional practices this year?			
Q5. Think about the past few weeks. What kind of interactions have you had with teachers in your school? (If the teacher mentions several, pick those regarding instruction, take one at a time, and ask the following for each:)			
Q5a. Tell me about your interaction with the teacher about [A]. [B]. [etc.]			
Q5b. If no instructional interactions are mentioned, I will ask: When have you talked about instruction with teachers in your school?			
Q5c. If the principal provides information on conversations regarding instruction in b, then ask the principal to tell about each interaction.			
Q6. Describe a typical school day for you. Pick a day recently and tell me what you did?			
Q6a. If the principal mentions anything regarding visibility in the school, ask: What are you trying to accomplish by being visible in the school? [Probes: How do you think your visibility affects teachers? Learning? The school in general?] Do you interact with the teacher during formal and informal classroom visits? Tell me about these interactions. If not, do you find the teacher later to talk about the visit? If yes: What do you talk about?			
Q7. Tell me about goals that are unique to your school?			
Q7a. How did these get established?			

Q7b. How do you think they affect what teachers do in the classroom?			
Q8. What types of support do teachers in your school receive?			
Q8a. Where does [Support A] [Support B] [etc.] come from?			
Q8b. How do you think this affects what teachers do in the classroom?			
Q9. Tell me about professional development in your school.			
Q9a. Think about this past year, what were some of the professional development opportunities available to teachers?			
Q9b. If the principal mentions specific activities, ask: Where did [PD A] [PD B] [etc.] come from? Who provided these opportunities?			
Q9c. How have teachers used ideas from these opportunities in their classrooms? What are some examples of how teachers implemented ideas from these opportunities?			
Q10. What are some of the major resources provided to teachers in your school to support instruction?			
Q10a. Who provided [Resource A]? [Resource B] [etc.]?			
Q10b. How have teachers used [Resource A] [Resource B] [etc.]?			
Q10c. What can you point to that would indicate that [Resource A] [Resource B] [etc.] affected what teachers did in their classrooms? What students learned?			
Q11. Describe what you think motivates teachers in your school?			
Q11a. If it is not clear where the motivation comes from, ask:			

Where does this motivation come from?			
Q11b. How does it affect teaching?			
Q12. Tell me about the collegial relationships teachers in your school have with one another.			
Q12a. What do you think they talk about?			
Q12b. Do you think they share instructional approaches with each other?			
Q12c. If yes, tell me about what approaches they have shared.			
Q12d. With whom did they share [Approach A] [Approach B] [etc.]?			
Q12e. Do you know if they used [Approach A] etc.?			
Q12f. For each approach, ask: With what results?			
Q13. Describe the leadership of department chairs in your school?			
Q13a. What do they talk about with teachers in their department?			
Q13b. If instruction is not mentioned, ask: Do you think they ever talk about teaching methods?			
Q13c. If yes, tell me about [Method A] [Method B] [etc.].			
Q13d. Did the teacher use [Method A] [Method B] [etc.]?			
Q13e. Were these methods successful?			
Q14. Talk about the No Child Left Behind Act. State standards. (Ask these questions first for the No Child Left Behind Act, and then ask the same ones for state standards).			
Q14a. How do you think this affects the way teachers in your school teach?			
Q15. How are classrooms in your school structured?			
Q15a. Do you think it affects learning? If yes, how?			

Q15b. How about the way teachers teach?			
Q16. Which one of the following best describes teachers in your school?			
Q16a. They tend to use the same instructional practices each year.			
Q16b. They tend to incorporate one or two new instructional practices each year.			
Q16c. They tend to change how they teach a great deal each year.			
Q16d. They never teach the same way each year.			

II. Interview Process Questions

Directions: Please provide feedback on the interview process I used by checking the appropriate response and providing an explanation for any item for which you responded “No.”

	Yes	No	Explanation
Q1. Did the interview allow you to openly discuss all questions?			
Q2. Were you given enough time to answer all questions?			
Q3. Were you provided enough information to understand this part of my study?			
Q4. Were you provided enough information to understand your role in my study?			
Q5. Was my explanation of Virginia Tech’s Internal Review Board procedures adequate for you to make an informed decision about participating in the study?			

APPENDIX F

REVISED AND FINAL INTERVIEW PROTOCOL FOR PRINCIPALS

Introduction: Hello, my name is Paul Lineburg, and I am a doctoral student at Virginia Tech. I would first like to thank you for participating in this interview. Before we begin, I will explain the purpose of my work and ask you for permission to use the information from our interview to assess the effectiveness of the questions in the protocol and my interview technique. This process is required by the Virginia Tech Institutional Review Board. This will take a few minutes. Please feel free to stop me at any point and to ask any questions that may arise. (Read the informed consent document and ask for consent.) Do you have any questions before we begin? You may refuse to answer any of the questions.

General Questions:

1. Think about this past year or two, what changes have teachers in your school made in their teaching?
2. Let's look at the change made by Teacher [A]. [B]. [etc.]. Tell me why you think that Teacher A made that change. Do the same for all examples provided by the interviewee.
3. Were other people involved in helping Teacher A with this change? If so, who were these people (by position only)? Please describe their involvement as you understand it.
4. Can you identify anything else that may have affected how teachers changed their instructional practices this year?

Potential Probes:

5. Think about the past few weeks. What kind of interactions have you had with teachers in your school? (If the principal mentions several, pick those regarding instruction, take one at a time, and ask the following for each:)
 - a. Tell me about your interaction with the teacher about [A]. [B]. [etc.]
 - b. If no instructional interactions are mentioned, I will ask: When have you talked about instruction with teachers in your school?

- c. If the principal provides information on conversations regarding instruction in b, then ask the principal to tell about each interaction.
6. Describe a typical school day for you. Pick a day recently and tell me what you did?
 - a. If the principal mentions anything regarding visibility in the school, ask: What are you trying to accomplish by being visible in the school? [Probes: How do you think your visibility affects teachers? Learning? The school in general?] Do you interact with the teacher during formal and informal classroom visits? Tell me about these interactions. If not, do you find the teacher later to talk about the visit? If yes: What do you talk about?
7. Tell me about goals that are unique to your school?
 - a. How did these get established?
 - b. How do you think they affect what teachers do in the classroom?
8. What types of support do teachers in your school receive?
 - a. Where does [Support A] [Support B] [etc.] come from?
 - b. How do you think this affects what teachers do in the classroom?
9. Tell me about professional development in your school?
 - a. Think about this past year, what were some of the professional development opportunities available to teachers?
 - b. If the principal mentions specific activities, ask: Where did [PD A] [PD B] [etc.] come from? Who provided these opportunities?
 - c. How have teachers used ideas from these activities in their classrooms? What are some examples of how teachers implemented ideas from these opportunities?
10. What are some of the major resources provided to teachers in your school to support instruction?
 - a. Who provided [Resource A] [Resource B] [etc.]?
 - b. How have teachers used [Resource A] [Resource B] [etc.]?
 - c. What can you point to that would indicate that [Resource A] [Resource B] [etc.] affected what teachers did in their classrooms? What students learned?
11. Describe what you think motivates teachers in your school?
 - a. If it is not clear where the motivation comes from, ask: Where does this motivation come from?
 - b. How does it affect teaching?
12. Tell me about the collegial relationships teachers in your school have with one another.
 - a. What do you think they talk about?

- b. Do you think they share instructional approaches with each other?
 - c. If yes, tell me about what approaches they have shared.
 - d. With whom did they share [Approach A] [Approach B] [etc.]?
 - e. Do you know if they used [Approach A] etc.?
 - f. For each approach, ask: With what results?
13. Describe the leadership of department chairs in your school?
- a. What do they talk about with teachers in their department?
 - b. If instruction is not mentioned, ask: Do you think they ever talk about teaching methods?
* If principal mentions instructional methods, go to c.
 - c. If yes, tell me about [Method A] [Method B] [etc.].
 - d. Did the teacher use [Method A] [Method B] [etc.]?
 - e. Were these methods successful?
14. Talk about the No Child Left Behind Act. State standards. (Ask these questions first for the No Child Left Behind Act, then ask the same ones for state standards).
- a. How do you think this affects the way teachers in your school teach?
15. How are classrooms in your school structured?
- a. Do you think it affects learning? If yes, how?
 - b. How about the way teachers teach?
16. Which one of the following best describes teachers in your school?
- a. They tend to use the same instructional practices each year.
 - b. They tend to incorporate one or two new instructional practices each year.
 - c. They tend to change how they teach a great deal each year.
 - d. They never teach the same way each year.

Background Questions: I am going to end the interview by asking you a few background questions so that I can become more familiar with you and your leadership.

- 17. How many years were you a teacher? What did you teach?
- 18. What was your major for your bachelor's degree?
- 19. Did you go through the traditional teacher education preparation program provided by a college or university? How about leadership?
- 20. If the answer to #19 is no, ask: How did you get your teaching license? Your administrative license?
- 21. How many years have you been an administrator? Tell me about each administrative position you have held and for how long?

22. Do you have a master's or doctoral degree and if so in what area?

23. How many years have you been at this school?

Thank you for taking the time out of your day to participate in my study. Your input will be a valuable part of my study.

APPENDIX G

EMAIL TO PRINCIPALS FOR QUALITATIVE STUDY PARTICIPATION

Date

Dear,

As you know so well, the instructional practices of teachers affect the performance of their students. Researchers are beginning to show how and why teachers alter those practices to become more effective instructors. This is the topic of a study we are conducting at Virginia Tech, and we would appreciate your assistance.

Our intent is to identify variables that affect teachers' instructional practices. Our findings could be useful in planning staff development for teachers and school leaders and in adjusting the content of teacher and principal preparation programs.

Your assistance would involve the following:

1. A 15 minute telephone interview at a time convenient to you.
2. The nomination of three teachers from your school (one would be selected to participate in a 15 minute phone interview at the teacher's convenience).

Schools and participants will not be identified in the report of the study. All information provided will be held in strict confidence.

Please let us know if you are able to participate by replying to this email. Your participation will be greatly appreciated.

Gratefully,

Paul N. Lineburg
Assistant High School Principal
Graduate Candidate
Virginia Tech
plinebur@vt.edu
(540) 562-3900 ext. 20004

David Parks, Professor
Virginia Tech
parks@vt.edu
(540) 231-9709

APPENDIX H

INITIAL INTERVIEW PROTOCOL FOR TEACHERS

Introduction: Hello, my name is Paul Lineburg, and I am a doctoral student at Virginia Tech. I would first like to thank you for participating in this interview. Before we begin, I will explain the purpose of my work and ask you for permission to use the information from our interview to assess the effectiveness of the questions in the protocol and my interview technique. This process is required by the VT Institutional Review Board. This will take a few minutes. Please feel free to stop me at any point and to ask any questions that may arise. (Read the informed consent document and ask for consent.) Do you have any questions before we begin? You may refuse to answer any of the questions.

General Questions:

1. Think about this past year or two, what changes have you made in your teaching?
 - For teachers with more than two years experience, ask: What changes have you made in your teaching this year? Two years ago? Three years ago?
2. Let's look at the change you made in [A]. [B]. [etc.]. Tell me why you made that change (ask this for each change mentioned).
3. Were other people involved in helping you with this change? If so, who were these people (by position only)? Please describe their involvement.
4. Where did you learn about this technique or method?
5. Can you identify anything else that may have affected the instructional practices you have used?
6. Is there anything else you would like to say about the changes you have made in the instructional practices you have used?

Potential Probes:

7. Think about the past few weeks. What kind of interactions have you had with your principal? (If the teacher mentions several, pick those regarding instruction, take one at a time, and ask the following for each:
 - a. Tell me about your interaction with the principal about [A]. [B]. [etc.]
 - b. If no instructional interactions are mentioned, I will ask: When have you talked about instruction with your principal?
 - c. If teacher answers yes to b, then ask the teacher to tell about each interaction.
8. How often do you see your principal during the school day? Where?
 - a. How do you think this affects the students? Learning? The school, in general?
 - b. If instruction is not mentioned in a, ask: How does this affect the way you teach?
9. What are your school's goals?
 - a. How did these goals get established?
 - b. How do they affect what you do in the classroom?
 - c. If the principal is not mentioned, ask: What does your principal have to do with these goals?
10. Tell me about the support you receive as a teacher.
 - a. If they respond by saying they do not feel supported, probe with: Does this affect what you do in the classroom?
 - b. If they respond with yes, ask: In what ways do you receive support? What effect does [Support A] [Support B] [etc.] have on your job? If it is not clear where this support is coming from, ask: Where does this support come from?
11. Tell me about professional development for teachers in your school.
 - a. Who decides what is offered through professional development?
 - b. Think about this past year, what were the topics that had an influence on you?
 - c. What did you use from [PD A] [PD B] [PD C] in your classroom?
 - d. Why did you use it?
 - e. Did you talk with your principal about using these ideas in your classroom?
 - f. What did the principal say or do?
12. What resources have you been provided so far this school year? For each resource mentioned, probe with the following:
 - a. Where did this resource come from?
 - b. How did you use this resource?

- c. If teacher does not mention how this resource dealt with the classroom, ask: How did this resource affect what you do in the classroom?
13. What motivates you as a teacher?
 - a. How does [Motivation A] [Motivation B] [etc.] affect what you do in the classroom?
 - b. If it is not clear where the motivation is coming from, ask: Where does this motivation come from?
 14. How have you interacted with colleagues lately?
 - a. What do you talk to your colleagues about?
 - b. Have you shared some of your instructional approaches with them?
 - c. If yes, tell me about what approaches you have shared.
 - d. With whom did you share [Approach A] [Approach B] [etc.]?
 - e. Do you know if they used [Approach A] etc.?
 - f. For each approach, ask: With what results?
 15. How have you interacted recently with your department chair?
 - a. What did you talk about?
 - b. If instruction is not mentioned, ask: When have you talked with your department head about teaching methods?
 - If teacher responds with a time, go to c.
 - c. If yes, tell me about [Method A] [Method B] [etc.].
 - d. Did you use [Method A] [Method B] [etc.]?
 - e. Were these methods successful?
 16. Talk about the No Child Left Behind Act. State standards. (Ask these questions first for the No Child Left Behind Act, then ask the same ones for state standards).
 - a. How do you think this affects your job as a teacher? Learning? The school in general?
 - b. How about the way you teach?
 17. How is your classroom structured?
 - a. Do you think it affects learning?
 - b. If yes, how? How about the way you teach?
 18. Which one of the following best describes you?
 - a. I tend to use the same methods of instruction each year.
 - b. I tend to incorporate one or two new methods each year.
 - c. I tend to change how I teach a great deal each year.
 - d. I never teach the same way each year.

Background Questions: I am going to end the interview by asking you a few background questions so that I can become more familiar with you and your teaching background.

19. How many years have you been teaching, including this year?
20. What was your major for your bachelor's degree?
21. Did you go through the traditional education preparation program provided by a college or university?
22. If the answer to #21 is no, ask: How did you get your teaching license?
23. Are you endorsed to teach each of the subjects you are assigned? (Refer to subjects teacher mentioned in question #1. Mention each one.)
24. What is your highest degree? What was your major?
25. How many years have you been at this school?

Thank you for taking the time out of your day to participate in my study. Your input will be a valuable part of my study.

APPENDIX I

TESTING OF TEACHER INTERVIEW PROTOCOL

I. General Items

Directions: Please rate each item for its clarity and ability to solicit influences on teacher classroom practices by using the criteria listed below.

- a. Place a 1, 2, or 3 in the column for **clarity** of the item.
 1. Unclear, drop the item
 2. Somewhat clear, but reword as suggested
 3. Clear, leave as is

- b. Place a 1, 2, or 3 in the column for the **ability of the item to solicit influences on teacher classroom practices**.
 1. Misses the point, drop the item
 2. Some potential for soliciting influences on teacher classroom practices, reword as suggested
 3. Good potential for soliciting influences on teacher classroom practices, leave as is

- c. If you feel an item needs to be reworded, place your recommendation in the column labeled "Recommended rewording."

Item	Clarity	Ability to solicit influences on teacher classroom practices	Recommended rewording
Q1. Think about this past year or two, what changes have you made in your teaching?			
Q2. Let's look at the change you made in [A]. [B]. [etc.]. Tell me why you made that change (ask this for each change mentioned).			
Q3: Were other people involved in helping you with this change? If so, who were these people (by position only)? Please describe their involvement.			
Q4: Can you identify anything else that may have affected the instructional practices you have			

used?			
Q5. Think about the past few weeks. What kind of interactions have you had with your principal? (If the teacher mentions several, pick those regarding instruction, take one at a time, and ask the following for each:)			
Q5a. Tell me about your interaction with the principal about [A]. [B]. [etc.]			
Q5b. If no instructional interactions are mentioned, I will ask: Have you talked about instruction with your principal?			
Q5c. If teacher answers yes to b, then ask the teacher to tell about each interaction.			
Q6. How often do you see your principal during the school day? Where?			
Q6a. How does this affect the way you teach?			
Q7. What goals are unique to your school?			
Q7a. How did these goals get established?			
Q7b. How do they affect what you do in the classroom?			
Q8. Tell me about the support you receive as a teacher.			
Q8a. If they respond by saying they do not feel supported, probe with: Does this affect what you do in the classroom?			
Q8b. If they respond by saying they do receive support, ask: In what ways do you receive support? What effect does [Support A] [Support B] [etc.] have on your job? If it is not clear where this support is coming from, ask: Where does this support come from?			
Q9. What professional			

development have you participated in the past year or two?			
Q9a. Who provided you with this professional development opportunity?			
Q9b. What did you use from [PD A] [PD B] [PD C] in your classroom?			
Q9c. How did you use it?			
Q10. What resources have you been provided so far this school year? For each resource mentioned, probe with the following:			
Q10a. Where did this resource come from?			
Q10b. How did you use this resource?			
Q10c. If teacher does not mention how this resource dealt with the classroom, ask: How did this resource affect what you do in the classroom?			
Q11. What motivates you as a teacher?			
Q11a. How does [Motivation A] [Motivation B] [etc.] affect what you do in the classroom?			
Q11b. If it is not clear where the motivation is coming from, ask: Where does this motivation come from?			
Q12. How have you interacted on a professional level with colleagues lately?			
Q12a. Have you shared some of your instructional approaches with them?			
Q12b. If yes, tell me about what approaches you have shared.			
Q12c. With whom did you share [Approach A] [Approach B] [etc.]?			
Q12d. Do you know if they used [Approach A] etc.?			

Q12e. For each approach, ask: With what results?			
Q13. How have you interacted recently with your department chair?			
Q13a. What did you talk about?			
Q13b. If instruction is not mentioned, ask: When have you talked with your department head about teaching methods?			
Q13c. Tell me about [Method A] [Method B] [etc.].			
Q13d. Did you use [Method A] [Method B] [etc.]?			
Q13e. Were these methods successful?			
Q14. Talk about the No Child Left Behind Act. State standards. (Ask these questions first for the No Child Left Behind Act, and then ask the same ones for state standards).			
Q14a. How do you think this affects the way you teach?			
Q15. How is your classroom structured?			
Q15a. Do you think it affects learning?			
Q15b. If yes, how? How about the way you teach?			
Q16. Which one of the following best describes you?			
Q16a. I tend to use the same instructional practices each year.			
Q16b. I tend to incorporate one or two new instructional practices each year.			
Q16c. I tend to change how I teach a great deal each year.			
Q16d. I never teach the same way each year.			

II. Interview Process Questions

Directions: Please provide some feedback on the interview process I used by checking the appropriate response and providing an explanation for any item for which you responded “No.”

	Yes	No	Explanation
Q1. Did the interview allow you to openly discuss all questions?			
Q2. Were you given enough time to answer all questions?			
Q3. Were you provided enough information to understand this part of my study?			
Q4. Were you provided enough information to understand your role in my study?			
Q5. Was my explanation of Virginia Tech’s Internal Review Board procedures adequate for you to make an informed decision about participating in the study?			

APPENDIX J

REVISED AND FINAL INTERVIEW PROTOCOL FOR TEACHERS

Introduction: Hello, my name is Paul Lineburg, and I am a doctoral student at Virginia Tech. I would first like to thank you for participating in this interview. Before we begin, I will explain the purpose of my work and ask you for permission to use the information from our interview to assess the effectiveness of the questions in the protocol and my interview technique. This process is required by the VT Institutional Review Board. This will take a few minutes. Please feel free to stop me at any point and to ask any questions that may arise. (Read the informed consent document and ask for consent.) Do you have any questions before we begin? You may refuse to answer any of the questions.

General Questions:

1. Think about this past year or two, what changes have you made in your teaching?
2. Let's look at the change you made in [A]. [B]. [etc.]. Tell me why you made that change (ask this for each change mentioned).
3. Were other people involved in helping you with this change? If so, who were these people (by position only)? Please describe their involvement.
4. Can you identify anything else that may have affected the instructional practices you have used in the past year or two?

Potential Probes:

5. Think about the past few weeks. What kind of interactions have you had with your principal? (If the teacher mentions several, pick those regarding instruction, take one at a time, and ask the following for each:)
 - a. Tell me about your interaction with the principal about [A]. [B]. [etc.]
 - b. If no instructional interactions are mentioned, I will ask: Have you talked about instruction with your principal?
 - c. If teacher answers yes to b, then ask the teacher to tell about each interaction.

6. How often do you see your principal during the school day? Where?
 - a. How does this affect the way you teach?
7. What goals are unique to your school?
 - a. How did these goals get established?
 - b. How do they affect what you do in the classroom?
8. Tell me about the support you receive as a teacher.
 - a. If they respond by saying they do not feel supported, probe with: Does this affect what you do in the classroom?
 - b. If they respond by saying they do receive support, ask: In what ways do you receive support? What effect does [Support A] [Support B] [etc.] have on your job? If it is not clear where this support is coming from, ask: Where does this support come from?
9. What professional development have you participated in the past year or two?
 - a. Who provided you with this professional development opportunity?
 - b. What did you use from [PD A] [PD B] [PD C] in your classroom?
 - c. How did you use it?
10. What resources have you been provided so far this school year? For each resource mentioned, probe with the following:
 - a. Where did this resource come from?
 - b. How did you use this resource?
 - c. If teacher does not mention how this resource dealt with the classroom, ask: How did this resource affect what you do in the classroom?
11. What motivates you as a teacher?
 - a. How does [Motivation A] [Motivation B] [etc.] affect what you do in the classroom?
 - b. If it is not clear where the motivation is coming from, ask: Where does this motivation come from?
12. How have you interacted on a professional level with colleagues lately?
 - a. Have you shared some of your instructional approaches with them?
 - b. If yes, tell me about what approaches you have shared.
 - c. With whom did you share [Approach A] [Approach B] [etc.]?
 - d. Do you know if they used [Approach A] etc.?
 - e. For each approach, ask: With what results?
13. How have you interacted recently with your department chair?
 - a. What did you talk about?
 - b. If instruction is not mentioned, ask: When have you talked with your department head about teaching methods?
 - * If teacher responds with a time, go to c.

- c. Tell me about [Method A] [Method B] [etc.].
 - d. Did you use [Method A] [Method B] [etc.]?
 - e. Were these methods successful?
14. Talk about the No Child Left Behind Act. State standards. (Ask these questions first for the No Child Left Behind Act, and then ask the same ones for state standards).
- a. How do you think this affects the way you teach?
15. How is your classroom structured?
- a. Do you think it affects learning?
 - b. If yes, how? How about the way you teach?
16. Which one of the following best describes you?
- a. I tend to use the same instructional practices each year.
 - b. I tend to incorporate one or two new instructional practices each year.
 - c. I tend to change how I teach a great deal each year.
 - d. I never teach the same way each year.

Background Questions: I am going to end the interview by asking you a few background questions so that I can become more familiar with you and your teaching background.

17. How many years have you been teaching, including this year?
18. What was your major for your bachelor's degree?
19. Did you go through the traditional education preparation program provided by a college or university?
20. If the answer to #21 is no, ask: How did you get your teaching license?
21. Are you endorsed to teach each of the subjects you are assigned? (Refer to subjects teacher mentioned in question #1. Mention each one.)
22. What is your highest degree? What was your major?
23. How many years have you been at this school?

Thank you for taking the time out of your day to participate in my study. Your input will be a valuable part of my study.

APPENDIX K

EMAIL TO TEACHERS FOR QUALITATIVE STUDY PARTICIPATION

Date

Dear,

As you know so well, the instructional practices of teachers affect the performance of their students. Researchers are beginning to show how and why teachers alter those practices to become more effective instructors. This is the topic of a study we are conducting at Virginia Tech, and we would appreciate your assistance.

Our intent is to identify variables that affect teachers' instructional practices. Our findings could be useful in planning staff development for teachers and school leaders and in adjusting the content of teacher and principal preparation programs.

Your assistance would involve a 15 minute telephone interview at a time convenient to you. Schools and participants will not be identified in the report of the study. All information provided will be held in strict confidence.

Please let us know if you are able to participate by replying to this email. Your participation will be greatly appreciated.

Gratefully,

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APPENDIX L
RAW DATA MATRICES

Table L1

People Influences on Change in Teachers' Instructional Practices by Years of Experience as Teacher

Data source	0-3 years				
	Principal	Assistant Principal	Department Head	Other teachers	Others
T9				Another teacher down the hall who has helped me with some technology, she and I give each other ideas about how we work certain things like with Smartboards. She teaches Geography so we don't collaborate as much on the specifics as I do with the English teacher. (T9, p. 3)	I found by doing the collaboration, it is a webpage called Goodread which is kind of like Myspace or Facebook and they all set up a profile and connect with everyone in the class as their friends, it has encouraged their reading. They see what other students read and what they like, and they are able to communicate through a medium they are already familiar with through Facebook and Myspace. (T9, p.2)
P2	One of the things we do with our teachers is have them observe other teachers twice a year. They can pick and choose where to go but I suggest to them to observe one teacher in their curriculum area and one outside of it. (P2, p.2)			We have a Spanish teacher who went to our Geometry teacher and they came up with different strategies as far as teaching their particular subject matters and integrating some math into Spanish and Spanish into math. There are examples like that throughout the school. (P2, p.3)	
T2	Our administration. They made resources available to us through the state of Virginia Department of Education. (T2, p.3)				We hired a full-time TRT at our school. This person has helped me learn better how to use technology in the classroom... I would say the graduate courses and the TRT have had the most influence on my use of technology. (T2, p.1)

(table continues)

Table L1 (continued)

Data source	4-10 Years				
	Principal	Assistant principal	Department Head	Other teachers	Others
T5		We have an assistant principal who sends out information from sources like National Geographic, U.S. News and World Report, Wall Street Journal which contains the stock market game. (T5, p.3)		Of the people that teach the EOG, History and Civics are EOG classes, we really do a good job of sharing information on different things to prepare students for the tests. We share stuff we found off the internet, maps we use, different projects we use, we just do a good job of sharing with each other. (T5, p.2)	I think the students have to use it and the kids know how to use it. Sometimes the textbook and my notes are kind of dry and your stuck. (T5, p.3)
T6	My principal has been absolutely wonderful with my change towards inquiry-based lessons. He understands what I want to do with it. He understands the backing, the support that I need. (T6, p.1)			One of my colleagues kind of helped me get established because a lot of time first year teachers struggle so much with the content. In upper level sciences the labs are so daunting and she helped me with kind of how to approach labs and what to do with the students. (T6, p.2)	
P1	Third thing we have done is differentiated instruction. We are paying a lot of attention to this. We are sponsoring a lot of professional development and allowing our teachers to go to workshops to learn about different ways to reach all students instead of just touching a few. (P1, p.1)				I think central office played a big part in it. You never want to use that hammer but sometimes you have to use it when people are resistant to making changes in their classrooms. I think central office support is key. (P1, p.2)

(table continues)

Table L1 (continued)

Data source	4-10 Years				
	Principal	Assistant principal	Department Head	Other teachers	Others
P4	Right now I am looking at a girl's card who is with the Florida Training Academy of Leadership with the DOE. We have also identified faculty members with certain strengths that have also inserviced teachers so we have used a variety of trainers on embedding reading and writing and the focus on data. (P4, p.2)			We have a reading coach that is outstanding, who does many trainings with teachers. We have also identified faculty members with certain strengths that have also inserviced teachers so we have used a variety of trainers. (P4, p.2)	We have utilized a lot of district personnel. (P4, p.2)
P5	As for staff development, as principal I give teachers the time off for professional development if needed or the opportunities to attend those workshops. (P5 43-45) Of course we always go through our school improvement plan. In North Carolina we have a school improvement plan that has teachers, parents, and administrators on it. In high schools we have students on it. I mention to them what I think our goals should be and part of our goal was to improve the school technologically and that was part of it as well. (P6, p. 5)			So they totally utilized technology and put on a school-wide show for the teachers to come visit and see how the students can utilize technology to meet the curriculum needs in different classes. (P5, p.3)	They present it in a way to draw the attention of the kids due to the fact that they are seeing that kids are growing up in the digital age. Therefore, even though the material may be identical the presentation of the material draws the student's attention and sometimes I think teachers are noticing that the students are more in tuned to the materials because of things like power point. (P5, p.1)
P6	What I did is that I brought up the idea of the Smartboards with a group of teachers and we talked about it and bounced the idea around. After about six months I approached a couple of teachers that I thought would be gung-ho about the technology and I approached them about sharing what they do with this technology with other teachers. (P6, p.5)			That is the reason we started with them and then once they got the Smartboards in their classrooms we invited other teachers into their classrooms to see these teachers do a demonstration with Smartboards. (P6, p.5)	A lot of the reason is that we feel it holds the student's interest instead of just plain out teaching them or just lecturing. If we can get hook them somehow, that is what I call it, into a leaning strategy that they can use and helps them learn what the teacher is trying to teach them then I am all for it. (P6, p.5)

(table continues)

Table L1 (continued)

Data source	11+ years				
	Principal	Assistant Principal	Department head	Other teachers	Others
T1				We have compiled this huge three-ring binder in our teacher workroom with everyone's graphic organizer ideas and ones they have tried, so if you want to go there you can get an idea. We also share websites to use. We also use Inspiration software to create graphic organizers. (T1, p.4)	The entire district has been required to do this and when we looked at our test scores the vocabulary scores were low so we needed to do something to raise those scores. I think over time as we look at test scores we will see an increase in vocabulary scores. People in central office said we needed to improve vocabulary scores so that was a goal. (T1, p.3)
T3			Actually it is something called TIA Interactive. What it does is that it actually hooks up to your S Video of your TV so instead of me stopping my lecture and getting an overhead to hook the calculator up to, now the calculator is a permanent part of my lecture. All I have to do is turn on my TV and there it is. I can walk around the classroom and the kids can actually use it because it has a 50 foot extension cord so I can hand them the calculator and tell them to show me what they have.... We have a building level math supervisor I saw sitting in a room and I asked if I could have one of those. I had seen it used before and wanted to use it so I asked if I could have one. (T3, p.2)	I sat down with a colleague of mine and I showed him a method that was more conceptual with trigonometry. This is something we never do, it is not in your textbook, and is usually only used at the university level. But I said if you do this method I am convinced that the kids get more understanding. We both have tried it. (T3, p.4)	Often I see if I present something I see four or five confused faces, whereas a student can make that same presentation, almost using the same language but different mannerisms, and those same four or five faces will say "oh, I got it now". (T3, p.1).

(table continues)

Table L1 (continued)

Data source	11+ years				
	Principal	Assistant Principal	Department head	Other teachers	Others
T4	That is something that we as a staff (I am talking about the department, the principal) agreed to do as a group and work together to get the scores up. (T4, p.4)			I found what other people were doing and I finally got a general idea of what I wanted to do and borrowed bits and pieces from other people. I have got it to where I like it now and it is what I use. It is pretty useful. (T4, p.3)	
T7				One of the things we did was the idea of the jeopardy game. We have done some other critical thinking ideas. One idea that I am going to be starting the year out with is trying to get the kids to think more critically by using some problems that are out there like the optical illusion puzzles, and the seducco puzzles. (T7, p.3)	I have a daughter that is entering her senior year of college and is going into education. Just talking with her about different practices and talking about different philosophies that are currently being introduced to them. She said to me that it is something that needs to be looked at, you really need to think about and alter your lessons to allow for more engagement by students. (T7, p.2)
T8	When we got a new principal last year he took over as my evaluator. His approach is a bit different, so he would come in and observe my class and instead of telling you what he thought he would always ask what you think. I am very critical of myself. Just the fact that he even gave me the time to say oh man all of these things went wrong was really good for me. (T8, pp.5-6)			So we sort of came up with some of those ideas together to increase the amount of writing they did. In that second year what we saw was how the increase in the workload improved the quality of their work, not just because they had more practice but also because their understanding of what was expected of them changed. (T8, p.3)	Our district has moved to a standardized curriculum. Within the last year I have been required to use that [standardized curriculum] which has been a huge change to a lot of things. I am not sure how to address that, because those are not things that I have chosen to change. It's like, you will teach this lesson; so I do. (T8, p.1) Yes. It was sort of the former superintendent's vision that this [curriculum renewal] would happen for every course, every content area. (T8, p.4)

(table continues)

Table L1 (continued)

Data source	11+ Years				
	Principal	Assistant principal	Department head	Other teachers	Others
P3				We have a summer retreat every year, a faculty meeting in the summer, and our teachers talk about goals and think we want to do for the upcoming year. That is something [focus on differentiation] that has really been a focus generated by our teachers. (P3, p.3)	Literacy is a big focus for us and the literacy coach has helped us generate ideas and now we are starting to share other ideas. Social Studies has started to share with Math department and English sharing with Science and working out projects together, so we are really growing in those areas. (P3, p.4)
P7	So what we have done recently is I have introduced a way of assessing students every three weeks on student performance on content we call proficiency checks but essentially what it amounts to is the content that we know will be tested in the testing system somewhere, sometime. (P7, p.2)				
P8	I would say some people pushed forward with the differentiation and that it is how it became the critical friend's model of looking at student work. For the most part the decision to go with this approach was top down [central office and building administrators]. (P8, pp.1-2) Not to pat myself on the back, but I always thought that we should not be constantly reinventing the wheels, so particularly once we had the electronic devices I would send out attachments with materials all the time to colleagues. (P8 39-42)			I think that people are collegial and they will talk about what they are doing in the classroom, but when it comes down to teachers saying hey lets see a test you created, here is the test I created, now that is a little slower in coming. That is why I said there was a change last year. Teachers thought that once they were not willing to share, but they got so much feedback that was helpful feedback in shaping the end result that they were more willing to do it. (P8, p.3)	The concept-based was an assistant superintendent who was in place and then the curriculum renewal came from a new assistant superintendent who came into the district and saw that there was not really any kind of curriculum map and then put a focus on that. Even though this was top down there was a lot of teacher buy-in because people had come into the district and saw that there really was not any kind of written curriculum. (P8, p.4)

(table continues)

Table L1 (continued)

Data source	11+ Years				
	Principal	Assistant principal	Department head	Other teachers	Others
P9	The next year I pushed everyone onto it but I had 7 or 8 coaches now. I had 7 or 8 people who were saying hey this is great, this is what it did for my efficiency and my time. We had a lot more buy in because I had these 7 or 8 eager beavers so to speak that were jumping at the chance. (P9, pp. 3-4)				

Table L2

People Influences on Change in Teachers' Instructional Practices by Teachers' Level of Education

Data source	Bachelors degree				
	Principal	Assistant Principal	Department Head	Other teachers	Others
T5		We have an assistant principal who sends out information from sources like National Geographic, U.S. News and World Report, Wall Street Journal which contains the stock market game. (T5, p.3)		Of the people that teach the EOG, History and Civics are EOG classes, we really do a good job of sharing information on different things to prepare students for the tests. We share stuff we found off the internet, maps we use, different projects we use, we just do a good job of sharing with each other. (T5, p.2) I would say my colleagues are the most important thing. It has really helped me. Whether it is a new way to teach something, everyone sort of teaches their class differently, or just a way to do something a little bit different I would say sharing with my colleagues has helped me the most. (T5, p.4)	I think the students have to use it and the kids know how to use it. Sometimes the textbook and my notes are kind of dry and your stuck. (T5, p.3)

(table continues)

Table L2 (continued)

Data source	Masters degree				
	Principal	Assistant principal	Department head	Other teachers	Others
T1				We have compiled this huge three-ring binder in our teacher workroom with everyone's graphic organizer ideas and ones they have tried, so if you want to go there you can get an idea. We also share websites to use. We also use Inspiration software to create graphic organizers. (T1, p.4)	Well, I think so much of today's society kids want instant gratification, instant answers, instant everything. (T1, p.2). The entire district has been required to do this and when we looked at our test scores the vocabulary scores were low so we needed to do something to raise those scores. I think over time as we look at test scores we will see an increase in vocabulary scores. People in central office said we needed to improve vocabulary scores so that was a goal.] (T1, p.3)
T2	Our administration. They made resources available to us through the state of Virginia Department of Education. (T2, p.2)				We hired a full-time TRT at our school. This person has helped me learn better how to use technology in the classroom... I would say the graduate courses and the TRT have had the most influence on my use of technology. (T2, p.1)

(table continues)

Table L2 (continued)

Data source	Masters degree				
	Principal	Assistant principal	Department head	Other teachers	Others
T3			Actually it is something called TIA Interactive. What it does is that it actually hooks up to your S Video of your TV so instead of me stopping my lecture and getting an overhead to hook the calculator up to, now the calculator is a permanent part of my lecture. All I have to do is turn on my TV and there it is.... (T3, p.2)	I sat down with a colleague of mine and I showed him a method that was more conceptual with trigonometry. This is something we never do, it is not in your textbook, and is usually only used at the university level. But I said if you do this method I am convinced that the kids get more understanding. We both have tried it. (T3, p.4)	That feedback has really changed not the way I teach but what I am teaching and the depth I go into it. That feedback from kids, who call me about what they struggle with in university and college math and science classes, I can tailor my instructional methodology on those concepts differently. (T3, p.6)
T4	That is something that we as a staff (I am talking about the department, the principal) agreed to do as a group and work together to get the scores up. (T4, p.4)			I found what other people were doing and I finally got a general idea of what I wanted to do and borrowed bits and pieces from other people. I have got it to where I like it now and it is what I use. It is pretty useful. (T4, p.3)	
T6	My principal has been absolutely wonderful with my change towards inquiry-based lessons. He understands what I want to do with it. He understands the backing, the support that I need. (T6, p.1)		One of my colleagues kind of helped me get established because a lot of time first year teachers struggle so much with the content. In upper level sciences the labs are so daunting and she helped me with kind of how to approach labs and what to do with the students. (T6, p.2)		

(table continues)

Table L2 (continued)

Data source	Masters degree				
	Principal	Assistant principal	Department head	Other teachers	Others
T7				By working with 3 other people, I have been trying to integrate our curriculum into the other people's classes so that students can begin to see a carry-over from discipline to discipline. I have worked a considerable amount with my science teacher discussing the idea of graphs. (T7, p.3)	I have a daughter that is entering her senior year of college and is going into education. Just talking with her about different practices and talking about different philosophies that are currently being introduced to them. She said to me that it is something that needs to be looked at, you really need to think about and alter your lessons to allow for more engagement by students. (T7, p.2)
T8	When we got a new principal last year he took over as my evaluator. His approach is a bit different, so he would come in and observe my class and instead of telling you what he thought he would always ask what you think. I am very critical of myself. Just the fact that he even gave me the time to say oh man all of these things went wrong was really good for me. (T8, pp.5-6)			So we sort of came up with some of those ideas together to increase the amount of writing they did. In that second year what we saw was how the increase in the workload improved the quality of their work, not just because they had more practice but also because their understanding of what was expected of them changed. (T8, p.3)	Our district has moved to a standardized curriculum. Within the last year I have been required to use that [standardized curriculum] which has been a huge change to a lot of things. I am not sure how to address that, because those are not things that I have chosen to change. It's like, you will teach this lesson; so I do. (T8, p.1) Yes. It was sort of the former superintendent's vision that this [curriculum renewal] would happen for every course, every content area. (T8, p.4)
T9				Another teacher down the hall who has helped me with some technology, she and I give each other ideas about how we work certain things like with Smartboards. She teaches Geography so we don't collaborate as much on the specifics as I do with the English teacher. (T9, p. 3)	I found by doing the collaboration, it is a webpage called Goodread which is kind of like Myspace or Facebook and they all set up a profile and connect with everyone in the class as their friends, it has encouraged their reading. They see what other students read and what they like, and they are able to communicate through a medium they are already familiar with through Facebook and Myspace. (T9, p.2)

(table continues)

Table L2 (continued)

Data source	Masters degree				
	Principal	Assistant principal	Department head	Other teachers	Others
P1	Third thing we have done is differentiated instruction. We are paying a lot of attention to this. We are sponsoring a lot of professional development and allowing our teachers to go to workshops to learn about different ways to reach all students instead of just touching a few. (P1, p.1)				I think central office played a big part in it. You never want to use that hammer but sometimes you have to use it when people are resistant to making changes in their classrooms. I think central office support is key.] (P1, p.2)
P2	One of the things we do with our teachers is have them observe other teachers twice a year. They can pick and choose where to go but I suggest to them to observe one teacher in their curriculum area and one outside of it. (P2, p.1)			We have a Spanish teacher who went to our Geometry teacher and they came up with different strategies as far as teaching their particular subject matters and integrating some math into Spanish and Spanish into math. There are examples like that throughout the school. (P2, p.2)	
P3				We have a summer retreat every year, a faculty meeting in the summer, and our teachers talk about goals and thinks we want to do for the upcoming year. That is something [focus on differentiation] that has really been a focus generated by our teachers. (P3, p.3)	Literacy is a big focus for us and the literacy coach has helped us generate ideas and now we are starting to share other ideas. Social Studies has started to share with Math department and English sharing with Science and working out projects together, so we are really growing in those areas. (P3, p.3)

(table continues)

Table L2 (continued)

Data source	Masters degree				
	Principal	Assistant principal	Department head	Other teachers	Others
P5	As for staff development, as principal I give teachers the time off for professional development if needed or the opportunities to attend those workshops. (P5, p.2)			So they totally utilized technology and put on a school-wide show for the teachers to come visit and see how the students can utilize technology to meet the curriculum needs in different classes. (P5, p.3)	They present it in a way to draw the attention of the kids due to the fact that they are seeing that kids are growing up in the digital age. Therefore, even though the material may be identical the presentation of the material draws the student's attention and sometimes I think teachers are noticing that the students are more in tuned to the materials because of things like power point. (P5, p.1)
P6	What I did is that I brought up the idea of the Smartboards with a group of teachers and we talked about it and bounced the idea around. After about six months I approached a couple of teachers that I thought would be gung-ho about the technology and I approached them about sharing what they do with this technology with other teachers. Some turned me down and some did not. (P6, p.5)			That is the reason we started with them and then once they got the Smartboards in their classrooms we invited other teachers into their classrooms to see these teachers do a demonstration with Smartboards. (P6, p.5)	A lot of the reason is that we feel it holds the student's interest instead of just plain out teaching them or just lecturing. If we can get hook them somehow, that is what I call it, into a learning strategy that they can use and helps them learn what the teacher is trying to teach them then I am all for it. (P6, p.5)
P7	So what we have done recently is I have introduced a way of assessing students every three weeks on student performance on content we call proficiency checks but essentially what it amounts to is the content that we know will be tested in the testing system somewhere, sometime. (P7, p.2)				

(table continues)

Table L2 (continued)

Data source	Master's Degree				
	Principal	Assistant principal	Department head	Other teachers	Others
P8	<p>I would say some people pushed forward with the differentiation and that it is how it became the critical friend's model of looking at student work. For the most part the decision to go with this approach was top down [central office and building administrators]. (P8, pp.1-2)</p> <p>Not to pat myself on the back, but I always thought that we should not be constantly reinventing the wheels, so particularly once we had the electronic devices I would send out attachments with materials all the time to colleagues. (P8, p.2)</p>			<p>I think that people are collegial and they will talk about what they are doing in the classroom, but when it comes down to teachers saying hey lets see a test you created, here is the test I created, now that is a little slower in coming. That is why I said there was a change last year. Teachers thought that once they were not willing to share, but they got so much feedback that was helpful feedback in shaping the end result that they were more willing to do it. (P8, pp.2-3)</p>	<p>I think the students drive it. Those teachers who use a lot of student input in their class in developing lessons, certainly that has helped to drive it. You have to have a bigger bag of tricks, you are competing against the graphics and video games that keep students engaged. (P8 70-74)</p> <p>I would say it was more of a top down kind of decision. There were some pioneer teachers that of course had gone out and taken more training in differentiation and student assessment. A lot of it was school district policy for differentiation, looking at practice and saying it can't be done like it use to be done where there is a lot of lecturing going on or a lot of whole group instruction going on. (P8, p.1)</p>
P9	<p>We brought for example Inspiration for its graphic designers and organizers and I said to teachers look we will buy this for you but you have to use it. (P9, p.3)</p>			<p>The next year I pushed everyone onto it but I had 7 or 8 coaches now. I had 7 or 8 people who were saying hey this is great, this is what it did for my efficiency and my time. We had a lot more buy in because I had these 7 or 8 eager beavers so to speak that were jumping at the chance.(P9, pp.3-4)</p>	<p>I hate to use a cliché, it is the wave of the future but they see how much of a role technology plays in the lives of students. Anything you can do to captivate the attention of students for that 45 minute period, or whatever it is you have, I think they are realizing that it plays an important role in helping students achieve. (P9, p.2)</p>

(table continues)

Table L2 (continued)

Data source	Doctoral degree				
	Principal	Assistant Principal	Department Head	Other teachers	Others
P4	<p>We also worked with some individual trainers from the outside. Right now I am looking at a girl's card who is with the Florida Training Academy of Leadership with the DOE. We have also identified faculty members with certain strengths that have also inserviced teachers so we have used a variety of trainers for embedding reading and writing and the focus on data. (P4, p.2)</p> <p>Yes, big time. As a matter of fact a girl from state leadership, we had training with her this summer on differentiation. That is our big focus this year but I can't tell you that we have it throughout; I mean we have it in pockets. Our goal this year is that you will see it everywhere by next year. (P4 p.4)</p>			<p>We have also identified faculty members with certain strengths that have also inserviced teachers so we have used a variety of trainers. (P4, p.2)</p>	<p>We have also utilized our own personnel here at school. We have a reading coach that is outstanding, who does many trainings with teachers. (P4, p.2)</p>

Table L3

People Influences on Change in Teachers' Instructional Practices by Teacher Licensure

Data source	Traditional university preparation				
	Principal	Assistant principal	Department head	Other teachers	Others
T1				We have compiled this huge three-ring binder in our teacher workroom with everyone's graphic organizer ideas and ones they have tried, so if you want to go there you can get an idea. We also share websites to use. We also use Inspiration software to create graphic organizers. (T1, p.4)	The entire district has been required to do this and when we looked at our test scores the vocabulary scores were low so we needed to do something to raise those scores. I think over time as we look at test scores we will see an increase in vocabulary scores. People in central office said we needed to improve vocabulary scores so that was a goal. (T1, p.3)
T2	Our administration. They made resources available to us through the state of Virginia Department of Education. (T2, p.2)				We hired a full-time TRT at our school. This person has helped me learn better how to use technology in the classroom... I would say the graduate courses and the TRT have had the most influence on my use of technology. (T2, p.1)
T3			Actually it is something called TIA Interactive. What it does is that it actually hooks up to your S Video of your TV so instead of me stopping my lecture and getting an overhead to hook the calculator up to, now the calculator is a permanent part of my lecture. All I have to do is turn on my TV and there it is.... (T3, p.2)	I sat down with a colleague of mine and I showed him a method that was more conceptual with trigonometry. This is something we never do, it is not in your textbook, and is usually only used at the university level. But I said if you do this method I am convinced that the kids get more understanding. We both have tried it. (T3, p.4)	That feedback has really changed not the way I teach but what I am teaching and the depth I go into it. That feedback from kids, who call me about what they struggle with in university and college math and science classes, I can tailor my instructional methodology on those concepts differently. (T3, p.6)

(table continues)

Table L3

Data source	Traditional university preparation				
	Principal	Assistant principal	Department head	Other teachers	Others
T4	That is something that we as a staff (I am talking about the department, the principal) agreed to do as a group and work together to get the scores up. (T4, p.4)			I found what other people were doing and I finally got a general idea of what I wanted to do and borrowed bits and pieces from other people. I have got it to where I like it now and it is what I use. It is pretty useful. (T4, p.3)	
T5		We have an assistant principal who sends out information from sources like National Geographic, U.S. News and World Report, Wall Street Journal which contains the stock market game. (T5, p.3)		We really do a good job of sharing information on different things to prepare students for the tests. We share stuff we found off the internet, maps we use, different projects we use, we just do a good job of sharing with each other. (T5, p.2)	I think the students have to use it and the kids know how to use it. Sometimes the textbook and my notes are kind of dry and your stuck. (T5, p.3)
T6	My principal has been absolutely wonderful with my change towards inquiry-based lessons. He understands what I want to do with it. He understands the backing, the support that I need. (T6, p.2) He does things like this year he and the superintendent got me a Smartboard which I have in my classroom. They are real good at utilizing technology and helping me buy the supplies that I need. (T6, p.3)			My colleague that I teach with, one of the other Science teachers is very behind the idea of it. (T6, p.1)	

(table continues)

Table L3

Data source	Traditional university preparation				
	Principal	Assistant principal	Department head	Other teachers	Others
T7				<p>By working with 3 other people, I have been trying to integrate our curriculum into the other people's classes so that students can begin to see a carry-over from discipline to discipline. I have worked a considerable amount with my science teacher discussing the idea of graphs. (T7, p.3)</p> <p>One of the things we did was the idea of the jeopardy game. We have done some other critical thinking ideas. (T7, p.3)</p>	<p>I have a daughter that is entering her senior year of college and is going into education. Just talking with her about different practices and talking about different philosophies that are currently being introduced to them. She said to me that it is something that needs to be looked at, you really need to think about and alter your lessons to allow for more engagement by students. (T7, p.2)</p>
T8	<p>When we got a new principal last year he took over as my evaluator. His approach is a bit different, so he would come in and observe my class and instead of telling you what he thought he would always ask what do you think. I am very critical of myself. Just the fact that he even gave me the time to say oh man all of these things went wrong was really good for me. (T8, pp.5-6)</p>			<p>So we sort of came up with some of those ideas together to increase the amount of writing they did. In that second year what we saw was how the increase in the workload improved the quality of their work, not just because they had more practice but also because their understanding of what was expected of them changed. (T8, p.3)</p>	<p>Our district has moved to a standardized curriculum. Within the last year I have been required to use that [standardized curriculum] which has been a huge change to a lot of things. I am not sure how to address that, because those are not things that I have chosen to change. It's like, you will teach this lesson; so I do. (T8, p.1)</p> <p>Yes. It was sort of the former superintendent's vision that this [curriculum renewal] would happen for every course, every content area. (T8, p.4)</p>

(table continues)

Table L3

Data source	Traditional university preparation				
	Principal	Assistant principal	Department head	Other teachers	Others
T9				Another teacher down the hall who has helped me with some technology, she and I give each other ideas about how we work certain things like with Smartboards. She teaches Geography so we don't collaborate as much on the specifics as I do with the English teacher. (T9, p. 3)	I found by doing the collaboration, it is a webpage called Goodread which is kind of like Myspace or Facebook and they all set up a profile and connect with everyone in the class as their friends, it has encouraged their reading. They see what other students read and what they like, and they are able to communicate through a medium they are already familiar with through Facebook and Myspace. (T9, p.2)
P1	Third thing we have done is differentiated instruction. We are paying a lot of attention to this. We are sponsoring a lot of professional development and allowing our teachers to go to workshops to learn about different ways to reach all students instead of just touching a few. (P1, p.1)				Oh I think so, I think central office played a big part in it. You never want to use that hammer but sometimes you have to use it when people are resistant to making changes in their classrooms. I think central office support is key. (P1, p.2)
P2	One of the things we do with our teachers is have them observe other teachers twice a year. They can pick and choose where to go but I suggest to them to observe one teacher in their curriculum area and one outside of it. (P2, p.1)			We have a Spanish teacher who went to our Geometry teacher and they came up with different strategies as far as teaching their particular subject matters and integrating some math into Spanish and Spanish into math. There are examples like that throughout the school. (P2, p.2)	

(table continues)

Table L3

Data source	Traditional university preparation				
	Principal	Assistant principal	Department head	Other teachers	Others
P3				We have a summer retreat every year, a faculty meeting in the summer, and our teachers talk about goals and think we want to do for the upcoming year. That is something [focus on differentiation] that has really been a focus generated by our teachers. (P3, p.3)	Literacy is a big focus for us and the literacy coach has helped us generate ideas and now we are starting to share other ideas. Social Studies has started to share with Math department and English sharing with Science and working out projects together, so we are really growing in those areas. (P3, p.3)
P4	We also worked with some individual trainers from the outside. Right now I am looking at a girl's card who is with the Florida Training Academy of Leadership with the DOE. We have also identified faculty members with certain strengths that have also inserviced teachers so we have used a variety of trainers for embedding reading and writing and the focus on data. (P4, p.2)			We have also identified faculty members with certain strengths that have also inserviced teachers so we have used a variety of trainers. (P4, p.2)	We have also utilized our own personnel here at school. We have a reading coach that is outstanding, who does many trainings with teachers. (P4, p.2)
P6	What I did is that I brought up the idea of the Smartboards with a group of teachers and we talked about it and bounced the idea around. After about six months I approached a couple of teachers that I thought would be gung-ho about the technology and I approached them about sharing what they do with this technology with other teachers. Some turned me down and some did not. (P6, p.5)			That is the reason we started with them and then once they got the Smartboards in their classrooms we invited other teachers into their classrooms to see these teachers do a demonstration with Smartboards. (P6, p.5)	A lot of the reason is that we feel it holds the student's interest instead of just plain out teaching them or just lecturing. If we can get hook them somehow, that is what I call it, into a leaning strategy that they can use and helps them learn what the teacher is trying to teach them then I am all for it. (P6, p.5)

(table continues)

Table L3

Data source	Traditional university preparation				
	Principal	Assistant principal	Department head	Other teachers	Others
P7	So what we have done recently is I have introduced a way of assessing students every three weeks on student performance on content we call proficiency checks but essentially what it amounts to is the content that we know will be tested in the testing system somewhere, sometime. (P7, p.2)				
P8	<p>I would say some people pushed forward with the differentiation and that it is how it became the critical friend's model of looking at student work. For the most part the decision to go with this approach was top down [central office and building administrators]. (P8, pp.1-2)</p> <p>Not to pat myself on the back, but I always thought that we should not be constantly reinventing the wheels, so particularly once we had the electronic devices I would send out attachments with materials all the time to colleagues. (P8, p.2)</p>			I think that people are collegial and they will talk about what they are doing in the classroom, but when it comes down to teachers saying hey lets see a test you created, here is the test I created, now that is a little slower in coming. That is why I said there was a change last year. Teachers thought that once they were not willing to share, but they got so much feedback that was helpful feedback in shaping the end result that they were more willing to do it. (P8, pp.2-3)	The concept-based was an assistant superintendent who was in place and then the curriculum renewal came from a new assistant superintendent who came into the district and saw that there was not really any kind of curriculum map and then put a focus on that. Even though this was top down there was a lot of teacher buy-in because people had come into the district and saw that there really was not any kind of written curriculum. (P8, p.4)
P9	The next year I pushed everyone onto it but I had 7 or 8 coaches now. I had 7 or 8 people who were saying hey this is great, this is what it did for my efficiency and my time. We had a lot more buy in because I had these 7 or 8 eager beavers so to speak that were jumping at the chance. (P9, pp.3-4)				

(table continues)

Table L3 (continued)

Data source	Alternative certification				
	Principal	Assistant Principal	Department Head	Other teachers	Others
P5	As for staff development, as principal I give teachers the time off for professional development if needed or the opportunities to attend those workshops on technology. (P5, p.2)			<p>So they totally utilized technology and put on a school-wide show for the teachers to come visit and see how the students can utilize technology to meet the curriculum needs in different classes. (P5, p.3)</p> <p>I don't know that there is a position, just those that have the capabilities of sharing in professional learning communities and staff development meetings or on a one-on-one basis with other teachers to either improve their basic technology skills or to improve or increase their technology skills. (P5, p.2)</p>	<p>They present it in a way to draw the attention of the kids due to the fact that they are seeing that kids are growing up in the digital age. Therefore, even though the material may be identical the presentation of the material draws the student's attention and sometimes I think teachers are noticing that the students are more in tuned to the materials because of things like power point. (P5, p.1)</p> <p>In addition, our district does offer technological resources that you can receive through one of our district intranet portals so you can pull stuff off of it, therefore requiring the technology ability to do so. I think that teachers are adjusting their abilities accordingly to utilize some of those resources. (P5, p.2)</p>

Table L4

People Influences on Change in Teachers' Instructional Practices by Undergraduate Major

Data source	Teaching in area of major				
	Principal	Assistant principal	Department head	Other teachers	Others
T1				We have compiled this huge three-ring binder in our teacher workroom with everyone's graphic organizer ideas and ones they have tried, so if you want to go there you can get an idea. We also share websites to use. We also use Inspiration software to create graphic organizers. (T1, p.4)	The entire district has been required to do this and when we looked at our test scores the vocabulary scores were low so we needed to do something to raise those scores. I think over time as we look at test scores we will see an increase in vocabulary scores. People in central office said we needed to improve vocabulary scores so that was a goal. (T1, p.3)
T2	Our administration. They made resources available to us through the state of Virginia Department of Education. (T2, p.2)				We hired a full-time TRT at our school. This person has helped me learn better how to use technology in the classroom... I would say the graduate courses and the TRT have had the most influence on my use of technology. (T2, p.1)

(table continues)

Table L4 (continued)

Data source	Teaching in area of major				
	Principal	Assistant principal	Department head	Other teachers	Others
T3			<p>Actually it is something called TIA Interactive. What it does is that it actually hooks up to your S Video of your TV so instead of me stopping my lecture and getting an overhead to hook the calculator up to, now the calculator is a permanent part of my lecture. All I have to do is turn on my TV and there it is.... (T3, p.2)</p>	<p>I sat down with a colleague of mine and I showed him a method that was more conceptual with trigonometry. This is something we never do, it is not in your textbook, and is usually only used at the university level. But I said if you do this method I am convinced that the kids get more understanding. We both have tried it. (T3, p.4)</p>	<p>That feedback has really changed not the way I teach but what I am teaching and the depth I go into it. That feedback from kids, who call me about what they struggle with in university and college math and science classes, I can tailor my instructional methodology on those concepts differently. (T3, p.6)</p>
T4	<p>That is something that we as a staff (I am talking about the department, the principal) agreed to do as a group and work together to get the scores up. (T4, p.4)</p>			<p>I found what other people were doing and I finally got a general idea of what I wanted to do and borrowed bits and pieces from other people. I have got it to where I like it now and it is what I use. It is pretty useful. (T4, p.3)</p>	

(table continues)

Table L4 (continued)

Data source	Teaching in area of major				
	Principal	Assistant principal	Department head	Other teachers	Others
T5		We have an assistant principal who sends out information from sources like National Geographic, U.S. News and World Report, Wall Street Journal which contains the stock market game. (T5,p.3)		Of the people that teach the EOG, History and Civics are EOG classes, we really do a good job of sharing information on different things to prepare students for the tests. We share stuff we found off the internet, maps we use, different projects we use, we just do a good job of sharing with each other. (T5, p.2)	I think the students have to use it and the kids know how to use it. Sometimes the textbook and my notes are kind of dry and your stuck. (T5, p.3)
T6	My principal has been absolutely wonderful with my change towards inquiry-based lessons. He understands what I want to do with it. He understands the backing, the support that I need. (T6, p.1)			One of my colleagues kind of helped me get established because a lot of time first year teachers struggle so much with the content. In upper level sciences the labs are so daunting and she helped me with kind of how to approach labs and what to do with the students. (T6, p.2)	He does things like this year he and the superintendent got me a Smartboard which I have in my classroom. They are real good at utilizing technology and helping me buy the supplies that I need. (T6, p.3)
T7				One of the things we did was the idea of the jeopardy game. We have done some other critical thinking ideas. (T7, p.3)	I have a daughter that is entering her senior year of college and is going into education. Just talking with her about different practices and talking about different philosophies that are currently being introduced to them. She said to me that it is something that needs to be looked at. You really need to think about and alter your lessons to allow for more engagement by students. (T7, p.2)

(table continues)

Table L4 (continued)

Data source	Teaching in area of major				
	Principal	Assistant principal	Department head	Other teachers	Others
T8	When we got a new principal last year he took over as my evaluator. His approach is a bit different, so he would come in and observe my class and instead of telling you what he thought he would always ask what you think. I am very critical of myself. Just the fact that he even gave me the time to say oh man all of these things went wrong was really good for me. (T8, pp.5-6)			So we sort of came up with some of those ideas together to increase the amount of writing they did. In that second year what we saw was how the increase in the workload improved the quality of their work, not just because they had more practice but also because their understanding of what was expected of them changed. (T8, p.3)	Our district has moved to a standardized curriculum. Within the last year I have been required to use that [standardized curriculum] which has been a huge change to a lot of things. I am not sure how to address that, because those are not things that I have chosen to change. It's like, you will teach this lesson; so I do. (T8, p.1) Yes. It was sort of the former superintendent's vision that this [curriculum renewal] would happen for every course, every content area. (T8, p.4)
T9				Another teacher down the hall who has helped me with some technology, she and I give each other ideas about how we work certain things like with Smartboards. She teaches Geography so we don't collaborate as much on the specifics as I do with the English teacher. (T9, p. 3)	One it is kind of the world that we live in, so technology is becoming more and more prominent and that is something students will see more and more throughout their life. I have found that my students enjoy instruction around technology more. (T9, p.1)

(table continues)

Table L4 (continued)

Data source	Teaching in area of major				
	Principal	Assistant principal	Department head	Other teachers	Others
P1	Third thing we have done is differentiated instruction. We are paying a lot of attention to this. We are sponsoring a lot of professional development and allowing our teachers to go to workshops to learn about different ways to reach all students instead of just touching a few. (P1, p.1)				Oh I think so, I think central office played a big part in it. You never want to use that hammer but sometimes you have to use it when people are resistant to making changes in their classrooms. I think central office support is key. (P1, p.2)
P2	One of the things we do with our teachers is have them observe other teachers twice a year. They can pick and choose where to go but I suggest to them to observe one teacher in their curriculum area and one outside of it. (P2, p.1)			We have a Spanish teacher who went to our Geometry teacher and they came up with different strategies as far as teaching their particular subject matters and integrating some math into Spanish and Spanish into math. There are examples like that throughout the school. (P2, p.2)	
P3				We have a summer retreat every year, a faculty meeting in the summer, and our teachers talk about goals and thinks we want to do for the upcoming year. That is something [focus on differentiation] that has really been a focus generated by our teachers. (P3, p.3)	Literacy is a big focus for us and the literacy coach has helped us generate ideas and now we are starting to share other ideas. Social Studies has started to share with Math department and English sharing with Science and working out projects together, so we are really growing in those areas. (P3, p.3)

(table continues)

Table L4 (continued)

Data source	Teaching in area of major				
	Principal	Assistant principal	Department head	Other teachers	Others
P4	We also worked with some individual trainers from the outside. Right now I am looking at a girl's card that is with the Florida Training Academy of Leadership with the DOE. We have also identified faculty members with certain strengths that have also inserviced teachers so we have used a variety of trainers for embedding reading and writing and the focus on data. P4 (p. 2)			We have also utilized our own personnel here at school. We have a reading coach that is outstanding, who does many trainings with teachers. We have also identified faculty members with certain strengths that have also inserviced teachers so we have used a variety of trainers. (P4, p. 2)	We have also utilized our own personnel here at school. We have a reading coach that is outstanding, who does many trainings with teachers. We have also identified faculty members with certain strengths that have also inserviced teachers so we have used a variety of trainers. (P4, p. 2)
P5	As for staff development, as principal I give teachers the time off for professional development if needed or the opportunities to attend those workshops on technology. (P5, p.2)			So they totally utilized technology and put on a school-wide show for the teachers to come visit and see how the students can utilize technology to meet the curriculum needs in different classes. (P5, p.3)	They present it in a way to draw the attention of the kids due to the fact that they are seeing that kids are growing up in the digital age. Therefore, even though the material may be identical the presentation of the material draws the student's attention and sometimes I think teachers are noticing that the students are more in tuned to the materials because of things like power point. (P5, p.1)
P6	What I did is that I brought up the idea of the Smartboards with a group of teachers and we talked about it and bounced the idea around. After about six months I approached a couple of teachers that I thought would be gung-ho about the technology and I approached them about sharing what they do with this technology with other teachers. (P6, p.5)			That is the reason we started with them and then once they got the Smartboards in their classrooms we invited other teachers into their classrooms to see these teachers do a demonstration with Smartboards. (P6, p.5)	A lot of the reason is that we feel it holds the student's interest instead of just plain out teaching them or just lecturing. If we can get hook them somehow, that is what I call it, into a leaning strategy that they can use and helps them learn what the teacher is trying to teach them then I am all for it. (P6, p.5)

(table continues)

Table L4 (continued)

Data source	Teaching in area of major				
	Principal	Assistant principal	Department head	Other teachers	Others
P6	<p>What I did is that I brought up the idea of the Smartboards with a group of teachers and we talked about it and bounced the idea around. After about six months I approached a couple of teachers that I thought would be gung-ho about the technology and I approached them about sharing what they do with this technology with other teachers. (P6, p.5)</p>			<p>That is the reason we started with them and then once they got the Smartboards in their classrooms we invited other teachers into their classrooms to see these teachers do a demonstration with Smartboards. (P6, p.5)</p>	<p>A lot of the reason is that we feel it holds the student's interest instead of just plain out teaching them or just lecturing. If we can get hook them somehow, that is what I call it, into a leaning strategy that they can use and helps them learn what the teacher is trying to teach them then I am all for it. (P6, p.5)</p>
P8	<p>I would say some people pushed forward with the differentiation and that it is how it became the critical friend's model of looking at student work. For the most part the decision to go with this approach was top down [central office and building administrators]. (P8, pp.1-2)</p> <p>Not to pat myself on the back, but I always thought that we should not be constantly reinventing the wheels, so particularly once we had the electronic devices I would send out attachments with materials all the time to colleagues. (P8, p.2)</p>			<p>I think that people are collegial and they will talk about what they are doing in the classroom, but when it comes down to teachers saying hey lets see a test you created, here is the test I created, now that is a little slower in coming. That is why I said there was a change last year. Teachers thought that once they were not willing to share, but they got so much feedback that was helpful feedback in shaping the end result that they were more willing to do it. (P8, pp.2-3)</p>	<p>The concept-based was an assistant superintendent who was in place and then the curriculum renewal came from a new assistant superintendent who came into the district and saw that there was not really any kind of curriculum map and then put a focus on that. (P8, p.4)</p>
P9	<p>The next year I pushed everyone onto it but I had 7 or 8 coaches now. I had 7 or 8 people who were saying hey this is great, this is what it did for my efficiency and my time. We had a lot more buy in because I had these 7 or 8 eager beavers so to speak that were jumping at the chance. (P9, pp.3-4)</p>				

Table L4 (continued)

Data source	Teaching in area outside of major				
	Principal	Assistant Principal	Department Head	Other Teachers	Others
P7	<p>Basically, we were getting our KAATS scores, as far as being able to do anything with them, a year late or making changes on the fly as we got our scores and that just was not very good for us. This was not good for faculty morale. So what we have done recently is I have introduced a way of assessing students every three weeks on student performance on content we call proficiency checks but essentially what it amounts to is the content that we know will be tested in the testing system somewhere, sometime. (P7, p.2)</p> <p>Collaborative teaching is one of the things we have done to address our gaps regarding NCLB. We have also instituted two other reading programs designed to target students with reading difficulties, not reading at the level they are supposed to. So far that seems to be working. (P7, p.3)</p>				

Table L5
Other Influences on Change in Teachers' Instructional Practices

Data source	Professional development	Experience	Outside influences	State and national policies
T1	We had a guest speaker give a presentation on L to J and then we incorporated that information into the following year. (T1, p.3)	I am trying to use more technology, I have been teaching for 20 years, and you definitely have to teach different now than you did when I first started. So, I am trying to integrate more and more technology into my preparation for the kids and letting them experience technology. (T1, p.1)		The entire district has been required to do this and when we looked at our test scores the vocabulary scores were low so we needed to do something to raise those scores. I think over time as we look at test scores we will see an increase in vocabulary scores. (T1, p.3)
T2		...A lot of it has just been trial and error on my own. Figuring out what works and does not work. (T2, p.2)		So much of education being geared towards standardized tests, I have had to keep up and make sure are kids are accountable and well-prepared. That is the biggest reason I have for the shift I have made in gearing my lessons more towards the SOL's. (T2, p.2)
T4				We have created something called proficiency checks and after we get through a unit or chapter, however we do it, we give them a set of questions which we basically know will be on the KAATS test given by the state department in the spring. This gives us some idea after we run the data; we do the scantrons, collect the data and do the number crunching. (T4, pp.3-4)
T5		So now I am giving up that control rather than saying, "hey this is what we are doing, this is what you need to know to okay you guys are in control, this is where I want you to go, and let them discover the information themselves." That might be the result of me just being more comfortable in the classroom, just being more mature in the classroom. (T5, pp.1-2)		

(table continues)

Table L5 (continued)

Data source	Professional development	Experience	Outside Influences	State and national policies
T6	I do a project that is basically a physics vector search. The students have to do vector math and then go around the school into different people's classrooms and try to find little clues that I have left them, if they have done the math right. (T6, p.4)			
T7	In the math department we are looking at this particular year to be looking at formative assessments and trying to develop ones in each of our classes that can be given throughout the department. (T7, p.4)	If I was to answer this up to three years ago I would probably have said (a), I teach the same way each year, but as I said earlier I am beginning to incorporate new strategies. So I would say that the answer would probably be (b), I try to introduce at least one new strategy each year. (T7, p. 4)		
T8			Last year I went through the National Board Certification process, so I made a lot of changes because of that. It made me focus my teaching more on facilitating small group work and incorporating that more into my lesson planning because that was a weakness of mine.... (T8, p.1)	
T9	Again the English teacher next door and then just reading a lot of different things and going to several conferences over the past couple of years where I have gotten to hear different speakers and get ideas from that which as been a huge help as well. (T9, p.4)	A lot of it too, has just been playing around with stuff, like playing around with that website and setting up the rubric and how to get them on it and figuring out the Smartboard and Senteo software. (T9, p.2)		

(table continues)

Table L5 (continued)

Data source	Professional development	Experience	Outside Influences	State and national policies
P1				I think just being educated about it. I think that realizing they can increase their test scores and increase student's mastery of standards and understanding of content material if they differentiate instruction. (P1, p.3)
P2				One of the things in Nebraska we don't have an exit test or one-test type system. We have assessments at every grade level; they are teacher-developed assessments. (P2, p.3)
P3				When you look at test results and NCLB, I am not a huge proponent of all of it but there are pieces that are positive coming out of that in that we are looking at subgroups and how they are performing. That really glares for us that our lower socioeconomic groups and minority groups are not performing near as well as white, middle to upper class kids. The NCLB Act really brought that home having that information. (P3, p.1)
P4	We did differentiated instruction last year and we will be continuing it this year. In the past we may have mentioned it, we may have looked for it, but now we have more intensive training on it. (P4, p.5)		We have utilized a lot of district personnel. We have worked a lot with College Board. We have also been a Governor's school so we did a lot with the SAT's, ACT's, and PSAT's (P4, p.2)	Teachers have access to the data so that if they are benchmark testing or through FCAT testing we have the actual data, which is the benchmarks, on each specific student so that teachers can remediate and do different instruction with them so that students get it and not only that they get it through the instruction but that they know what they are missing so that they can remediate on their own as well. (P4, p.2)

(table continues)

Table L5 (continued)

Data source	Professional development	Experience	Outside Influences	State and national policies
P5	There is different ways that professional development is offered. There is the standard ones, teachers are there and it is done face-to-face. They have the digital blackboards where you just sit in front of the computer and learn different techniques. They also have what we call Atomic Learning which is similar to blackboard where once again you are doing your learning online to improve your abilities. (P5, p.2)	I think number one the younger teachers that are coming in are more affixed to utilizing technology. They grew up in that era, I shall say. (P5, p.1)		
P6				I believe some of the strategies they are using is that they are moving away from more lecture to more of group learning and pure learning, and small learning groups. (P6, p.2)
P7				For example, we have gone to a collaborative model for special ed. students. They do not go to resource rooms, rather if at all possible, if there skills abilities will allow it at all, we send them to a collaborative setting that has a special education and regular education teacher. By getting the content delivered by a regular ed. teacher we have found that their scores get better. Collaborative teaching is one of the things we have done to address our gaps regarding NCLB. (P7, pp.3-4)

(table continues)

Table L5 (continued)

Data source	Professional development	Experience	Outside Influences	State and national policies
P8			I know in Connecticut we talk a lot about 21 st Century Skills and one of the big P8 76 pieces of that is technology. (P8, p.4)	
P9		You mentioned that your teachers are emphasizing technology more, why do you think teachers are making that change? [Number one I think they are more comfortable with it.] (P9, p.2))		Well, we don't have a choice really. I am sure it is the same with you, we have these state mandated achievement tests. In Ohio we are graded as a district and as a building and of course now with AYP you have to meet your AYP goals in order to avoid the consequences of not meeting the goals. (P9, p.4)

Table L6 (continued)
Other Influences on Change in Teachers' Instructional Practices

Data source	School improvement plan	Graduate work	Personal belief
T1	Another thing we have done as a district is that we have tried to go to using graphic organizers a lot. That has been a school improvement process goal. We want gets to not only be able to do graphic organizers but be able to create their own in their own settings when they are not instructed to do so. So, try to incorporate more graphic organizers to touch the different types of learning styles that the kids have. (T1, p.2).	I have taken two graduate level computer classes lately that have helped with my computer skills. (T1, p.3)	
T2		I really discovered educational technology through graduate work I was doing. (T2, p.2)	
T4		While working on my Master's in Educational Leadership we had to do some action research and I did mine on student-centered lessons. It made things so much better with student-centered instruction then the teacher dominating the class. (T4, p.1)	I wanted them to get on the internet because I think it is a good learning tool and I did not know exactly what I wanted to do until I got on the internet and just played around for a whole summer. (T4, p.3)

(table continues)

Table L6 (continued)

Data source	School improvement plan	Graduate work	Personal belief
T6		The main impact on my change with inquiry-based lessons would probably be the Master's program I am involved in. It is very inquiry based, very much looking at what is the role of inquiry, what is the nature of science, how do we teach that to our students. (T6, p.2)	I am a Science teacher and as far as the Science's go it is better for students to have a more interactive approach with Science. They tend to understand the concepts better. They retain it for a longer period of time. If they do decide to continue on with Science when they get to college, most colleges expect them to be able to interact with the concepts and not just regurgitate information. My approach is kind of a preparation for college. (T6, p.1)
T7			Simply because I see that it's the direction that education is taking at the present point in time, having the students become more engaged. (T7, pp.1-2).
T9		The webpage where the students go on-line together, when I was in graduate school we had to do some kind of new technology in the classroom that we focused on and had to do research on. (T9, p.2)	Well I think it makes learning more engaging. I think it makes the students remember more what they are doing and they are more interested. Its more real-life and students are just more involved in the class when they are doing something. (T9, pp.3-4)

(table continues)

Table L6 (continued)

Data source	School improvement plan	Graduate work	Personal belief
P1			Desire to help all kids instead of just a few. We get into this business as teachers to do that, and sometimes we forget about that goal. (P1, p.3)
P2	Main reason is that they bought into the school improvement goals we set and those are research-based strategies [L to J strategies] that we as a school determined would be appropriate for what we wanted to accomplish and they have been very involved in the whole process as far as helping to set the goals. (P2, p.1)		
P6	Of course we always go through our school improvement plan. In North Carolina we have a school improvement plan that has teachers, parents, and administrators on it. In high schools we have students on it. I mention to them what I think our goals should be and part of our goal was to improve the school technologically and that was part of it as well. (P6, p.5)		

APPENDIX M

QUANTITATIVE STUDY QUESTIONNAIRE

Directions: Please complete the following questions on changes you have made in your instructional practices during the past TWO years.

Please complete the following background questions.

1. What is your gender?

- Male
- Female

2. How many years of experience have you had in PK-12 education, counting this year?

Yrs. of Exp.

3. What degree(s) do you hold? (Please check all that apply.)

- Bachelors
- Masters
- Doctoral
- Ed.S. or Certificate of Advanced Studies

4. Which of these best describes your preparation program for becoming a teacher?

- Traditional education preparation program provided by a college or university
- Alternative route to certification
- Career switcher program
- other:

5. In what area(s) are you currently teaching? (Please check all that apply.)

- English
- Math
- Science
- Social Studies
- Foreign Language
- Health and P.E.

- Art
- Music
- Business
- Technology Education
- Marketing
- Family and Consumer Science
- Special Education

other:

6. Are you endorsed in each area that you are teaching?

- Yes
- No

7. What is your current certification?

- Collegiate professional license
- Postgraduate professional license
- Technical professional license
- Provisional license
- Special education conditional license
- Pupil personnel services license
- Division superintendent license
- Administration or supervision license
- No license

other:

Directions: For each teaching strategy, please indicate the amount of change in your use of the strategy during the last two school years.

8. Direct instruction

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy

- Have not used strategy

9. Computers in my instruction

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

10. Internet in my instruction

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

11. Graphic organizers

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

12. Cooperative groups

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

13. Critical thinking skills

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy

14. Strategies that address different learning styles

- Much decrease in use of these strategies
- Some decrease in use of these strategies
- No change in use of these strategies
- Some increase in use of these strategies
- Much increase in use of these strategies
- Have not used these these strategies

15. Enrichment activities

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

16. Hands-on learning activities

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

17. Classroom discussion

- Much decrease in use of strategy
- Some decrease in use of strategy

- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

18. Student inquiry

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

19. Review activities

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

20. Questioning

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

21. Giving feedback on assignments

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy

- Much increase in use of strategy
- Have not used strategy

22. Student projects

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

23. Use of assessments

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

24. Collaborative teaching

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

25. Concept-based instruction

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

26. Cross-curricular activities

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

27. Focus on vocabulary

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

28. Homework

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

29. Incorporating writing

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

30. Incorporating reading

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

31. Standards-based instruction

- Much decrease in use of strategy
- Some decrease in use of strategy
- No change in use of strategy
- Some increase in use of strategy
- Much increase in use of strategy
- Have not used strategy

Thank you for finishing Parts I and II. Please go on to Part III. --Paul

Directions: Please indicate if you strongly disagree, disagree, agree, or strongly agree with each statement.

32. My principal always provides resources that I ask for.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

33. Post-observation conferences by my principal are just a formality.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

34. My principal makes all decisions regarding instruction.

- Strongly disagree
- Disagree

- Agree
- Strongly agree

35. Graduate level classes have improved my teaching skills.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

36. Central office sets instructional goals for teachers.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

37. Experience has changed the instructional strategies I use.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

38. My school's literacy coach has provided strategies on how to teach reading.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

39. My school does not have a Technology Resource Teacher.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

40. Family members have influenced my teaching.

- Strongly disagree

- Disagree
- Agree
- Strongly agree

41. My principal communicates instructional goals for the school.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

42. My principal recognizes teachers for their achievements.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

43. I am encouraged by my principal to participate in professional development opportunities.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

44. I feel supported by my principal.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

45. Teachers in my school are not provided professional development opportunities.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

46. I feel comfortable approaching my colleagues for new instructional ideas.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

47. I change the way I teach to accommodate the needs of my students.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

48. The No Child Left Behind Act has forced me to implement strategies to reach diverse learners.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

49. The goals of my school's improvement plan have changed what I do in the classroom.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

50. I have received resources to support instruction from sources outside of my school.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

51. My departmental chair discusses instructional strategies with members of my department.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

52. My assistant principal has provided me resources to support instruction.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

53. I believe that traditional teaching methods are the most effective way for students to learn.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

54. I have learned to use technology in the classroom from a Technology Resource Teacher.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

55. My family is not supportive of my teaching career.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

56. My assistant principal holds instructional conferences with teachers.

- Strongly disagree
- Disagree
- Agree

Strongly agree

57. Changes I make in the classroom come from my own beliefs about how students learn.

Strongly disagree

Disagree

Agree

Strongly agree

58. My departmental chair is an instructional leader.

Strongly disagree

Disagree

Agree

Strongly agree

59. I have incorporated instructional strategies included in my school's improvement plan.

Strongly disagree

Disagree

Agree

Strongly agree

60. I have learned new instructional strategies from sources outside of my school system.

Strongly disagree

Disagree

Agree

Strongly agree

61. My school's literacy coach has motivated me to focus on teaching reading.

Strongly disagree

Disagree

Agree

Strongly agree

62. Experience has made me more willing to take instructional risks.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

63. I have learned new instructional strategies from graduate classes.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

64. I receive resources to support instruction from central office.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

65. Feedback from my students has motivated me to change how I teach.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

66. Scores on state tests have forced me to focus on remediation.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

67. Teachers in my school plan together.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

68. My principal dictates how I teach.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

69. I have learned new instructional practices from professional development opportunities.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

70. My principal handles student discipline.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

71. Professional development is not made accessible by my principal.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

72. If I need resources they are made available to me by my principal.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

73. I am frequently observed by my principal.

- Strongly disagree
- Disagree
- Agree

Strongly agree

74. My principal uses faculty meetings to praise teachers.

Strongly disagree

Disagree

Agree

Strongly agree

75. My principal communicates a clear vision for the school.

Strongly disagree

Disagree

Agree

Strongly agree

76. My principal provides ample resources for my work.

Strongly disagree

Disagree

Agree

Strongly agree

77. My principal alerts me to college courses for professional development.

Strongly disagree

Disagree

Agree

Strongly agree

78. My principal communicates instructional goals during faculty meetings.

Strongly disagree

Disagree

Agree

Strongly agree

79. My principal celebrates achievements by teachers.

Strongly disagree

Disagree

- Agree
- Strongly agree

80. My principal does not discuss classroom observations with me.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

81. Professional development has changed the way I teach.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

82. My students influence how I teach.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

83. I get new instructional ideas from members of my department.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

84. My principal directs teachers to use certain instructional practices.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

85. State and national policies have little impact on what I do in the classroom.

- Strongly disagree

- Disagree
- Agree
- Strongly agree

86. Graduate classes I have taken do not relate to what I do in the classroom.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

You are half way through Part III, the final section of the questionnaire. Thank you for your patience in completing this questionnaire-- Paul

87. Experience has improved my teaching skills.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

88. I have received training on reading strategies from a literacy coach.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

89. I am not aware of instructional resources outside of my school system.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

90. Central office support has encouraged changes in my teaching.

- Strongly disagree
- Disagree
- Agree

Strongly agree

91. My principal prevents disruptions during the school day.

Strongly disagree

Disagree

Agree

Strongly agree

92. My school's improvement plan focuses on new instructional strategies.

Strongly disagree

Disagree

Agree

Strongly agree

93. My assistant principal discusses classroom observations with me.

Strongly disagree

Disagree

Agree

Strongly agree

94. I receive instructional resources from my departmental chair.

Strongly disagree

Disagree

Agree

Strongly agree

95. My own children's experiences in school have influenced my teaching.

Strongly disagree

Disagree

Agree

Strongly agree

96. The Technology Resource Teacher in my school is knowledgeable about instructional practices.

Strongly disagree

- Disagree
- Agree
- Strongly agree

97. I receive suggestions from my principal following observations.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

98. Instructional goals are posted throughout my school.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

99. Teachers in my school are aware of the instructional goals for our school.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

100. Teachers are publicly praised by my principal.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

101. My principal allocates money each year for teachers to spend.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

102. My principal brings in experts in certain areas for professional development.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

103. Professional development has no impact on what I do in the classroom.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

104. Instructional time is protected by my principal.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

105. Decisions regarding instruction in my school are top down.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

106. I have incorporated more technology because of my students.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

107. I share instructional strategies with teachers in my school.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

108. My instruction is focused on state standards.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

109. I rarely communicate with members of the central office.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

110. How I learned as a student has influenced how I teach.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

111. I am not familiar with goals included in my school's improvement plan.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

112. I am not aware of a literacy coach in my school.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

113. I am influenced by organizations outside of my school.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

114. My assistant principal provides suggestions following classroom observations.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

115. My personal beliefs about education influence what I do in the classroom.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

116. I have a strong, collegial relationship with my departmental chair.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

117. I have received instructional support from a Technology Resource Teacher.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

118. My children have influenced my teaching.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

119. I am unwilling to change my personal beliefs about how students should learn.

- Strongly disagree
- Disagree

- Agree
- Strongly agree

120. My principal does not supply resources for my work.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

121. Rewards provided by my principal motivate me.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

122. Professional development supports what I do in the classroom.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

123. I discuss new ways to teach a subject with other teachers.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

124. I have used instructional strategies I learned from graduate work.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

125. I have never used instructional resources from outside of my school system.

- Strongly disagree

- Disagree
- Agree
- Strongly agree

126. I never discuss instruction with my departmental chair.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

127. I have learned new instructional strategies from my own children.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

128. I have received technology support from a Technology Resource Teacher.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

129. My principal organizes in-service activities.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

130. I receive feedback from my principal following observations.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

131. My principal makes decisions regarding instructional changes.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

132. My principal deals with disgruntled parents.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

133. I use more technology because students are accustomed to it.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

134. I use data from state tests to drive my instruction.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

135. Graduate work has not influenced what I do in the classroom.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

136. Central office directives influence how I teach.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

137. My personal experiences have influenced the way I teach.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

138. I am not aware of a school improvement plan for my school.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

139. I have never received support from a literacy coach.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

140. The instructional strategies I use are the ones I feel are beneficial to students.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

141. I discuss instructional methods with my assistant principal.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

Thank you for taking the time out of your day to complete this questionnaire. I sincerely appreciate your help. When you are finished please click SUBMIT. Paul Lineburg

APPENDIX N
DOMAINS AND QUESTIONS PRIOR TO THE CONTENT VALIDATION PROCESS

Table N

The domains and questions prior to the content validation process

Domain 1: Promoting professional development

Description: The extent to which principals alert and make accessible to teachers opportunities for professional growth.

Items:

1. My principal organizes in-service activities.
 9. My principal provides monetary support for professional development.
 17. My principal encourages the study of teaching.
 22. Professional development is not made accessible by my principal.
 33. I am encouraged by my principal to participate in professional development opportunities.
 41. My principal participates in professional development activities with teachers.
 45. My principal brings in experts in certain areas for professional development.
 54. My principal alerts me to college courses for professional development.
 67. My principal encourages peer coaching.
 68. Central office provides most professional development activities.
-

Domain 2: Providing resources

Description: Supplying teachers with the necessary materials for instruction.

Items:

2. My principal allocates money each year for teachers to spend.
 15. I do not receive appropriate resources for my classroom from my principal.
 24. Most resources come from sources outside of the school.
 29. Resources provided by my principal support school goals.
 34. My principal always provides resources that I ask for.
 46. Most resources come from central office.
 49. My creativity is limited by a lack of resources.
 57. My principal does not supply resources for my work.
 61. My principal provides ample resources for my work.
 69. If I need resources they are made available to me by my principal.
-

(table continues)

Table N (continued)

Domain 3: Communicating goals

Description: Efforts made by principals to share instructional expectations with teachers.

Items:

- 3. My principal communicates instructional goals through post-observation conferences.
 - 8. I consider my school's instructional goals when planning lessons.
 - 14. I am not aware of my school's instructional goals.
 - 21. My principal communicates instructional goals for the school.
 - 25. My school does not have instructional goals.
 - 35. My principal communicates instructional goals during faculty meetings.
 - 47. My principal developed a mission for our school.
 - 48. My principal communicates a clear vision for the school.
 - 56. Instructional goals are posted throughout my school.
 - 65. Teachers in my school are aware of instructional goals.
-

Domain 4: Providing incentives for teachers

Description: Promoting teacher improvement and growth through public and private recognition of classroom performance, material rewards, and persuasion.

Items:

- 6. My principal does not recognize teachers for their classroom performance.
 - 16. My principal uses reprimands for incentives to improve.
 - 20. Teachers are publicly praised by my principal.
 - 28. I have been praised by my principal.
 - 36. My principal provides material rewards.
 - 42. Most incentives come from sources outside of the school.
 - 50. My principal uses faculty meetings to praise teachers.
 - 60. My principal celebrates achievements by teachers.
 - 66. Rewards provided by my principal motivate me.
 - 70. My principal recognizes teachers for their achievements.
-

(table continues)

Table N (continued)

Domain 5: Supervising instruction

Description: Giving feedback on instructional strategies during observations, post-observation conferences, formal evaluations, and informal classroom visits.

Items:

- 5. I have not been observed by my principal
 - 13. My principal values my input during post-observation conferences
 - 18. I feel threatened by my principal's presence during observations
 - 27. My principal does not discuss classroom observations with me
 - 30. Post-observation conferences by my principal are just a formality
 - 38. I receive suggestions from my principal following observations
 - 43. I am frequently observed by my principal
 - 51. I receive feedback from my principal following observations
 - 59. I have only been observed by central office staff
 - 64. Instructional conferences are not used by my principal
-

Domain 6: Providing support¹

Description: Encouraging instructional change and improvement by supporting what teachers do in the classroom.

Items:

- 7. My principal prevents disruptions during the school day.
 - 10. My principal has an encouraging demeanor.
 - 12. My principal handles student discipline.
 - 19. Instructional time is protected by my principal.
 - 26. My principal does not provide ample time to prepare my lessons.
 - 32. I feel supported by my principal.
 - 37. The only support I receive is from central office.
 - 52. I am not encouraged by my principal to try new ideas.
 - 55. My principal has a strong knowledge of instruction.
 - 62. My principal deals with disgruntled parents.
-

(table continues)

Table N (continued)

Domain 7: Issuing directives¹

Description: Influencing teachers to change by introducing ideas that all staff members must follow.

Items:

- 4. Instructional decisions in my school are made by my principal.
 - 11. Instructional decisions in my school are made by teachers.
 - 23. My principal dictates how I teach.
 - 31. Central office initiates instructional changes.
 - 39. My principal encourages teachers to use collaborative decision making on instructional issues.
 - 40. Decisions regarding instruction in my school are top down.
 - 44. My principal directs teachers to use certain instructional practices.
 - 53. My principal provides teachers flexibility with making instructional changes.
 - 58. My principal makes decisions regarding instructional changes.
 - 63. My principal allows teachers to make decisions regarding instruction.
-

Domain 8: Professional development

Description: Opportunities provided to teachers for professional growth.

Items:

- 8. Professional development opportunities are provided by sources outside my school.
 - 9. I have learned new instructional practices from professional development opportunities.
 - 15. My school system provides monetary resources for attending professional development opportunities.
 - 17. Professional development in my school includes on-going support in the classroom.
 - 33. Teachers in my school are not provided professional development Opportunities.
 - 46. My school system provides teachers with professional development days.
 - 51. Professional development has no impact on what I do in the classroom.
 - 56. Professional development supports what I do in the classroom.
 - 63. Professional development has changed the way I teach.
 - 71. I have learned new instructional practices from out-of-town conferences.
-

(table continues)

Table N (continued)

Domain 9: Collegiality among teachers

Description: The extent to which teachers interact and support one another on instructional issues.

Items:

- 7. I feel comfortable approaching my colleagues for new instructional ideas.
 - 14. I get most of my new ideas from other teachers.
 - 18. I am not willing to share instructional strategies with other teachers.
 - 30. I am motivated to change how I teach from observing colleagues.
 - 35. My colleagues are supportive of what I do in the classroom.
 - 47. Teachers in my school are not willing to share ideas with each other.
 - 54. I get new instructional ideas from members of my department.
 - 59. Teachers in my school plan together.
 - 73. I discuss new ways to teach a subject with other teachers.
 - 78. I share instructional strategies with teachers in my school.
-

Domain 10: State and national policies

Description: Initiatives at the state and national levels that focus on standards and accountability.

Items:

- 1. The No Child Left Behind Act has changed what I do in the classroom.
 - 13. The No Child Left Behind Act has forced me to implement strategies to reach diverse learners.
 - 19. State standards have limited my use of creativity.
 - 29. State and national policies have little impact on what I do in the classroom.
 - 32. I feel pressured to teach only material included in state standards.
 - 37. My instruction is focused on state standards.
 - 50. Scores on state tests have forced me to change how I teach.
 - 65. I use data from state tests to drive my instruction.
 - 70. Accountability for student test scores has changed how I teach.
 - 74. Scores on state tests have forced me to focus on remediation.
-

(table continues)

Table N (continued)

Domain 11: Students¹

Description: The extent to which students provide teachers with new ideas and ways to improve instruction.

Items:

- 2. I have incorporated strategies to meet the diverse learning needs of my students.
 - 16. I use more technology in my lessons because students are more attentive.
 - 20. Feedback from my students has motivated me to change how I teach.
 - 28. I have incorporated more technology because of my students.
 - 31. I tailor my instructional methodology to meet the needs of all students.
 - 39. I change the way I teach to accommodate the needs of my students.
 - 49. I have incorporated strategies to make students more active learners.
 - 58. I have changed the way I teach because today's kids learn differently.
 - 64. My students influence how I teach.
 - 66. I use more technology because students are accustomed to it.
-

Domain 12: Central office staff¹

Description: Support given from central office staff by distributing resources, providing professional development, and implementing district-wide initiatives.

Items:

- 6. Central office is not receptive to teacher needs.
 - 21. Our superintendent provides a clear instructional vision for the school system.
 - 40. Central office adds professional development time to the school calendar.
 - 41. Professional development opportunities are provided by central office.
 - 45. Central office support has encouraged changes in my teaching.
 - 48. I receive instructional support from central office staff members.
 - 52. Central office sets instructional goals for teachers.
 - 57. I rarely communicate with members of central office.
 - 67. I receive resources to support instruction from central office.
 - 79. Central office directives influence how I teach.
-

(table continues)

Table N (continued)

Domain 13: Graduate work

Description: The extent to which knowledge learned from graduate level courses influences what teachers do in the classroom.

Items:

- 5. Research in graduate school has increased my knowledge of effective teaching.
 - 12. I have implemented more technology in the classroom because of graduate work.
 - 22. Graduate classes I have taken do not relate to what I do in the classroom.
 - 27. Graduate work has influenced how I teach.
 - 38. Graduate work has increased my repertoire of instructional strategies.
 - 42. I have not used instructional practices I learned from graduate work.
 - 53. Graduate level classes have improved my teaching skills.
 - 68. I have learned new instructional strategies from graduate classes.
 - 75. Graduate work has not influenced what I do in the classroom.
 - 80. I have used instructional strategies I learned from graduate work.
-

Domain 14: Experience

Description: The amount of influence years of experience has on teachers' classroom instruction.

Items:

- 4. Experience has made me more willing to change what I do in the classroom.
 - 11. I implement more instructional strategies because experience has made me more comfortable with them.
 - 23. The instructional strategies I use are ones that helped me learn as a student.
 - 25. Experience has made me more willing to take instructional risks.
 - 36. Experience has improved my teaching skills.
 - 43. How I learned as a student has influenced how I teach.
 - 60. A lot of what I do in the classroom is from trial and error.
 - 62. Experience has changed the instructional strategies I use.
 - 69. My personal experiences have influenced the way I teach.
 - 77. I use more instructional strategies now than I did as a young teacher.
-

(table continues)

Table N (continued)

Domain 15: Outside influences¹

Description: Instructional support given to teachers by people and organizations outside of school systems.

Items:

- 3. Most professional development I have received comes from sources outside of my school system.
 - 10. I have learned new instructional strategies from sources outside of my school system.
 - 24. Participating in the National Board Certification process has influenced what I do in the classroom.
 - 26. My school system is supportive of teachers working with outside sources.
 - 34. My school system does not support teachers working with outside sources.
 - 44. I have never used instructional resources from outside of my school system.
 - 55. I have received resources to support instruction from sources outside of my school.
 - 61. I am not aware of instructional resources outside of my school system.
 - 72. I am influenced by organizations outside of my school.
 - 76. 21st Century Skills have influenced me to incorporate more technology.
-

Domain 16: School improvement plan¹

Description: Promoting school-wide growth by concentrating on goals that focus on areas of improvement.

Items:

- 1. The goals of my school's improvement plan have changed what I do in the classroom.
 - 11. I am not familiar with goals included in my school's improvement plan.
 - 14. Our school improvement plan provides an instructional vision for my school.
 - 20. My school's improvement plan focuses on new instructional strategies.
 - 29. The goals in my school's improvement plan have changed my instruction.
 - 31. I have incorporated instructional strategies included in my school's improvement plan.
 - 43. Teachers are an integral part of the school improvement process.
 - 50. Teachers in my school have bought into school improvement goals.
 - 56. I participated in forming our school improvement plan.
 - 62. I am not aware of a school improvement plan for my school.
-

(table continues)

Table N (continued)

Domain 17: Literacy coach¹

Description: The extent to which a literacy coach provides teachers with strategies for teaching reading and writing.

Items:

- 2. My school's literacy coach has provided strategies on how to teach reading.
 - 8. My school has a literacy coach.
 - 21. Literacy is not a focus in my school.
 - 24. Teachers in my school have received training from a literacy coach.
 - 36. I have received training on reading strategies from a literacy coach.
 - 42. I am not aware of a literacy coach in my school.
 - 48. I have never received support in teaching reading.
 - 51. My school does not have a literacy coach.
 - 60. My school's literacy coach has motivated me to focus on teaching reading.
 - 66. I have never received support from a literacy coach.
-

Domain 18: Personal beliefs

Description: The amount of influence teachers' own beliefs have on classroom instruction.

Items:

- 3. Changes I make in the classroom come from my own beliefs about how students learn.
 - 12. My beliefs about how students should learn allows me to try new instructional strategies.
 - 23. Most of the changes I make come from personal reflection.
 - 27. I believe that traditional teaching methods are the most effective way for students to learn.
 - 30. I am unwilling to change my personal beliefs about how students should learn.
 - 38. I believe traditional teaching methods impede student learning.
 - 49. My beliefs about how students should learn have changed since I first started teaching.
 - 57. My personal beliefs about education influence what I do in the classroom.
 - 64. The instructional strategies I use are ones I feel are beneficial to students.
 - 67. I have used instructional strategies that I believe help students learn better.
-

(table continues)

Table N (continued)

Domain 19: Assistant principal¹

Description: The amount of instructional leadership provided by an assistant principal.

Items:

- 4. My assistant principal provides suggestions following classroom observations.
 - 9. My assistant principal has provided me resources to support instruction.
 - 15. I rarely see my assistant principal.
 - 35. My assistant principal discusses classroom observations with me.
 - 39. My assistant principal handles student discipline.
 - 44. My assistant principal is visible throughout the school.
 - 45. I discuss only discipline issues with my assistant principal.
 - 53. I have never received instructional support from my assistant principal.
 - 65. I discuss instructional methods with my assistant principal.
 - 68. My assistant principal holds instructional conferences with teachers.
-

Domain 20: Departmental chair

Description: The amount of instructional leadership provided by departmental chairs.

Items:

- 5. My departmental chair discusses instructional strategies with members of my department.
 - 10. My departmental chair has organized professional development.
 - 13. I receive instructional support from my departmental chair.
 - 18. I do not feel comfortable asking my departmental chair for suggestions.
 - 37. My departmental chair is not an instructional leader.
 - 41. My departmental chair shares instructional strategies with me.
 - 47. I receive instructional resources from my departmental chair.
 - 58. I have a strong, collegial relationship with my departmental chair.
 - 61. I never discuss instruction with my departmental chair.
 - 69. My departmental chair is an instructional leader.
-

(table continues)

Table N (continued)

Domain 21: Technology resource teacher¹

Description: The amount of instructional support provided by technology resource teachers.

Items:

- 6. I have learned to use technology in the classroom from a Technology Resource Teacher.
 - 17. My ideas for using technology in the classroom comes from my own trial and error.
 - 19. I have received ideas for using technology from a Technology Resource Teacher.
 - 22. The Technology Resource Teacher in my school is knowledgeable about instructional practices.
 - 26. My school's Technology Resource Teacher does not provide instructional support.
 - 33. I have received instructional support from a Technology Resource Teacher.
 - 40. I have received technology support from a Technology Resource Teacher.
 - 54. My school does not provide support for technology.
 - 63. My school does not have a Technology Resource Teacher.
 - 70. The only technology support I have received is from other teachers.
-

Domain 22: Daughter and family members¹

Description: The extent to which siblings provide teachers with new ideas and ways to improve instruction.

Items:

- 7. My own children's experiences in school have influenced my teaching.
 - 16. Family members have influenced my teaching.
 - 25. Suggestions from my own children have led me to alter my lessons.
 - 28. My children have influenced my teaching.
 - 32. My child's experience in college has influenced my teaching style.
 - 34. My own family has influenced my teaching.
 - 46. I have learned new instructional strategies from my own children.
 - 52. My family is not supportive of my teaching career.
 - 55. I have talked with my own children about teaching strategies.
 - 59. My family does not understand what teaching involves.
-

APPENDIX O

CONTENT VALIDATION INSTRUMENTS FOR TEACHERS' CHANGE IN INSTRUCTIONAL PRACTICES QUESTIONNAIRE

Table O1

Content validation instrument for Domains 1 through 7

Introduction:

This is a content validation instrument. The purpose of this instrument is to improve items on a questionnaire that will be distributed to a national sample of high school teachers. Please read the directions below.

Directions:

- Please complete the following five tasks:

Task 1: Domain placement of items: Below is a set of domains. Each domain is a set of statements that contains principal leadership strategies that may affect teachers' instructional practices. Your task is to read each statement and choose the domain in which you believe it fits best. Definitions of each domain are on the top of each content validation table.

- (1) Promoting professional development
- (2) Providing resources
- (3) Communicating goals
- (4) Providing incentives for teachers
- (5) Supervising instruction
- (6) Providing support
- (7) Issuing directives

Task 2: Association ratings: Please rate how strongly you think each item is associated with the domain you selected for it.

- 1 = Very weak association
- 2 = Weak association
- 3 = Strong association
- 4 = Very strong association

Task 3: Clarity ratings: Please indicate the level of clarity for each statement. I want to make sure questions are not confusing or misleading.

- 1 = Very unclear, delete
- 2 = Somewhat clear, revise
- 3 = Clear, leave as written

Table O1 (continued)

Task 4: Suggested revisions of items: Please write suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space provided at the bottom of each table.

Task 5: Identification of instructional strategies: After the last content validation table you will see a list of instructional strategies. Please identify the instructional strategies you feel are typically used by yourself or other teachers in your building.

- **Not all of these items will be included on my questionnaire. Your feedback is essential in developing my questionnaire, so your honest critique is needed.**
- **Once you have responded to each item, please email your responses back to me. My email is plineburg@rcs.k12.va.us**
- **If you have any questions, you may email me or call me at (540) 562-3900 ext. 20004 or (540) 312-4746.**
- **Thanks again for your willingness to help with this part of my study.**

Table O1 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (1) **Promoting professional development.** The extent to which principals alert and make accessible to teachers opportunities for professional growth.
- (2) **Providing resources.** Supplying teachers with the necessary materials for instruction.
- (3) **Communicating goals.** Efforts made by principals to share instructional expectations with teachers.
- (4) **Providing incentives for teachers.** Promoting teacher improvement and growth through public and private recognition of classroom performance, material rewards, and persuasion.
- (5) **Supervising instruction.** Giving feedback on instructional strategies during observations, post-observation conferences, formal evaluations, and informal classroom visits.
- (6) **Providing support.** Encouraging instructional improvement by supporting what teachers do in the classroom, protecting instructional time, handling student discipline, and dealing with disgruntled parents.
- (7) **Issuing directives.** Influencing teachers to change by introducing ideas that all staff members must follow.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
1. My principal organizes in-service activities.			
2. My principal allocates money each year for teachers to spend.			
3. My principal communicates instructional goals through post-observation conferences.			
4. Instructional decisions in my school are made by my principal.			
5. I have not been observed by my principal.			
6. My principal does not recognize teachers for their classroom performance.			

7. My principal prevents disruptions during the school day.			
8. I consider my school's instructional goals when planning lessons.			
9. My principal provides monetary support for professional development.			
10. My principal has an encouraging demeanor.			
11. Instructional decisions in my school are made by teachers.			
12. My principal handles student discipline.			
13. My principal values my input during post-observation conferences.			
14. I am not aware of my school's instructional goals.			
Revisions or other items.			

(table continues)

Table O1 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (1) **Promoting professional development.** The extent to which principals alert and make accessible to teachers opportunities for professional growth.
- (2) **Providing resources.** Supplying teachers with the necessary materials for instruction.
- (3) **Communicating goals.** Efforts made by principals to share instructional expectations with teachers.
- (4) **Providing incentives for teachers.** Promoting teacher improvement and growth through public and private recognition of classroom performance, material rewards, and persuasion.
- (5) **Supervising instruction.** Giving feedback on instructional strategies during observations, post-observation conferences, formal evaluations, and informal classroom visits.
- (6) **Providing support.** Encouraging instructional improvement by supporting what teachers do in the classroom, protecting instructional time, handling student discipline, and dealing with disgruntled parents.
- (7) **Issuing directives.** Influencing teachers to change by introducing ideas that all staff members must follow.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
15. I do not receive appropriate resources for my classroom from my principal.			
16. My principal uses reprimands for incentives to improve.			
17. My principal encourages the study of teaching.			
18. I feel threatened by my principal's presence during observations.			
19. Instructional time is protected by my principal.			
20. Teachers are publicly praised by my principal.			
21. My principal communicates instructional goals for the school.			

22.	Professional development is not made accessible by my principal.			
23.	My principal dictates how I teach.			
24.	Most resources come from sources outside of the school.			
25.	My school does not have instructional goals.			
26.	My principal does not provide ample time to prepare my lessons.			
27.	My principal does not discuss classroom observations with me.			
28.	I have been praised by my principal.			
Revisions or other items.				

(table continues)

Table O1 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (1) **Promoting professional development.** The extent to which principals alert and make accessible to teachers opportunities for professional growth.
- (2) **Providing resources.** Supplying teachers with the necessary materials for instruction.
- (3) **Communicating goals.** Efforts made by principals to share instructional expectations with teachers.
- (4) **Providing incentives for teachers.** Promoting teacher improvement and growth through public and private recognition of classroom performance, material rewards, and persuasion.
- (5) **Supervising instruction.** Giving feedback on instructional strategies during observations, post-observation conferences, formal evaluations, and informal classroom visits.
- (6) **Providing support.** Encouraging instructional improvement by supporting what teachers do in the classroom, protecting instructional time, handling student discipline, and dealing with disgruntled parents.
- (7) **Issuing directives.** Influencing teachers to change by introducing ideas that all staff members must follow.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
29. Resources provided by my principal support school goals.			
30. Post-observation conferences by my principal are just a formality.			
31. Central office initiates instructional changes.			
32. I feel supported by my principal.			
33. I am encouraged by my principal to participate in professional development opportunities.			
34. My principal always provides resources that I ask for.			

35.	My principal communicates instructional goals during faculty meetings.			
36.	My principal provides material rewards.			
37.	The only support I receive is from central office.			
38.	I receive suggestions from my principal following observations.			
39.	My principal encourages teachers to use collaborative decision making on instructional issues.			
40.	Decisions regarding instruction in my school are top down.			
41.	My principal participates in professional development activities with teachers.			
42.	Most incentives come from sources outside of the school.			
43.	I am frequently observed by my principal.			
Revisions or other items.				

(table continues)

Table O1 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (1) **Promoting professional development.** The extent to which principals alert and make accessible to teachers opportunities for professional growth.
- (2) **Providing resources.** Supplying teachers with the necessary materials for instruction.
- (3) **Communicating goals.** Efforts made by principals to share instructional expectations with teachers.
- (4) **Providing incentives for teachers.** Promoting teacher improvement and growth through public and private recognition of classroom performance, material rewards, and persuasion.
- (5) **Supervising instruction.** Giving feedback on instructional strategies during observations, post-observation conferences, formal evaluations, and informal classroom visits.
- (6) **Providing support.** Encouraging instructional improvement by supporting what teachers do in the classroom, protecting instructional time, handling student discipline, and dealing with disgruntled parents.
- (7) **Issuing directives.** Influencing teachers to change by introducing ideas that all staff members must follow.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
44. My principal directs teachers to use certain instructional practices.			
45. My principal brings in experts in certain areas for professional development.			
46. Most resources come from central office.			
47. My principal developed a mission for our school.			
48. My principal communicates a clear vision for the school.			
49. My creativity is limited by a lack of resources.			
50. My principal uses faculty meetings to praise teachers.			

51.	I receive feedback from my principal following observations.			
52.	I am not encouraged by my principal to try new ideas.			
53.	My principal provides teachers flexibility with making instructional changes.			
54.	My principal alerts me to college courses for professional development.			
55.	My principal has a strong knowledge of instruction.			
56.	Instructional goals are posted throughout my school.			
57.	My principal does not supply resources for my work.			
58.	My principal makes decisions regarding instructional changes.			
59.	I have only been observed by central office staff.			
Revisions or other items.				

(table continues)

Table O1 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (1) **Promoting professional development.** The extent to which principals alert and make accessible to teachers opportunities for professional growth.
- (2) **Providing resources.** Supplying teachers with the necessary materials for instruction.
- (3) **Communicating goals.** Efforts made by principals to share instructional expectations with teachers.
- (4) **Providing incentives for teachers.** Promoting teacher improvement and growth through public and private recognition of classroom performance, material rewards, and persuasion.
- (5) **Supervising instruction.** Giving feedback on instructional strategies during observations, post-observation conferences, formal evaluations, and informal classroom visits.
- (6) **Providing support.** Encouraging instructional improvement by supporting what teachers do in the classroom, protecting instructional time, handling student discipline, and dealing with disgruntled parents.
- (7) **Issuing directives.** Influencing teachers to change by introducing ideas that all staff members must follow.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
60. My principal celebrates achievements by teachers.			
61. My principal provides ample resources for my work.			
62. My principal deals with disgruntled parents.			
63. My principal allows teachers to make decisions regarding instruction.			
64. Instructional conferences are not used by my principal.			
65. Teachers in my school are aware of instructional goals.			
66. Rewards provided by my principal motivate me.			

67. My principal encourages peer coaching.			
68. Central office provides most professional development activities.			
69. If I need resources they are made available to me by my principal.			
70. My principal recognizes teachers for their achievements.			
Revisions or other items.			

- Go to next page for task 5

Table O1 (continued)

Please click inside the box beside each instructional strategy that you feel is typically used by yourself or other teachers in your building. List any others you think have been omitted from the list.

1. Assessments
2. Classroom discussion
3. Collaborative teaching
4. Concept-based instruction
5. Cooperative groups
6. Critical thinking skills
7. Cross-curricular activities
8. Differentiation
9. Direct instruction
10. Enrichment activities
11. Focus on vocabulary
12. Giving feedback on assignments
13. Graphic organizers
14. Hands-on learning activities
15. Homework
16. Incorporating reading and writing strategies
17. Questioning
18. Review activities
19. Standards-based instruction

List any other strategies you think should be included:

Table O2
Content validation instrument for domains 8 through 15

Introduction:

This is a content validation instrument. The purpose of this instrument is to improve items on a questionnaire that will be distributed to a national sample of high school teachers. Please read the directions below.

Directions:

- Please complete the following five tasks:

Task 1: Domain placement of items: Below is a set of domains. Each domain is a set of statements that contains influences that may affect teachers' instructional practices. Your task is to read each statement and choose the domain in which you believe it fits best. Definitions of each domain are on the top of each content validation table.

- (8) Professional development
- (9) Collegiality among teachers
- (10) State and national policies
- (11) Students
- (12) Central office staff
- (13) Graduate work
- (14) Experience
- (15) Outside influences

Task 2: Association ratings: Please rate how strongly you think each item is associated with the domain you selected for it.

- 1 = Very weak association
- 2 = Weak association
- 3 = Strong association
- 4 = Very strong association

Task 3: Clarity ratings: Please indicate the level of clarity for each statement. I want to make sure questions are not confusing or misleading.

- 1 = Very unclear, delete
- 2 = Somewhat clear, revise
- 3 = Clear, leave as written

Task 4: Suggested revisions of items: Please write suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space provided at the bottom of each table.

Table O2 (continued)

Task 5: Identification of instructional strategies: After the last content validation table you will see a list of instructional strategies. Please identify the instructional strategies you feel are typically used by yourself or other teachers in your building.

- **Not all of these items will be included on my questionnaire. Your feedback is essential in developing my questionnaire, so your honest critique is needed.**
- **Once you have responded to each item, please email your responses back to me. My email is plineburg@rcs.k12.va.us**
- **If you have any questions, you may email me or call me at (540) 562-3900 ext. 20004 or (540) 312-4746.**
- **Thanks again for your willingness to help with this part of my study.**

Table O2 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (8) **Professional development.** Opportunities provided to teachers for professional growth.
- (9) **Collegiality among teachers.** The extent to which teachers interact and support one another on instructional issues.
- (10) **State and national policies.** Initiatives at the state and national levels that focus on standards and accountability.
- (11) **Students.** The extent to which students provide teachers with new ideas and ways to improve instruction.
- (12) **Central office staff.** Support given from central office staff by distributing resources, providing professional development, and implementing district-wide initiatives.
- (13) **Graduate work.** The extent to which knowledge learned from graduate level courses influences what teachers do in the classroom.
- (14) **Experience.** The extent to which a teacher’s experience in the classroom affects his or her instruction.
- (15) **Outside Influences.** Instructional support given to teachers by people and organizations outside of school systems.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
1. The No Child Left Behind Act has changed what I do in the classroom.			
2. I have incorporated strategies to meet the diverse learning needs of my			
3. Most professional development I have received comes from sources outside of my school system.			
4. Experience has made me more willing to change what I do in the classroom.			

5. Research in graduate school has increased my knowledge of effective teaching.			
6. Central office is not receptive to teacher needs.			
7. I feel comfortable approaching my colleagues for new instructional ideas.			
8. Professional development opportunities are provided by sources outside my school.			
9. I have learned new instructional practices from professional development opportunities.			
10. I have learned new instructional strategies from sources outside of my school system.			
11. I implement more instructional strategies because experience has made me more comfortable with them.			
12. I have implemented more technology in the classroom because of graduate work.			
13. The No Child Left Behind Act has forced me to implement strategies to reach diverse learners.			
14. I get most of my new ideas from other teachers.			
15. My school system provides monetary resources for attending professional development opportunities.			
16. I use more technology in my lessons because students are more attentive.			
Revisions or other items.			

(table continues)

Table O2 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (8) **Professional development.** Opportunities provided to teachers for professional growth.
- (9) **Collegiality among teachers.** The extent to which teachers interact and support one another on instructional issues.
- (10) **State and national policies.** Initiatives at the state and national levels that focus on standards and accountability.
- (11) **Students.** The extent to which students provide teachers with new ideas and ways to improve instruction.
- (12) **Central office staff.** Support given from central office staff by distributing resources, providing professional development, and implementing district-wide initiatives.
- (13) **Graduate work.** The extent to which knowledge learned from graduate level courses influences what teachers do in the classroom.
- (14) **Experience.** The extent to which a teacher’s experience in the classroom affects his or her instruction.
- (15) **Outside Influences.** Instructional support given to teachers by people and organizations outside of school systems.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
1. Professional development in my school includes on-going support in the classroom.			
2. I am not willing to share instructional strategies with other teachers.			
3. State standards have limited my use of creativity.			
4. Feedback from my students has motivated me to change how I teach.			
5. Our superintendent provides a clear instructional vision for the school			

system.			
6. Graduate classes I have taken do not relate to what I do in the classroom.			
7. The instructional strategies I use are ones that helped me learn as a student.			
8. Participating in the National Board Certification process has influenced what I do in the classroom.			
9. Experience has made me more willing to take instructional risks.			
10. My school system is supportive of teachers working with outside sources.			
11. Graduate work has influenced how I teach.			
12. I have incorporated more technology because of my students.			
13. State and national policies have little impact on what I do in the classroom.			
14. I am motivated to change how I teach from observing colleagues.			
15. I tailor my instructional methodology to meet the needs of all students.			
16. I feel pressured to teach only material included in state standards.			
Revisions or other items.			

(table continues)

Table O2 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (8) **Professional development.** Opportunities provided to teachers for professional growth.
- (9) **Collegiality among teachers.** The extent to which teachers interact and support one another on instructional issues.
- (10) **State and national policies.** Initiatives at the state and national levels that focus on standards and accountability.
- (11) **Students.** The extent to which students provide teachers with new ideas and ways to improve instruction.
- (12) **Central office staff.** Support given from central office staff by distributing resources, providing professional development, and implementing district-wide initiatives.
- (13) **Graduate work.** The extent to which knowledge learned from graduate level courses influences what teachers do in the classroom.
- (14) **Experience.** The extent to which a teacher’s experience in the classroom affects his or her instruction.
- (15) **Outside Influences.** Instructional support given to teachers by people and organizations outside of school systems.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

	Potential questionnaire statements	Domain	Association	Clarity
17.	Teachers in my school are not provided professional development Opportunities.			
18.	My school system does not support teachers working with outside sources.			
19.	My colleagues are supportive of what I do in the classroom.			
20.	Experience has improved my teaching skills.			
21.	My instruction is focused on state standards.			

22.	Graduate work has increased my repertoire of instructional strategies.			
23.	I change the way I teach to accommodate the needs of my students.			
24.	Central office adds professional development time to the school calendar.			
25.	Professional development opportunities are provided by central office.			
26.	I have not used instructional practices I learned from graduate work.			
27.	How I learned as a student has influenced how I teach.			
28.	I have never used instructional resources from outside of my school system.			
29.	Central office support has encouraged changes in my teaching.			
30.	My school system provides teachers with professional development days.			
31.	Teachers in my school are not willing to share ideas with each other.			
32.	I receive instructional support from central office staff members.			
Revisions or other items.				

(table continues)

Table O2 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (8) **Professional development.** Opportunities provided to teachers for professional growth.
- (9) **Collegiality among teachers.** The extent to which teachers interact and support one another on instructional issues.
- (10) **State and national policies.** Initiatives at the state and national levels that focus on standards and accountability.
- (11) **Students.** The extent to which students provide teachers with new ideas and ways to improve instruction.
- (12) **Central office staff.** Support given from central office staff by distributing resources, providing professional development, and implementing district-wide initiatives.
- (13) **Graduate work.** The extent to which knowledge learned from graduate level courses influences what teachers do in the classroom.
- (14) **Experience.** The extent to which a teacher’s experience in the classroom affects his or her instruction.
- (15) **Outside Influences.** Instructional support given to teachers by people and organizations outside of school systems.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
33. I have incorporated strategies to make students more active learners.			
34. Scores on state tests have forced me to change how I teach.			
35. Professional development has no impact on what I do in the classroom.			
36. Central office sets instructional goals for teachers.			
37. Graduate level classes have improved my teaching skills.			

38.	I get new instructional ideas from members of my department.			
39.	I have received resources to support instruction from sources outside of my school.			
40.	Professional development supports what I do in the classroom.			
41.	I rarely communicate with members of central office.			
42.	I have changed the way I teach because today's kids learn differently.			
43.	Teachers in my school plan together.			
44.	A lot of what I do in the classroom is from trial and error.			
45.	I am not aware of instructional resources outside of my school system.			
46.	Experience has changed the instructional strategies I use.			
47.	Professional development has changed the way I teach.			
48.	My students influence how I teach.			
Revisions or other items.				

(table continues)

Table O2 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (8) **Professional development.** Opportunities provided to teachers for professional growth.
- (9) **Collegiality among teachers.** The extent to which teachers interact and support one another on instructional issues.
- (10) **State and national policies.** Initiatives at the state and national levels that focus on standards and accountability.
- (11) **Students.** The extent to which students provide teachers with new ideas and ways to improve instruction.
- (12) **Central office staff.** Support given from central office staff by distributing resources, providing professional development, and implementing district-wide initiatives.
- (13) **Graduate work.** The extent to which knowledge learned from graduate level courses influences what teachers do in the classroom.
- (14) **Experience.** The extent to which a teacher’s experience in the classroom affects his or her instruction.
- (15) **Outside Influences.** Instructional support given to teachers by people and organizations outside of school systems.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
49. I use data from state tests to drive my instruction.			
50. I use more technology because students are accustomed to it.			
51. I receive resources to support instruction from central office.			
52. I have learned new instructional strategies from graduate classes.			
53. My personal experiences have influenced the way I teach.			
54. Accountability for student test scores has changed how I teach.			

55.	I have learned new instructional practices from out-of-town conferences.			
56.	I am influenced by organizations outside of my school.			
57.	I discuss new ways to teach a subject with other teachers.			
58.	Scores on state tests have forced me to focus on remediation.			
59.	Graduate work has not influenced what I do in the classroom.			
60.	21 st Century Skills have influenced me to incorporate more technology.			
61.	I use more instructional strategies now than I did as a young teacher.			
62.	I share instructional strategies with teachers in my school.			
63.	Central office directives influence how I teach.			
64.	I have used instructional strategies I learned from graduate work.			
Revisions or other items.				

- **Go to next page for task 5**

Table O2 (continued)

Please click inside the box beside each instructional strategy that you feel is typically used by yourself or other teachers in your building. List any others you think have been omitted from the list.

1. Assessments
2. Classroom discussion
3. Collaborative teaching
4. Concept-based instruction
5. Cooperative groups
6. Critical thinking skills
7. Cross-curricular activities
8. Differentiation
9. Direct instruction
10. Enrichment activities
11. Focus on vocabulary
12. Giving feedback on assignments
13. Graphic organizers
14. Hands-on learning activities
15. Homework
16. Incorporating reading and writing strategies
17. Questioning
18. Review activities
19. Standards-based instruction

List any other strategies you think should be included:

Table O3
Content validation instrument for domains 16 through 22

Introduction:

This is a content validation instrument. The purpose of this instrument is to improve items on a questionnaire that will be distributed to a national sample of high school teachers. Please read the directions below.

Directions:

- Please complete the following five tasks:

Task 1: Domain placement of items: Below is a set of domains. Each domain is a set of statements that contains influences that may affect teachers' instructional practices. Your task is to read each statement and choose the domain in which you believe it fits best. Definitions of each domain are on the top of each content validation table.

- (16) School improvement plan
- (17) Literacy coach
- (18) Personal beliefs
- (19) Assistant Principal
- (20) Departmental chair
- (21) Technology resource teacher
- (22) Daughter and family members

Task 2: Association ratings: Please rate how strongly you think each item is associated with the domain you selected for it.

- 1 = Very weak association
- 2 = Weak association
- 3 = Strong association
- 4 = Very strong association

Task 3: Clarity ratings: Please indicate the level of clarity for each statement. I want to make sure questions are not confusing or misleading.

- 1 = Very unclear, delete
- 2 = Somewhat clear, revise
- 3 = Clear, leave as written

Task 4: Suggested revisions of items: Please write suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space provided at the bottom of each table.

Table O3 (continued)

Task 5: Identification of instructional strategies: After the last content validation table you will see a list of instructional strategies. Please identify the instructional strategies you feel are typically used by yourself or other teachers in your building.

- **Not all of these items will be included on my questionnaire. Your feedback is essential in developing my questionnaire so your honest critique is needed.**
- **Once you have responded to each item, please email your responses back to me. My email is plineburg@rcs.k12.va.us**
- **If you have any questions, you may email me or call me at (540) 562-3900 ext. 20004 or (540) 312-4746.**
- **Thanks again for your willingness to help with this part of my study.**

Table O3 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (16) **School improvement plan.** The extent to which instructional goals included in school improvement plans support teacher classroom improvement.
- (17) **Literacy coach.** The extent to which a literacy coach provides teachers with strategies for teaching reading and writing.
- (18) **Personal beliefs.** The amount of influence teachers' own beliefs have on classroom instruction.
- (19) **Assistant principal.** The amount of instructional leadership provided by an assistant principal.
- (20) **Departmental chair.** The amount of instructional leadership provided by departmental chairs.
- (21) **Technology resource teacher.** The amount of instructional support provided by technology resource teachers.
- (22) **Daughter and family members.** The extent to which family members provide teachers with new ideas and ways to improve instruction.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
1. The goals of my school's improvement plan have changed what I do in the classroom.			
2. My school's literacy coach has provided strategies on how to teach reading.			
3. Changes I make in the classroom come from my own beliefs about how students learn.			
4. My assistant principal provides suggestions following classroom observations.			
5. My departmental chair discusses instructional strategies with members of my department.			

6. I have learned to use technology in the classroom from a Technology Resource Teacher.			
7. My own children's experiences in school have influenced my teaching.			
8. My school has a literacy coach.			
9. My assistant principal has provided me resources to support instruction.			
10. My departmental chair has organized professional development.			
11. I am not familiar with goals included in my school's improvement plan.			
12. My beliefs about how students should learn allows me to try new instructional strategies.			
13. I receive instructional support from my departmental chair.			
14. Our school improvement plan provides an instructional vision for my school.			
15. I rarely see my assistant principal.			
Revisions or other items.			

(table continues)

Table O3 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (16) **School improvement plan.** Promoting school-wide growth by concentrating on goals that focus on areas of improvement.
- (17) **Literacy coach.** The extent to which a literacy coach provides teachers with strategies for teaching reading and writing.
- (18) **Personal beliefs.** The amount of influence teachers' own beliefs have on classroom instruction.
- (19) **Assistant principal.** The amount of instructional leadership provided by an assistant principal.
- (20) **Departmental chair.** The amount of instructional leadership provided by departmental chairs.
- (21) **Technology resource teacher.** The amount of instructional support provided by technology resource teachers.
- (22) **Daughter and family members.** The extent to which family members provide teachers with new ideas and ways to improve instruction.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
16. Family members have influenced my teaching.			
17. My ideas for using technology in the classroom comes from my own trial and error.			
18. I do not feel comfortable asking my departmental chair for suggestions.			
19. I have received ideas for using technology from a Technology Resource Teacher.			
20. My school's improvement plan focuses on new instructional strategies.			
21. Literacy is not a focus in my school.			

22.	The Technology Resource Teacher in my school is knowledgeable about instructional practices.			
23.	Most of the changes I make come from personal reflection.			
24.	Teachers in my school have received training from a literacy coach.			
25.	Suggestions from my own children have led me to alter my lessons.			
26.	My school's Technology Resource Teacher does not provide instructional support.			
27.	I believe that traditional teaching methods are the most effective way for students to learn.			
28.	My children have influenced my teaching.			
29.	The goals in my school's improvement plan have changed my instruction.			
30.	I am unwilling to change my personal beliefs about how students should learn.			
Revisions or other items.				

(table continues)

Table O3 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (16) **School improvement plan.** Promoting school-wide growth by concentrating on goals that focus on areas of improvement.
- (17) **Literacy coach.** The extent to which a literacy coach provides teachers with strategies for teaching reading and writing.
- (18) **Personal beliefs.** The amount of influence teachers' own beliefs have on classroom instruction.
- (19) **Assistant principal.** The amount of instructional leadership provided by an assistant principal.
- (20) **Departmental chair.** The amount of instructional leadership provided by departmental chairs.
- (21) **Technology resource teacher.** The amount of instructional support provided by technology resource teachers.
- (22) **Daughter and family members.** The extent to which family members provide teachers with new ideas and ways to improve instruction.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
31. I have incorporated instructional strategies included in my school's improvement plan.			
32. My child's experience in college has influenced my teaching style.			
33. I have received instructional support from a Technology Resource Teacher.			
34. My own family has influenced my teaching.			
35. My assistant principal discusses classroom observations with me.			
36. I have received training on reading strategies from a literacy coach.			
37. My departmental chair is not an instructional leader.			

38.	I believe traditional teaching methods impede student learning.			
39.	My assistant principal handles student discipline.			
40.	I have received technology support from a Technology Resource Teacher.			
41.	My departmental chair shares instructional strategies with me.			
42.	I am not aware of a literacy coach in my school.			
43.	Teachers are an integral part of the school improvement process.			
44.	My assistant principal is visible throughout the school.			
Revisions or other items.				

(table continues)

Table O3 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (16) **School improvement plan.** Promoting school-wide growth by concentrating on goals that focus on areas of improvement.
- (17) **Literacy coach.** The extent to which a literacy coach provides teachers with strategies for teaching reading and writing.
- (18) **Personal beliefs.** The amount of influence teachers' own beliefs have on classroom instruction.
- (19) **Assistant principal.** The amount of instructional leadership provided by an assistant principal.
- (20) **Departmental chair.** The amount of instructional leadership provided by departmental chairs.
- (21) **Technology resource teacher.** The amount of instructional support provided by technology resource teachers.
- (22) **Daughter and family members.** The extent to which family members provide teachers with new ideas and ways to improve instruction.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
45. I discuss only discipline issues with my assistant principal.			
46. I have learned new instructional strategies from my own children.			
47. I receive instructional resources from my departmental chair.			
48. I have never received support in teaching reading.			
49. My beliefs about how students should learn have changed since I first started teaching.			
50. Teachers in my school have bought into school improvement goals.			
51. My school does not have a literacy coach.			

52.	My family is not supportive of my teaching career.			
53.	I have never received instructional support from my assistant principal.			
54.	My school does not provide support for technology.			
55.	I have talked with my own children about teaching strategies.			
56.	I participated in forming our school improvement plan.			
57.	My personal beliefs about education influence what I do in the classroom.			
58.	I have a strong, collegial relationship with my departmental chair.			
Revisions or other items.				

(table continues)

Table O3 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (16) **School improvement plan.** Promoting school-wide growth by concentrating on goals that focus on areas of improvement.
- (17) **Literacy coach.** The extent to which a literacy coach provides teachers with strategies for teaching reading and writing.
- (18) **Personal beliefs.** The amount of influence teachers' own beliefs have on classroom instruction.
- (19) **Assistant principal.** The amount of instructional leadership provided by an assistant principal.
- (20) **Departmental chair.** The amount of instructional leadership provided by departmental chairs.
- (21) **Technology resource teacher.** The amount of instructional support provided by technology resource teachers.
- (22) **Daughter and family members.** The extent to which family members provide teachers with new ideas and ways to improve instruction.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
59. My family does not understand what teaching involves.			
60. My school's literacy coach has motivated me to focus on teaching reading.			
61. I never discuss instruction with my departmental chair.			
62. I am not aware of a school improvement plan for my school.			
63. My school does not have a Technology Resource Teacher.			
64. The instructional strategies I use are ones I feel are beneficial to students.			
65. I discuss instructional methods with my assistant principal.			
66. I have never received support from a literacy coach.			

67. I have used instructional strategies that I believe help students learn better.			
68. My assistant principal holds instructional conferences with teachers.			
69. My departmental chair is an instructional leader.			
70. The only technology support I have received is from other teachers.			
Revisions or other items.			

- **Go to next page for task 5**

Table O3 (continued)

Please click inside the box beside each instructional strategy that you feel is typically used by yourself or other teachers in your building. List any others you think have been omitted from the list.

1. Assessments
2. Classroom discussion
3. Collaborative teaching
4. Concept-based instruction
5. Cooperative groups
6. Critical thinking skills
7. Cross-curricular activities
8. Differentiation
9. Direct instruction
10. Enrichment activities
11. Focus on vocabulary
12. Giving feedback on assignments
13. Graphic organizers
14. Hands-on learning activities
15. Homework
16. Incorporating reading and writing strategies
17. Questioning
18. Review activities
19. Standards-based instruction

List any other strategies you think should be included:

Table O4
Second content validation instrument for domains 1 through 7

Introduction:

This is a content validation instrument. The purpose of this instrument is to improve items on a questionnaire that will be distributed to a national sample of high school teachers. Please read the directions below.

Directions:

- Please complete the following four tasks:

Task 1: Domain placement of items: Below is a set of domains. Each domain is a set of statements that contains principal leadership strategies that may affect teachers' instructional practices. Your task is to read each statement and choose the domain in which you believe it fits best. Definitions of each domain are on the top of each content validation table.

- (1) Promoting professional development
- (2) Providing resources
- (3) Communicating goals
- (4) Providing incentives for teachers
- (5) Supervising instruction
- (6) Providing support
- (7) Issuing directives

Task 2: Association ratings: Please rate how strongly you think each item is associated with the domain you selected for it.

- 1 = Very weak association
- 2 = Weak association
- 3 = Strong association
- 4 = Very strong association

Task 3: Clarity ratings: Please indicate the level of clarity for each statement. I want to make sure questions are not confusing or misleading.

- 1 = Very unclear, delete
- 2 = Somewhat clear, revise
- 3 = Clear, leave as written

Task 4: Suggested revisions of items: Please write suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space provided at the bottom of each table.

- Not all of these items will be included on my questionnaire. Your feedback is essential in developing my questionnaire, so your honest critique is needed.
- Once you have responded to each item, please email your responses back to me. My email is plineburg@rcs.k12.va.us
- If you have any questions, you may email me or call me at (540) 562-3900 ext. 20004 or (540) 312-4746.
- Thanks again for your willingness to help with this part of my study.

Table O4 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (1) **Promoting professional development.** The extent to which principals alert and make accessible to teachers opportunities for professional growth.
- (2) **Providing resources.** Supplying teachers with the necessary materials for instruction.
- (3) **Communicating goals.** Efforts made by principals to share instructional expectations with teachers.
- (4) **Providing incentives for teachers.** Promoting teacher improvement and growth through public and private recognition of classroom performance, material rewards, and persuasion.
- (5) **Supervising instruction.** Giving feedback on instructional strategies during observations, post-observation conferences, formal evaluations, and informal classroom visits.
- (6) **Providing support.** Encouraging instructional improvement by supporting what teachers do in the classroom, protecting instructional time, handling student discipline, and dealing with disgruntled parents.
- (7) **Issuing directives.** Influencing teachers to change by introducing ideas that all staff members must follow.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
1. My principal organizes in-service activities.			
2. My principal allocates money each year for teachers to spend.			
3. My principal communicates instructional goals through post-observation conferences.			
4. Instructional changes in my school are initiated by my principal.			
5. My principal does not recognize teachers for their classroom performance.			
6. Decisions regarding instruction in my school are made by the principal.			

7. My principal handles student discipline.			
8. My principal values my input during post-observation conferences.			
9. I do not receive appropriate resources for my classroom from my principal.			
10. My principal uses reprimands for incentives to improve.			
11. My principal encourages the study of teaching.			
12. I feel threatened by my principal's presence during observations.			
13. Instructional time is protected by my principal.			
14. Most resources come from sources outside of the school.			
15. My school does not have instructional goals.			
16. My principal does not provide ample time to prepare my lessons.			
17. My principal does not discuss classroom observations with me.			
Revisions or other items.			

(table continues)

Table O4 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (1) **Promoting professional development.** The extent to which principals alert and make accessible to teachers opportunities for professional growth.
- (2) **Providing resources.** Supplying teachers with the necessary materials for instruction.
- (3) **Communicating goals.** Efforts made by principals to share instructional expectations with teachers.
- (4) **Providing incentives for teachers.** Promoting teacher improvement and growth through public and private recognition of classroom performance, material rewards, and persuasion.
- (5) **Supervising instruction.** Giving feedback on instructional strategies during observations, post-observation conferences, formal evaluations, and informal classroom visits.
- (6) **Providing support.** Encouraging instructional improvement by supporting what teachers do in the classroom, protecting instructional time, handling student discipline, and dealing with disgruntled parents.
- (7) **Issuing directives.** Influencing teachers to change by introducing ideas that all staff members must follow.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

	Potential questionnaire statements	Domain	Association	Clarity
18.	Resources provided by my principal support school goals.			
19.	Post-observation conferences by my principal are just a formality.			
20.	My principal makes all decisions regarding instruction.			
21.	My principal always provides resources that I ask for.			
22.	My principal communicates instructional goals during faculty meetings.			
23.	My principal provides material rewards.			
24.	The only support I receive is from central office.			

25.	I receive suggestions from my principal following observations.			
26.	My principal involves teachers when making decisions regarding instruction.			
27.	I receive feedback from my principal following observations.			
28.	I am not encouraged by my principal to try new ideas.			
29.	My principal does not provide teachers flexibility with making instructional changes.			
30.	Instructional goals are posted throughout my school.			
31.	My principal does not supply resources for my work.			
32.	My principal celebrates achievements by teachers.			
Revisions or other items.				

(table continues)

Table O4 (continued)

Directions: Please type the numbers representing your responses in the gray areas.

Domain placement:

- (1) **Promoting professional development.** The extent to which principals alert and make accessible to teachers opportunities for professional growth.
- (2) **Providing resources.** Supplying teachers with the necessary materials for instruction.
- (3) **Communicating goals.** Efforts made by principals to share instructional expectations with teachers.
- (4) **Providing incentives for teachers.** Promoting teacher improvement and growth through public and private recognition of classroom performance, material rewards, and persuasion.
- (5) **Supervising instruction.** Giving feedback on instructional strategies during observations, post-observation conferences, formal evaluations, and informal classroom visits.
- (6) **Providing support.** Encouraging instructional improvement by supporting what teachers do in the classroom, protecting instructional time, handling student discipline, and dealing with disgruntled parents.
- (7) **Issuing directives.** Influencing teachers to change by introducing ideas that all staff members must follow.

Association ratings: 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong

Clarity ratings: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written

Please write other items or suggestions for revision of items for which you circled a 1 or 2 for association or clarity in the space at the end of the table.

Potential questionnaire statements	Domain	Association	Clarity
33. My principal provides ample resources for my work.			
34. My principal allows teachers to make decisions regarding instruction.			
35. Central office provides most professional development activities.			
Revisions or other items.			

APPENDIX P

STATISTICS FOR THE CONTENT VALIDATION OF THE QUANTITATIVE QUESTIONNAIRE

Table P1

Content Validation Data for the Change in Instructional Practices Questionnaire: Classification of Items into Domains 1 through 7, N=11

Item ^d	Expected domain	Domains													
		1		2		3		4		5		6		7	
		Promoting professional development		Providing resources		Communicating Goals		Providing incentives for teachers		Supervising instruction		Providing support		Issuing directives	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
1	1	11	100												
2	2			9	82			2	18						
3	5					2	18			9	82				
4	7					2	18			1	9			8	73
5	5					1	9			10	91				
6	4							11	100						
7	6									1	9	10	91		
8	3					10	91			1	9				
9	1	8	73	3	27										
10	6					1	9	4	36			6	55		
11	7	1	9			2	18			1	9	2	18	5	45
12	6											11	100		

(table continues)

^d Items 1 through 70 can be found in Appendix O.

Table P1 (continued)

Item	Expected domain	Domains													
		1		2		3		4		5		6		7	
		Promoting professional development		Providing resources		Communicating Goals		Providing incentives for teachers		Supervising instruction		Providing support		Issuing directives	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
13	5					1	9	1	9	8	73	1	9		
14	3					11	100								
15	2			11	100										
16	4							8	73	1	9	1	9	1	9
17	1	7	64			2	18			1	9			1	9
18	5									9	82	2	18		
19	6											11	100		
20	4							11	100						
21	3					11	100								
22	1	11	100												
23	7									1	9			10	91
24	2			11	100										
25	3					11	100								
26	6			1	9							10	91		

(table continues)

Table P1 (continued)

Item	Expected domain	Domains													
		1		2		3		4		5		6		7	
		Promoting professional development		Providing resources		Communicating Goals		Providing incentives for teachers		Supervising instruction		Providing support		Issuing directives	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
27	5									11	100				
28	4							10	91	1	9				
29	2			10	91	1	9								
30	5									11	100				
31	7													11	100
32	6					1	9					10	91		
33	1	11	100												
34	2			11	100										
35	3					11	100								
36	4							11	100						
37	6							2	18	1	9	8	73		
38	5									11	100				
39	7					5	46	1	9			4	36	1	9
40	7					2	18							9	82

(table continues)

Table P1 (continued)

Item	Expected domain	Domains													
		1		2		3		4		5		6		7	
		Promoting professional development		Providing resources		Communicating Goals		Providing incentives for teachers		Supervising instruction		Providing support		Issuing directives	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
41	1	9	82			1	9	1	9						
42	4			1	9			10	91						
43	5									11	100				
44	7													11	100
45	1	10	91	1	9										
46	2			11	100										
47	3					10	91							1	9
48	3					11	100								
49	2			11	100										
50	4							11	100						
51	5									11	100				
52	6	1	9			1	9	2	18	1	9	5	45	1	9
53	7					1	9	1	9			4	36	5	46
54	1	11	100												
55	5	1	9	1	9	3	27			6	55				

(table continues)

Table P1 (continued)

Item	Expected domain	Domains													
		1		2		3		4		5		6		7	
		Promoting professional development		Providing resources		Communicating Goals		Providing incentives for teachers		Supervising instruction		Providing support		Issuing directives	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
56	3					11	100								
57	2			11	100										
58	7					2	18							9	82
59	5									11	100				
60	4							11	100						
61	2			11	100										
62	6											11	100		
63	7									2	18	6	55	3	27
64	5	6	55							5	46				
65	3					11	100								
66	4							11	100						
67	1	3	27							3	27	5	46		
68	1	11	100												
69	2			11	100										
70	4							11	100						

Table P2

Content Validation Data for the Change in Instructional Practices Questionnaire Quantitative Questionnaire: Classification of Items into Domains 8 through 15, N=14

Item ^e	Expected domain	Domains															
		8		9		10		11		12		13		14		15	
		Professional development	Collegiality among teachers	State and national policies	Students	Central office staff	Graduate work	Experience	Outside influences								
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1	10					13	93			1	7						
2	4	2	14					7	50			2	14	2	14	1	7
3	8	7	50									1	7			6	43
4	7							1	7					13	93		
5	6											14	100				
6	7									14	100						
7	9			14	100												
8	8	8	57													6	43
9	8	14	100														
10	15	1	7													13	93
11	14											1	7	13	93		
12	13											13	93	1	7		
13	10					13	93	1	7								
14	9	1	7	13	93												
15	8	9	64							5	36						

(table continues)

^e Items 1 through 80 can be found in Appendix O.

Table P2 (continued)

Item	Expected domain	Domains															
		8		9		10		11		12		13		14		15	
		Professional development	Collegiality among teachers	State and national policies	Students	Central office staff	Graduate work	Experience	Outside influences								
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
36	14													14	100		
37	10			14	100												
38	13							1	7	13	93						
39	11						12	86					2	14			
40	12	2	14			1	7			11	79						
41	12	3	21			1	7			10	71						
42	13											14	100				
43	14						1	7					12	85	1	7	
44	15														14	100	
45	12	1	7			1	7			12	85						
46	8	6	43			1	7			7	50						
47	9			14	100												
48	12					1	7			13	93						
49	11							9	64				5	36			
50	10					13	93						1	7			
51	8	14	100														
52	12									14	100						
53	13											14	100				

(table continues)

Table P2 (continued)

Item	Expected domain	Domains															
		8		9		10		11		12		13		14		15	
		Professional development	Collegiality among teachers	State and national policies	Students	Central office staff	Graduate work	Experience	Outside influences								
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
54	9			14	100												
55	15															14	100
56	8	14	100														
57	12									14	100						
58	11							10	71			1	7	3	21		
59	9			14	100												
60	14													14	100		
61	15									1	7					13	93
62	14													14	100		
63	8	14	100														
64	11							14	100								
65	10					14	100										
66	11							14	100								
67	12									14	100						
68	13											14	100				
69	14													14	100		
70	10					12	86	2	14								
71	8	3	21													11	79

(table continues)

Table P2 (continued)

Item	Expected domain	Domains																	
		8		9		10		11		12		13		14		15			
		Professional development		Collegiality among teachers		State and national policies		Students		Central office staff		Graduate work		Experience		Outside influences			
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
72	15																	14	100
73	9			14	100														
74	10					13	93			1	7								
75	13											14	100						
76	15	1	7			4	29	4	29					4	29	1	7		
77	14	1	7											13	93				
78	9			14	100														
79	12									14	100								
80	13											14	100						

Table P3

Content Validation Data for the Change in Instructional Practices Quantitative Questionnaire: Classification of Items into Domains 16 through 22, N=10

Item ^f	Expected domain	Domains															
		16 School improvement plan		17 Literacy coach		18 Personal beliefs		19 Assistant principal		20 Departmental chair		21 Technology resource teacher		22 Daughter and family members			
		N	%	N	%	N	%	N	%	N	%	N	%	N	%		
1	16	9	90			1	10										
2	17			9	90	1	10										
3	18					10	100										
4	19			1	10			9	90								
5	20			1	10					9	90						
6	21					1	10					9	90				
7	22					2	20							8	80		
8	17			9	90					1	10						
9	19							9	90	1	10						
10	20							1	10	9	90						
11	16	9	90									1	10				
12	18			2	20	8	80										
13	20					1	10			9	90						
14	16	9	90			1	10										
15	19							9	90					1	10		

(table continues)

^f Items 1 through 70 can be found in Appendix O.

Table P3 (continued)

Item	Expected domain	Domains													
		16 School improvement plan		17 Literacy coach		18 Personal beliefs		19 Assistant principal		20 Departmental chair		21 Technology resource teacher		22 Daughter and family members	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
16	22					2	20							8	80
17	21					5	50					5	50		
18	20					1	10			9	90				
19	21											10	100		
20	16	9	90					1	10						
21	17	2	20	8	80										
22	21	1	10									9	90		
23	18					10	100								
24	17			9	90			1	10						
25	22					1	10					1	10	8	80
26	21					1	10					9	90		
27	18					10	100								
28	22					1	10							9	90
29	16	10	100												

(table continues)

Table P3 (continued)

Item	Expected domain	Domains													
		16 School improvement plan		17 Literacy coach		18 Personal beliefs		19 Assistant principal		20 Departmental chair		21 Technology resource teacher		22 Daughter and family members	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
30	18					10	100								
31	16	9	90	1	10										
32	22					2	20							8	80
33	21	9	90					1	10						
34	22					1	10							9	90
35	19			1	10			9	90						
36	17			9	90	1	10								
37	20					1	10	1	10	8	80				
38	18					9	90			1	10				
39	19							9	90			1	10		
40	21					1	10					9	90		
41	20					1	10	1	10	8	80				
42	17			9	90	1	10								
43	16	9	90					1	10						

(table continues)

Table P3 (continued)

Item	Expected domain	Domains													
		16 School improvement plan		17 Literacy coach		18 Personal beliefs		19 Assistant principal		20 Departmental chair		21 Technology resource teacher		22 Daughter and family members	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
44	19							9	90	1	10				
45	19					1	10	9	90						
46	22					1	10							9	90
47	20					1	10			9	90				
48	17			9	90	1	10								
49	18					10	100								
50	16	10	100												
51	17	1	10	8	80			1	10						
52	22					2	20							8	80
53	19							9	90	1	10				
54	21	1	10			1	10					8	80		
55	22					3	30							7	70
56	16	10	100												
57	18					10	100								

(table continues)

Table P3 (continued)

Item	Expected domain	Domains													
		16 School improvement plan		17 Literacy coach		18 Personal beliefs		19 Assistant principal		20 Departmental chair		21 Technology resource teacher		22 Daughter and family members	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
58	20							1	10	9	90				
59	22					2	20							8	80
60	17			9	90	1	10								
61	20							1	10	9	90				
62	16	9	90									1	10		
63	21	1	10					1	10			8	80		
64	18					10	100								
65	19							9	90	1	10				
66	17	1	10	8	80	1	10								
67	18			1	10	9	90								
68	19							9	90	1	10				
69	20							1	10	9	90				
70	21					2	20					8	80		

Table P4

Content Validation Data for the Change in Instructional Practices Questionnaire: Placement, Strength of Association, and Clarity of Items for Domains 1 through 7, N=11

Domain 1 : Promoting professional development						
Item	Placement in correct domain	Strength of Association			Clarity	
		<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>
54	11	3.82	.41	11	3.00	.00
33	11	3.82	.41	11	2.91	.30
68	11	3.73	.65	11	3.00	.00
1	11	3.64	.51	11	2.82	.41
22	11	3.64	.67	11	2.91	.30
45	10	3.90	.32	11	3.00	.00
41	9	3.67	.50	11	3.00	.00

(table continues)

Table P4 (continued)

Domain 2: Providing resources							
Item	Placement in correct domain	Strength of association			Clarity		
		N	M	SD	N	M	SD
34	11	3.91	.30	11	3.00	.00	
57	11	3.91	.30	11	3.00	.00	
61	11	3.91	.30	11	3.00	.00	
69	11	3.91	.30	11	3.00	.00	
46	11	3.82	.41	11	3.00	.00	
15	11	3.64	.51	11	3.00	.00	
24	11	3.55	.52	11	2.91	.30	
29	10	3.60	.52	11	3.00	.00	
2	9	3.56	.73	11	2.64	.51	

(table continues)

Table P4 (continued)

Domain 3: Communicating goals							
Item	Placement in correct domain	Strength of association			Clarity		
		N	M	SD	N	M	SD
21	11	3.91	.30	11	3.00	.00	
65	11	3.91	.30	11	3.00	.00	
35	11	3.82	.41	11	3.00	.00	
48	11	3.64	.51	11	3.00	.00	
56	11	3.64	.51	11	3.00	.00	
25	11	3.55	.52	11	3.00	.00	
14	11	3.55	.69	11	3.00	.00	
3	9	3.67	.50	11	2.91	.30	

(table continues)

Table P4 (continued)

Domain 4: Providing incentives for teachers						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
70	11	3.91	.30	11	3.00	.00
20	11	3.82	.41	11	3.00	.00
50	11	3.82	.41	11	3.00	.00
60	11	3.82	.41	11	3.00	.00
66	11	3.82	.41	11	3.00	.00
36	11	3.82	.60	11	2.91	.30
28	10	3.70	.48	11	3.00	.00
42	10	3.60	.70	11	2.91	.30
Domain 5: Supervising instruction						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
51	11	3.91	.30	11	3.00	.00
38	11	3.82	.41	11	3.00	.00
43	11	3.82	.41	11	3.00	.00
27	11	3.82	.41	11	2.91	.30
30	11	3.82	.41	11	2.91	.30

(table continues)

Table P4 (continued)

Domain 6: Providing support						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
19	11	3.91	.30	11	3.00	.00
62	11	3.82	.60	11	2.91	.30
12	11	3.50	1.04	11	2.91	.30
7	10	3.80	.63	11	3.00	.00
32	10	3.70	.48	11	2.91	.30
Domain 7: Issuing directives						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
58	9	3.67	.50	11	3.00	.00
40	9	3.67	.50	11	2.91	.30
44	11	3.50	.69	11	3.00	.00
23 ¹	10	3.40	.52	11	2.82	.41

Note. Only items that were placed in the expected domain by 80% or more of the respondents, had strength of association ratings 3.5 or higher, and clarity ratings of 2.5 or higher are included in this table.

¹ Item was added because of the number of people who correctly placed it in its domain and its clarity rating.

Table P5

Content Validation Data for the Change in Instructional Practices Questionnaire: Ranking of Items for Domains 8 through 15, N=14

Domain 8: Professional development						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
51	14	3.71	.61	14	3.00	.00
63	14	3.71	.61	14	3.00	.00
56	14	3.71	.61	14	2.93	.27
9	14	3.71	.73	14	3.00	.00
33	13	3.64	.84	14	3.00	.00

(table continues)

Table P5 (continued)

Domain 9: Collegiality among teachers						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
7	14	4.00	.00	14	3.00	.00
54	14	3.93	.27	14	3.00	.00
73	14	3.93	.27	14	3.00	.00
78	14	3.93	.27	14	3.00	.00
59	14	3.86	.36	14	3.00	.00
30	14	3.79	.43	14	3.00	.00
35	14	3.79	.58	14	2.86	.54
47	14	3.71	.83	14	3.00	.00
18	14	3.71	.83	14	3.00	.00
14	13	3.86	.36	14	2.93	.27

(table continues)

Table P5 (continued)

Domain 10: State and national policies						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
37	14	3.79	.43	14	3.00	.00
65	14	3.79	.43	14	3.00	.00
19	14	3.79	.58	14	2.93	.27
29	14	3.71	.61	14	3.00	.00
74	13	3.79	.43	14	2.93	.27
13	13	3.79	.43	14	2.93	.27
50	13	3.64	.50	14	2.93	.27
1	13	3.64	.63	14	2.71	.47
70	12	3.50	.65	14	2.79	.58
32	12	3.50	1.02	14	2.93	.27
Domain 11: Students						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
20	14	3.93	.27	14	3.00	.00
64	14	3.93	.27	14	3.00	.00
28	14	3.50	.65	14	2.79	.43
66 ¹	14	3.40	.63	14	2.86	.36
39	12	3.71	.47	14	2.93	.27

(table continues)

Table P5 (continued)

Domain 12: Central office staff							
Item	Placement in correct domain	Strength of association			Clarity		
		N	M	SD	N	M	SD
67	14	3.93	.27	14	3.00	.00	
21	14	3.93	.27	14	2.93	.27	
52	14	3.86	.36	14	2.93	.27	
79	14	3.86	.36	14	2.93	.27	
57	14	3.79	.43	14	3.00	.00	
6	14	3.64	.84	14	2.93	.48	
48	13	3.86	.36	14	3.00	.00	
45	12	3.79	.43	14	2.79	.43	

(table continues)

Table P5 (continued)

Domain 13: Graduate work							
Item	Placement in correct domain	Strength of association			Clarity		
		N	M	SD	N	M	SD
68	14	3.86	.36	14	2.93	.27	
53	14	3.79	.58	14	2.93	.27	
75	14	3.79	.58	14	2.93	.27	
80	14	3.79	.58	14	2.93	.27	
22	14	3.79	.80	14	2.86	.36	
5	14	3.71	.61	14	3.00	.00	
42	14	3.71	.83	14	2.93	.27	
38	13	3.79	.58	14	2.93	.27	
27	13	3.79	.58	14	2.93	.27	
12	13	3.79	.80	14	2.86	.36	

(table continues)

Table P5 (continued)

Domain 14: Experience						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
36	14	3.86	.54	14	2.86	.54
62	14	3.86	.54	14	2.93	.27
69	14	3.86	.54	14	2.93	.27
60	14	3.71	.47	14	3.00	.00
43	14	3.50	.65	14	2.86	.36
11	13	3.86	.36	14	2.79	.43
25	13	3.79	.58	14	2.79	.58
4	13	3.64	.75	14	2.86	.36

Domain 15: Outside influences						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
55	14	3.86	.36	14	3.00	.00
44	14	3.64	.63	14	2.93	.27
72	14	3.50	.94	14	2.71	.61
10	13	3.57	.65	14	3.00	.00
61	13	3.50	.76	14	3.00	.00

Note. Only items that were placed in the expected domain by 80% or more of the respondents, had strength of association ratings 3.5 or higher, and clarity ratings of 2.5 or higher are included in this table.

¹ Item was added because of the number of people who correctly placed it in the correct domain and its clarity rating.

Table P6

Content Validation Data for the Change in Instructional Practices Questionnaire: Ranking of Items for Domains 16 through 22, N=10

Domain 16: School improvement plan						
Item	Placement in correct domain	Strength of association			Clarity	
	N	M	SD	N	M	SD
29	10	3.80	.42	10	2.90	.32
1	9	3.78	.44	10	3.00	.00
20	9	3.78	.44	10	2.90	.32
14	9	3.78	.44	10	2.80	.63
31	9	3.78	.67	10	2.80	.63
62	9	3.67	.71	10	2.80	.63
11	9	3.56	1.01	10	3.00	.00

(table continues)

Table P6 (continued)

Domain 17: Literacy coach						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
36	9	3.78	.44	10	3.00	.00
60	9	3.78	.44	10	2.90	.32
2	9	3.67	.71	10	2.90	.32
24	9	3.67	.71	10	2.80	.63
42	9	3.56	1.01	10	3.00	.00
8	9	3.56	1.01	10	2.80	.63
66	8	3.50	1.07	10	2.90	.32
51	8	3.50	1.07	10	3.00	.00

(table continues)

Table P6 (continued)

Domain 18: Personal beliefs						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
3	10	3.90	.32	10	3.00	.00
57	10	3.80	.42	10	2.90	.32
30	10	3.70	.48	10	3.00	.00
64	10	3.60	.52	10	2.80	.42
27	10	3.50	.71	10	2.80	.63
49	10	3.50	.97	10	2.90	.32
38	9	3.67	.50	10	3.00	.00
67	9	3.67	.50	10	2.80	.42
12	8	3.63	.74	10	2.80	.63

(table continues)

Table P6 (continued)

Domain 19: Assistant principal						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
9	9	4.00	.00	10	2.90	.32
35	9	3.89	.33	10	3.00	.00
68	9	3.89	.33	10	3.00	.00
4	9	3.78	.44	10	3.00	.00
53	9	3.78	.44	10	3.00	.00
65	9	3.78	.44	10	2.90	.32
39	9	3.67	.71	10	2.80	.63
44	9	3.67	.71	10	2.80	.63
15	9	3.56	1.01	10	2.80	.63

(table continues)

Table P6 (continued)

Domain 20: Departmental chair						
Item	Placement in correct domain	Strength of association			Clarity	
	N	M	SD	N	M	SD
5	9	3.89	.33	10	3.00	.00
58	9	3.67	.50	10	2.90	.32
61	9	3.67	.50	10	2.80	.63
69	9	3.67	.71	10	2.90	.32
47	9	3.67	.71	10	2.80	.63
10	9	3.67	1.00	10	2.70	.68
37	8	3.63	.74	10	2.90	.32
41	8	3.63	.74	10	2.80	.63
13	9	3.56	1.01	10	3.00	.00

(table continues)

Table P6 (continued)

Domain 21: Technology resource teacher							
Item	Placement in correct domain	Strength of association			Clarity		
		N	M	SD	N	M	SD
19	10	3.70	.68	10	2.70	.68	
6	9	3.89	.33	10	3.00	.00	
40	9	3.89	.33	10	2.80	.63	
33	9	3.78	.44	10	2.80	.63	
22	9	3.67	1.00	10	2.80	.63	
70	8	3.50	.76	10	2.80	.63	
63	8	3.50	1.07	10	2.80	.63	

(table continues)

Table P6 (continued)

Domain 22: Daughter and family members						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
28	9	4.00	.00	10	2.90	.32
34	9	3.78	.67	10	2.80	.63
46	9	3.56	.53	10	2.90	.32
16	8	4.00	.00	10	2.90	.32
7	8	3.87	.35	10	3.00	.00
25	8	3.87	.35	10	2.90	.32
32	8	3.87	.35	10	2.80	.63
52	8	3.75	.46	10	3.00	.00
59	8	3.63	.52	10	2.90	.32

Note. Only items that were placed in the expected domain by 80% or more of the respondents, had strength of association ratings 3.5 or higher, and clarity ratings of 2.5 or higher are included in this table.

Table P7

Content Validation Data for the Change in Instructional Practices Questionnaire: Classification of Items into Domains 1 through 7 for the second content validation instrument, N=10

Item ^g	Expected domain	Domains													
		1		2		3		4		5		6		7	
		Promoting professional development		Providing resources		Communicating Goals		Providing incentives for teachers		Supervising instruction		Providing support		Issuing directives	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
1	1	9	90	1	10										
2	2			10	100										
3	3					6	60			4	40				
4	7					2	20	1	10			1	10	6	60
5	4					1	10	8	80	1	10				
6	7	1	10			3	30			1	10			5	50
7	6											10	100		
8	5					1	10			8	80	1	10		
9	2			9	90							1	10		
10	4					1	10	6	60	3	30				
11	1	4	40			3	30	1	10			2	20		
12	5									7	70	2	20	1	10

(table continues)

^g Items 1 through 35 can be found in Appendix O

Table P7 (continued)

Item	Expected domain	Domains													
		1		2		3		4		5		6		7	
		Promoting professional development		Providing resources		Communicating Goals		Providing incentives for teachers		Supervising instruction		Providing support		Issuing directives	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
13	6											10	100		
14	2			9	90							1	10		
15	3					9	90							1	10
16	6			2	20							8	80		
17	5								10	100					
18	2			9	90	1	10								
19	5					2	20		8	80					
20	7					2	20							8	80
21	2			9	90							1	10		
22	3					10	100								
23	4								10	100					
24	6			1	10				1	10		8	80		
25	5					1	10		1	10	8	80			
26	7					3	30					1	10	6	60

(table continues)

Table P7 (continued)

Item	Expected domain	Domains													
		1		2		3		4		5		6		7	
		Promoting professional development		Providing resources		Communicating Goals		Providing incentives for teachers		Supervising instruction		Providing support		Issuing directives	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
27	5									9	90	1	10		
28	6					1	10			1	10	6	60	2	20
29	7											3	30	7	70
30	3					10	100								
31	2			9	90							1	10		
32	4					1	10	9	90						
33	2			9	90							1	10		
34	7			1	10					1	10	4	40	4	40
35	1	10	100												

Table P8

Content Validation Data for the Change in Instructional Practices Questionnaire: Placement, Strength of Association, and Clarity of Items for Domain 7 for the Second Content Validation Instrument, N=10

Domain 1 : Professional development						
Item	Placement in correct domain	Strength of Association			Clarity	
		<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>
1	9	3.70	.50	10	2.90	.32
35	10	3.60	.52	10	2.80	.42
Domain 2: Providing resources						
Item	Placement in correct domain	Strength of association			Clarity	
		<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>
2	10	3.60	.52	10	2.70	.48
9	9	4.00	.00	10	2.90	.32
14	9	3.78	.44	10	2.80	.42
18	9	3.78	.44	10	3.00	.00
21	9	3.78	.44	10	3.00	.00
31	9	3.89	.33	10	2.90	.32
33	9	3.89	.33	10	2.80	.42

(table continues)

Table P8 (continued)

Domain 3: Communicating goals						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
15	9	2.89	.33	10	2.90	.32
22	10	4.00	.00	10	2.90	.32
30	10	4.00	.00	10	3.00	.00
Domain 4: Providing incentives for teachers						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
5	8	3.63	.52	10	2.80	.42
23	10	3.70	.68	10	2.80	.42
32	9	3.67	.50	10	3.00	.00

(table continues)

Table P8 (continued)

Domain 5: Supervising instruction						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
8	8	4.00	.00	10	3.00	.00
17	10	4.00	.00	10	3.00	.00
19	8	3.87	.35	10	3.00	.00
25	8	3.75	.46	10	3.10	.32
27	9	4.00	.00	10	3.00	.00
Domain 6: Providing support						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
7	10	3.90	.32	10	3.00	.00
13	10	4.00	.00	10	3.00	.00
17	8	4.00	.00	10	3.00	.00
24	8	3.38	.74	10	2.70	.68

(table continues)

Table P8 (continued)

Domain 7: Issuing directives						
Item	Placement in correct domain	Strength of association			Clarity	
		N	M	SD	N	M
20	8	3.50	.54	10	2.90	.32

APPENDIX Q
 SCALES, ITEMS, AND STATISTICS FOR THE PRINCIPAL COMPONENTS
 ANALYSIS OF THE LINEBURG SCALES FOR TESTING THE THEORY OF CHANGE
 IN TEACHERS' INSTRUCTIONAL PRACTICES

Table Q1
Descriptive Statistics for the Principal Components Analysis

Variables	Mean	Std. Deviation	N
Promoting professional development	2.88	.51	283
Providing resources	2.80	.53	283
Communicating goals	2.84	.53	283
Providing incentives	2.80	.61	283
Supervising instruction	2.65	.56	283
Providing support	2.83	.53	283
Issuing directives	2.17	.49	283
Professional development	2.30	.48	283
Collegiality among teachers	3.02	.46	283
State and national policies	2.60	.51	283
Students	3.12	.36	283
Central office staff	2.37	.48	283
Graduate work	2.76	.64	283
Outside influences	3.00	.43	283
School improvement plan	2.90	.44	283
Literacy coach	2.34	.79	283
Assistant principal	2.45	.65	283
Departmental chair	2.84	.71	283
Technology resource teacher	2.50	.75	283
Daughter and family members	2.78	.56	283
i37r	3.40	.60	283
i57r	3.04	.67	283

Table Q2
Communalities for the Principal Components Analysis

	Initial	Extraction
Promoting professional development	1.00	.74
Providing resources	1.00	.72
Communicating goals	1.00	.72
Providing incentives	1.00	.71
Supervising instruction	1.00	.55
Providing support	1.00	.69
Issuing directives	1.00	.57
Professional development	1.00	.63
Collegiality among teachers	1.00	.70
State and national policies	1.00	.51
Students	1.00	.50
Central office staff	1.00	.49
Graduate work	1.00	.57
Outside influences	1.00	.57
School improvement plan	1.00	.49
Literacy coach	1.00	.48
Assistant principal	1.00	.56
Departmental chair	1.00	.54
Technology resource teacher	1.00	.35
Daughter and family members	1.00	.49
i37r	1.00	.30
i57r	1.00	.53

Note: Extraction Method: Principal Component Analysis.

Table Q3
Correlation Matrix for the Principal Components Analysis

Factors	Pro Prof Deve	Prov resource	Com goals	Prov incentives	Super inst	Prov Support	Issue Direct	Prof develop	Collegiality	State national	Students
Pro Prof Deve											
Prov resource	*.709										
Com goals	*.670	*.628									
Prov incentives	*.658	*.626	*.687								
Super inst	*.534	*.507	*.518	*.500							
Prov Support	*.623	*.613	*.582	*.653	*.499						
Issue Direct	**-.105	.032	*.233	.018	**-.130	.049					
Prof develop	*.448	*.450	*.344	*.401	*.287	*.417	.013				
Collegiality	*.310	*.247	*.330	*.317	*.163	*.209	-.055	*.214			
State national	*.167	.078	*.202	*.147	*.216	**-.100	*.380	*.155	*.147		
Students	*.167	**-.123	*.156	**-.119	.078	*.168	-.064	*.239	*.255	.044	
Central office	*.329	*.303	*.378	*.329	*.266	*.274	*.330	*.294	.086	*.373	.071
Graduate	.057	.069	.014	*.061	.058	.068	.037	*.263	-.032	**-.111	.085
Outside	*.171	*.249	*.145	*.197	-.031	*.182	*.149	*.308	*.252	**-.117	*.306
School improv	*.478	*.353	*.610	.394	*.337	*.353	*.235	*.322	*.272	*.343	*.219
Lit coach	*.366	*.264	*.376	*.314	*.261	*.239	*.294	*.332	*.229	*.230	.069
Assis princ	*.434	*.335	*.447	*.410	*.403	*.306	*.179	**-.130	*.344	*.257	.041
Dep chair	*.339	*.297	*.350	*.339	*.255	*.262	.080	*.246	*.536	*.209	.070
Trt	*.348	*.284	*.321	*.244	*.231	*.300	*.164	*.239	*.182	*.143	*.172
Family	*.137	**-.111	*.174	**-.131	.079	*.201	.059	**-.115	.039	**-.116	*.206
I37r	*.028	.028	.052	.006	.076	-.038	*.053	-.162	.063	**-.083	*.116
I57r	*.186	**-.186	**-.110	**-.123	*.100	-.174	**-.037	*.122	*.138	**-.144	*.123

(table continues)

Table Q3 (Table continued)

Factors	Central office	Graduate	Outside	School improv	Lit coach	Assis princ	Dep chair	Trt	Family	i37r	i57r
Graduate	.093										
Outside	.088	*.164									
School improv	*.399	.074	.067								
Lit coach	*.390	**0.098	**0.100	*.392							
Assis princ	*.276	-.053	-.034	*.338	*.429						
Dep chair	*.199	.007	**0.130	*.291	*.285	*.260					
Trt	*.272	.034	*.132	*.296	*.451	*.326	*.252				
Family	*.136	**0.102	**0.110	**0.107	.066	**0.106	.019	*.149			
i37r	.028	.016	*.168	-.033	-.021	.087	.090	.026	*.134		
i57r	*.150	.012	.063	**-.129	-.088	*.206	*.215	-.075	*.159	.062	

Note. Names of factors were shortened due to size of table. See Table Q1 for full names.

* $p \leq .05$, ** $p \leq .01$.

Table Q4

Total Variance Explained in the Scales by the Principal Components Analysis

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.30	28.61	28.61	6.29	28.61	28.61	4.63	21.04	21.04
2	2.10	9.30	37.91	2.05	9.30	37.91	2.70	12.25	33.29
3	1.60	7.04	44.95	1.60	7.04	44.95	2.10	9.31	42.60
4	1.40	6.40	51.32	1.40	6.37	51.32	1.60	7.18	49.80
5	1.20	5.41	56.73	1.19	5.41	56.73	1.53	6.10	56.73
6	.98	4.45	61.18						
7	.10	4.35	65.52						
8	.81	3.70	69.23						
9	.80	3.42	72.64						
10	.74	3.40	75.10						
11	.70	2.10	78.10						
12	.62	2.82	81.80						
13	.61	2.80	84.54						
14	.60	2.49	87.04						
15	.50	2.28	89.32						
16	.50	2.05	91.37						
17	.41	1.84	93.21						
18	.40	1.65	94.90						
19	.34	1.53	96.39						
20	.32	1.46	97.90						
21	.26	1.19	99.05						
22	.21	28.60	28.61						

Table Q5
Unrotated Components Matrix for the Principal Components Analysis

Component	1	2	3	4	5
Promoting professional development	.82	.09	-.21	-.14	-.01
Providing resources	.75	.22	-.25	-.23	-.07
Communicating goals	.82	-.02	-.13	-.12	.13
Providing incentives	.77	.17	-.25	-.15	.02
Supervising instruction	.64	-.10	-.27	-.24	.02
Providing support	.72	.22	-.18	-.30	.05
Issuing directives	.24	-.64	.31	-.11	.04
Professional development	.58	.25	.19	-.07	-.44
Collegiality among teachers	.47	.18	-.05	.67	.03
State and national policies	.35	-.51	.35	.05	-.02
Students	.25	.44	.44	.13	.17
Central office staff	.54	-.30	.31	-.09	-.06
Graduate work	.12	.12	.43	-.22	-.56
Outside influences	.25	.59	.27	.16	-.25
School improvement plan	.66	-.18	.163	.02	.03
Literacy coach	.57	-.26	.26	.16	-.01
Assistant principal	.59	-.24	-.13	.20	.31
Departmental chair	.52	-.01	-.09	.56	-.09
Technology resource teacher	.51	-.07	.23	.13	.15
Daughter and family members	.22	.19	.43	-.23	.42
i37r	.06	.41	.11	.21	.26
i57r	-.22	.34	.32	-.29	.43

Note: Extraction Method: Principal Component Analysis.

Table Q6

Predictor Variables, Definitions, and Final Items in Lineburg's Scales for Testing the Theory of Change in Teachers' Instructional Practices Following the Principal Components Analysis

Variable 1: Administrative influences

Description: The extent to which principals and assistant principals influence change in teachers' instructional practices.

Items:

- 129. My principal organizes in-service activities.
- 71. Professional development is not made accessible by my principal. (R)
- 43. I am encouraged by my principal to participate in professional development opportunities.
- 77. My principal alerts me to college courses for professional development.
- 102. My principal brings in experts in certain areas for professional development.
- 101. My principal allocates money each year for teachers to spend.
- 32. My principal always provides resources that I ask for.
- 120. My principal does not supply resources for my work.
- 76. My principal provides ample resources for my work.
- 72. If I need resources, they are made available to me by my principal.
- 41. My principal communicates instructional goals for the school.
- 78. My principal communicates instructional goals during faculty meetings.
- 75. My principal communicates a clear vision for the school.
- 98. Instructional goals are posted throughout my school.
- 99. Teachers in my school are aware of the instructional goals for our school.
- 100. Teachers are publicly praised by my principal.
- 74. My principal uses faculty meetings to praise teachers.
- 79. My principal celebrates achievements by teachers.
- 121. Rewards provided by my principal motivate me.
- 42. My principal recognizes teachers for their achievements.
- 80. My principal does not discuss classroom observations with me. (R)
- 33. Post-observation conferences by my principal are just a formality. (R)
- 97. I receive suggestions from my principal following observations
- 73. I am frequently observed by my principal
- 130. I receive feedback from my principal following observations
- 91. My principal prevents disruptions during the school day.
- 70. My principal handles student discipline.
- 104. Instructional time is protected by my principal.
- 44. I feel supported by my principal.
- 132. My principal deals with disgruntled parents.

(table continues)

Table Q6 (continued)

-
- 114. My assistant principal provides suggestions following classroom observations.
 - 52. My assistant principal has provided me resources to support instruction.
 - 93. My assistant principal discusses classroom observations with me.
 - 141. I discuss instructional methods with my assistant principal.
 - 56. My assistant principal holds instructional conferences with teachers.
-

Variable 2: Pressures put on teachers

Description: Pressures put on teachers from directives, state and national policies, central office staff, a school improvement plan, a literacy coach, and a technology resource teacher.

Items:

- 105. Decisions regarding instruction in my school are top down.
 - 84. My principal directs teachers to use certain instructional practices.
 - 131. My principal makes decisions regarding instructional changes.
 - 68. My principal dictates how I teach.
 - 34. My principal makes all decisions regarding instruction.
 - 48. The No Child Left Behind Act has forced me to implement strategies to reach diverse learners.
 - 85. State and national policies have little impact on what I do in the classroom. (R)
 - 108. My instruction is focused on state standards.
 - 134. I use data from state tests to drive my instruction.
 - 66. Scores on state tests have forced me to focus on remediation.
 - 90. Central office support has encouraged changes in my teaching.
 - 36. Central office sets instructional goals for teachers.
 - 109. I rarely communicate with members of the central office. (R)
 - 64. I receive resources to support instruction from the central office.
 - 136. Central office directives influence how I teach.
 - 49. The goals of my school's improvement plan have changed what I do in the classroom.
 - 111. I am not familiar with goals included in my school's improvement plan. (R)
 - 92. My school's improvement plan focuses on new instructional strategies.
 - 138. I am not aware of a school improvement plan for my school. (R)
 - 59. I have incorporated instructional strategies included in my school's improvement plan.
 - 38. My school's literacy coach has provided strategies on how to teach reading.
 - 88. I have received training on reading strategies from a literacy coach.
 - 112. I am not aware of a literacy coach in my school. (R)
 - 61. My school's literacy coach has motivated me to focus on teaching reading.
 - 139. I have never received support from a literacy coach. (R)
-

(table continues)

Table Q6 (continued)

-
54. I have learned to use technology in the classroom from a Technology Resource Teacher.
96. The Technology Resource Teacher in my school is knowledgeable about instructional practices.
117. I have received instructional support from a Technology Resource Teacher.
128. I have received technology support from a Technology Resource Teacher.
39. My school does not have a Technology Resource Teacher. (R)
-

Variable 3: Peer influences

Description: The extent to which teachers interact and support one another on instructional issues.

Items:

46. I feel comfortable approaching my colleagues for new instructional ideas.
83. I get new instructional ideas from members of my department.
67. Teachers in my school plan together.
123. I discuss new ways to teach a subject with other teachers.
107. I share instructional strategies with teachers in my school.
51. My departmental chair discusses instructional strategies with members of my department.
94. I receive instructional resources from my departmental chair.
116. I have a strong, collegial relationship with my departmental chair.
126. I never discuss instruction with my departmental chair. (R)
58. My departmental chair is an instructional leader.
-

Variable 4: Self/family/student influences

Description: The extent to which changes in teachers' instructional practices are influenced by personal beliefs, family members, and students.

Items:

95. My own children's experiences in school have influenced my teaching.
40. Family members have influenced my teaching.
118. My children have influenced my teaching.
127. I have learned new instructional strategies from my own children.
55. My family is not supportive of my teaching career. (R)
65. Feedback from my students has motivated me to change how I teach.
106. I have incorporated more technology because of my students.
47. I change the way I teach to accommodate the needs of my students.
-

(table continues)

Table Q6 (continued)

-
82. My students influence how I teach.
133. I use more technology because students are accustomed to it.
37. Experience has changed the instructional strategies I use.
57. Changes I make in the classroom come from my own beliefs about how students learn.
-

Variable 5: External growth opportunities

Description: Instructional support given to teachers by professional development opportunities provided by school and outside organizations

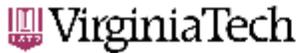
Items:

69. I have learned new instructional practices from professional development opportunities.
45. Teachers in my school are not provided professional development opportunities. (R)
103. Professional development has no impact on what I do in the classroom. (R)
122. Professional development supports what I do in the classroom.
81. Professional development has changed the way I teach.
86. Graduate classes I have taken do not relate to what I do in the classroom. (R)
35. Graduate level classes have improved my teaching skills.
63. I have learned new instructional strategies from graduate classes.
135. Graduate work has not influenced what I do in the classroom. (R)
124. I have used instructional strategies I learned from graduate work
60. I have learned new instructional strategies from sources outside of my school system.
125. I have never used instructional resources from outside of my school system. (R)
50. I have received resources to support instruction from sources outside of my school.
89. I am not aware of instructional resources outside of my school system. (R)
113. I am influenced by organizations outside of my school.
-

Note: All Items are in the *Lineburg Change Questionnaire* (see Appendix M). Items marked with an R were recoded from 1=4, 2=3, 3=2, and 4=1.

APPENDIX R

IRB APPROVAL LETTER FOR QUANTITATIVE STUDY



Office of Research Compliance
Institutional Review Board
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24061
540/231-4991 Fax 540/231-0959
e-mail moored@vt.edu
www.irb.vt.edu

FWA00000572 expires 1/20/2010
IRB # is IRB00000687

DATE: October 2, 2009

MEMORANDUM

TO: David J. Parks
Paul Lineburg

Approval date: 5/2/2009
Continuing Review Due Date: 4/17/2010
Expiration Date: 5/1/2010

FROM: David M. Moore 

SUBJECT: **IRB Amendment 2 Approval:** "School Leaders Influence on Instructional Strategies: Validation of Interview Guide Content", IRB # 08-280

This memo is regarding the above referenced protocol which was previously granted approval by the IRB on May 2, 2009. You subsequently requested permission to amend your IRB application. Since the requested amendment is nonsubstantive in nature, I, as Chair of the Virginia Tech Institutional Review Board, have granted approval for requested protocol amendment, effective as of October 2, 2009. The anniversary date will remain the same as the original approval date.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in previously approved human subject research activities to the IRB, including changes to your study forms, procedures and investigators, regardless of how minor. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.
2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.
3. Report promptly to the IRB of the study's closing (i.e., data collecting and data analysis complete at Virginia Tech). If the study is to continue past the expiration date (listed above), investigators must submit a request for continuing review prior to the continuing review due date (listed above). It is the researcher's responsibility to obtain re-approval from the IRB before the study's expiration date.
4. If re-approval is not obtained (unless the study has been reported to the IRB as closed) prior to the expiration date, all activities involving human subjects and data analysis must cease immediately, except where necessary to eliminate apparent immediate hazards to the subjects.

cc: File

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APPENDIX S

PRE-NOTICE EMAIL FOR QUESTIONNAIRE

Date

Dear Teacher,

We are researchers in the School of Education at Virginia Tech, and we are studying the instructional practices of teachers.

We believe that teachers are an integral part of student success. They affect learning primarily through their instructional practices.

There are many influences on these instructional practices, including teacher development, personal characteristics of teachers, state and national policies, colleagues, departmental chairs, and principals.

In two to three days you will receive an email containing a cover letter with an explanation of our research. This email will contain a link to a web-based questionnaire on this topic.

We are asking for your assistance in this research by completing this brief web-based questionnaire. Your participation would be greatly appreciated.

Sincerely,

Paul N. Lineburg
Graduate Candidate
Virginia Polytechnic Institute and
State University
plineburg@rcs.k12.va.us
(540) 312-4746

Dr. David J. Parks
Professor
Virginia Polytechnic Institute and
State University
parks@vt.edu
(540) 231-9709

APPENDIX T

COVER LETTER EMAIL FOR QUESTIONNAIRE

Date

Dear Teacher,

A few days ago you received an email asking for your participation in a Virginia Tech study of instructional practices.

This study is about changes you have made in your instructional practices during the last two school years and what influenced you to make those changes.

We believe that your participation in this study will provide information that will help principals identify ways in which they can facilitate the work of teachers in classrooms.

We are asking you to complete a brief, on-line questionnaire. Your name will not be used in this research, nor will you be identified in the report of the study. This study has been approved by the Virginia Tech Institutional Review Board.

The questionnaire is at <https://survey.vt.edu/survey/entry.jsp?id=1165861441615>.

It should take about 15 minutes to complete the items.

We appreciate your participation, and please contact us if you have any questions.

Sincerely,

Paul N. Lineburg
Graduate Candidate
Virginia Polytechnic Institute and
State University
plineburg@rcs.k12.va.us
(540) 312-4746

Dr. David J. Parks
Professor
Virginia Polytechnic Institute and
State University
parks@vt.edu
(540) 231-9709

APPENDIX U

FOLLOW-UP EMAIL ONE FOR QUESTIONNAIRE

Date

Dear Teacher,

Last week we sent you a questionnaire on your instructional practices.

If you completed the questionnaire, we thank you for your participation.

If you have not completed the questionnaire, please take a few minutes to do so at this time. The questionnaire is at <https://survey.vt.edu/survey/entry.jsp?id=1165861441615>

Your input will be an important contribution to the work of principals and teachers. Your name will not be used in the final report of the study.

Thanks again for your willingness to help.

Sincerely,

Paul N. Lineburg
Graduate Candidate
Virginia Polytechnic Institute and
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plineburg@rcs.k12.va.us
(540) 312-4746

Dr. David J. Parks
Professor
Virginia Polytechnic Institute and
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parks@vt.edu
(540) 231-9709

APPENDIX U (continued)

FOLLOW-UP EMAIL TWO FOR QUESTIONNAIRE

Date

Dear Teacher,

Two weeks ago you received an email with a URL for a questionnaire on your instructional practices. If you completed the questionnaire, thank you. If you haven't completed the questionnaire, would you please take a few minutes to do so now? The questionnaire is located at <https://survey.vt.edu/survey/entry.jsp?id=1165861441615>.

The results of the study may provide useful information on why teachers make changes in their instructional practices. Both teachers and administrators may find the information useful in planning professional development activities.

Your input will be an important contribution to this work. You will not be identified in any of the reports of the study, and all information will be held in confidence.

Thanks again for your willingness to help.

Sincerely,

Paul N. Lineburg
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State University
plineburg@rcs.k12.va.us
(540) 312-4746

Dr. David J. Parks
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(540) 231-9709

APPENDIX U (continued)

FOLLOW-UP EMAIL THREE FOR QUESTIONNAIRE

Date

Dear Teacher,

Approximately a month ago, you were invited to participate in a study of the instructional practices of teachers. Many teachers from across the country have completed the questionnaire. If you have done so, thank you. If not, would you please take a few minutes to complete and submit the questionnaire now? The questionnaire is located at <https://survey.vt.edu/survey/entry.jsp?id=1165861441615>.

The results of the study will provide information on why teachers make changes in their instructional practices. Both teachers and administrators may find the information useful in planning professional development activities.

Your responses to the questionnaire items are essential to the success of the study, and we encourage you to make them a part of the results. We want to assure you that you will not be identified in any way in the report of the results.

Thanks again for your willingness to help.

Sincerely,

Paul N. Lineburg
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APPENDIX V
DESCRIPTIVE STATISTICS FOR THE CRITERION VARIABLE AND PREDICTOR VARIABLES

Table V1
Descriptive Data for Criterion Variables: Frequencies and Percentages for Teacher Use of Instructional Strategies

Strategy	Much decrease		Some decrease		No change		Some increase		Much increase		Have not used		Missing		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Direct instruction	28	9.2	95	31.3	95	31.3	55	18.1	28	9.2	3	1.0	0	100.0	304	100.0
Computers	10	3.3	13	4.3	7	18.8	130	42.8	84	27.6	9	3.0	1	0.3	304	100.0
Internet	10	3.3	2	0.7	49	16.1	159	52.3	70	23.0	11	3.6	3	0.1	304	100.0
Graphic organizers	3	1.0	12	3.9	102	33.6	110	36.2	56	18.4	19	16.3	2	0.7	304	100.0
Cooperative Groups	12	13.9	12	3.9	88	28.9	123	40.5	65	21.4	2	0.7	2	0.7	304	100.0
Critical thinking	6	2.0	8	2.6	67	22.0	147	48.4	74	24.3	0	0.0	2	0.7	304	100.0
Enrichment	1	0.3	8	2.6	100	32.9	134	44.1	51	16.8	9	3.0	1	0.3	304	100.0
Hands on	3	1.0	9	3.0	100	32.9	108	35.5	78	25.7	4	1.3	2	0.7	304	100.0

(table continues)

Table V1 (continued)

Strategy	Much decrease		Some decrease		No change		Some increase		Much increase		Have not used		Missing		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Discussion	5	1.6	16	5.3	103	33.9	117	38.5	57	18.8	3	1.0	3	1.0	304	100.0
Inquiry	4	1.3	9	3.0	109	35.9	133	43.8	43	14.1	4	1.3	2	0.7	304	100.0
Review	2	0.7	21	6.9	110	36.2	108	35.5	59	19.4	2	0.7	2	0.7	304	100.0
Questioning	3	1.0	8	2.6	111	36.5	119	39.1	59	19.4	2	0.7	2	0.7	304	100.0
Feedback	4	1.3	18	5.9	128	42.1	95	31.3	56	18.4	1	0.3	2	0.7	304	100.0
Projects	8	2.6	22	7.2	111	36.5	103	33.9	50	16.4	9	3.0	1	0.3	304	100.0
Assessments	1	0.3	12	3.9	117	38.5	105	34.5	67	22.0	1	0.3	1	0.3	304	100.0
Collaborative teaching	7	2.3	14	4.6	119	39.1	87	28.6	43	14.1	31	10.2	3	1.0	304	100.0
Concept-based	0	0.0	7	2.3	145	47.7	91	29.9	33	10.9	24	7.9	4	1.3	304	100.0
Cross-curricular	4	1.3	10	3.3	135	44.4	98	32.2	27	8.9	29	9.5	1	0.3	304	100.0
Vocabulary	4	1.3	18	5.9	87	28.6	133	43.8	56	18.4	3	1.0	3	1.0	304	100.0

(table continues)

Table V1 (continued)

Strategy	Much decrease		Some decrease		No change		Some increase		Much increase		Have not used		Missing		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Homework	15	4.9	54	17.8	145	47.7	63	20.7	18	5.9	7	2.3	2	0.7	304	100.0
Writing	1	0.3	10	3.3	89	29.3	120	39.5	71	23.4	6	2.0	7	2.3	304	100.0
Reading	1	0.3	9	3.0	114	37.5	108	35.5	62	20.4	8	2.6	2	0.7	304	100.0
Standards	5	1.6	4	1.3	108	35.5	104	34.2	78	25.7	3	1.0	2	0.7	304	100.0
Learning style	3	1.0	3	1.0	59	19.4	163	53.6	73	24.0	2	1.0	0	0.0	304	100.0

Note. The scale was: -2 = much decrease in the use of the strategy, -1 = some decrease in the use of the strategy, 0 = no change in the use of the strategy, 1 = some increase in the use of the strategy, 2 = much increase in the use of the strategy, and 9 = have not used the strategy. The scale was recoded for mean change by converting all negative values to positive values. The scale was changed to: 0 = no change in use of the strategy, 1 = some change in use of the strategy, 2 = much change in use of the strategy

Table V2

Descriptive Data for Predictor Variables: Items Associated with Influences on Instructional Strategies

Item numbers	Strongly disagree		Disagree		Agree		Strongly agree		Missing		Total		Mean	Standard Deviation
	n	%	n	%	n	%	n	%	n	%	n	%		
32	9	3.0	81	26.6	170	55.9	42	13.8	2	0.7	304	100.0	2.81	0.70
33 ¹	17	15.6	125	41.1	133	43.8	23	7.6	6	2.0	304	100.0	2.46	0.72
34	87	28.6	184	60.5	23	7.6	8	2.6	2	0.7	304	100.0	1.84	0.67
35	18	5.9	73	24.0	151	49.7	52	17.1	10	3.3	304	100.0	2.81	0.80
36	23	7.6	101	33.2	146	48.0	30	9.9	4	1.3	304	100.0	2.61	0.77
37	4	1.3	5	1.6	154	50.7	136	44.7	5	1.6	304	100.0	3.41	0.60
38	64	21.1	114	37.5	88	28.9	28	9.2	10	3.3	304	100.0	2.27	0.91
39 ¹	70	23.0	111	36.5	79	26.0	38	12.5	6	2.0	304	100.0	2.71	0.97
40	37	12.2	116	38.2	121	39.8	27	8.9	3	1.0	304	100.0	2.46	0.82
41	9	3.0	36	11.8	194	63.8	59	19.4	6	2.0	304	100.0	3.02	0.66

(table continues)

Table V2 (continued)

Item numbers	Strongly disagree		Disagree		Agree		Strongly agree		Missing		Total		Mean	Standard Deviation
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%		
42	12	3.9	53	17.4	170	55.9	62	20.4	7	2.3	304	100.0	2.95	0.74
43	13	4.3	43	14.1	160	52.6	83	27.3	5	1.6	304	100.0	3.05	0.77
44	16	5.3	35	11.5	148	48.7	98	32.2	7	2.3	304	100.0	3.10	0.81
45 ¹	99	32.6	155	51.0	32	10.5	12	3.9	6	2.0	304	100.0	3.14	0.76
46	4	1.3	25	8.2	170	55.9	103	33.9	2	0.7	304	100.0	3.23	0.65
47	0	0.0	6	2.0	191	62.8	102	33.6	5	1.6	304	100.0	3.32	0.51
48	68	22.4	130	42.8	85	28.0	14	4.6	7	2.3	304	100.0	2.15	0.83
49	16	5.3	118	38.8	142	46.7	20	6.6	8	2.6	304	100.0	2.56	0.70
50	14	4.6	75	24.7	165	54.3	43	14.1	7	2.3	304	100.0	2.80	0.74
51	32	10.5	71	23.4	145	47.7	50	16.4	6	2.0	304	100.0	2.71	0.87
52	33	10.9	105	34.5	132	43.4	22	7.2	12	3.9	304	100.0	2.49	0.79
53	50	16.4	177	58.2	57	18.8	13	4.3	7	2.3	304	100.0	2.11	0.72
54	60	19.7	118	38.8	97	31.9	23	7.6	6	2.0	304	100.0	2.28	0.87

(table continues)

Table V2 (continued)

Item numbers	Strongly disagree		Disagree		Agree		Strongly agree		Missing		Total		Mean	Standard Deviation
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%		
55 ¹	177	58.2	101	33.2	19	6.3	3	1.0	4	1.3	304	100.0	3.51	0.66
56	53	17.4	121	39.8	102	33.6	15	4.9	13	4.3	304	100.0	2.27	0.82
57	4	1.3	53	17.4	171	56.3	69	22.7	7	2.3	304	100.0	3.03	0.68
58	38	12.5	74	24.3	132	43.4	48	15.8	12	3.9	304	100.0	2.65	0.91
59	8	2.6	46	15.1	209	68.8	33	10.9	8	2.6	304	100.0	2.90	0.61
60	7	2.3	16	5.3	190	62.5	82	27.0	9	3.0	304	100.0	3.18	0.63
61	69	22.7	139	45.7	64	21.1	16	5.3	16	5.3	304	100.0	2.09	0.82
62	6	2.0	16	5.3	171	56.3	102	33.6	9	3.0	304	100.0	3.25	0.65
63	24	7.9	85	28.0	141	46.4	38	12.5	16	5.3	304	100.0	2.67	0.81
64	41	13.5	102	33.6	135	44.4	14	4.6	12	3.9	304	100.0	2.42	0.79
65	3	1.0	20	6.6	209	68.8	60	19.7	12	3.9	304	100.0	3.12	0.55
66	35	11.5	96	31.6	132	43.4	24	7.9	17	5.6	304	100.0	2.51	0.82

(table continues)

Table V2 (continued)

Item numbers	Strongly disagree		Disagree		Agree		Strongly agree		Missing		Total		Mean	Standard Deviation
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%		
67	32	10.5	73	24.0	152	50.0	34	11.2	13	4.3	304	100.0	2.65	0.83
68	113	37.2	151	49.7	26	8.6	4	1.3	10	3.3	304	100.0	1.73	0.68
69	9	3.0	31	10.2	193	63.5	59	19.4	12	3.9	304	100.0	3.03	0.66
70	27	8.9	85	28.0	143	47.0	38	12.5	11	3.6	304	100.0	2.66	0.82
71 ¹	96	31.6	165	54.3	29	9.5	3	1.0	11	3.6	304	100.0	3.21	0.65
72	3	1.0	70	23.0	189	62.2	29	9.5	13	4.3	304	100.0	2.84	0.60
73	48	15.8	118	38.8	114	37.5	11	3.6	13	4.3	304	100.0	2.30	0.79
74	11	3.6	55	18.1	180	59.2	46	15.1	12	3.9	304	100.0	2.89	0.70
75	13	4.3	47	15.5	161	53.0	72	23.7	11	3.6	304	100.0	3.00	0.77
76	17	5.6	80	26.3	162	53.3	32	10.5	13	4.3	304	100.0	2.72	0.74
77	34	11.2	107	35.2	130	42.8	20	6.6	13	4.3	304	100.0	2.47	0.79
78	6	2.0	47	15.5	188	61.8	52	17.1	11	3.6	304	100.0	2.98	0.65

(table continues)

Table V2 (continued)

Item numbers	Strongly disagree		Disagree		Agree		Strongly agree		Missing		Total		Mean	Standard Deviation
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%		
79	15	4.9	43	14.1	165	54.3	68	22.4	13	4.3	304	100.0	2.98	0.77
80 ¹	53	17.4	170	55.9	58	19.1	7	2.3	16	5.3	304	100.0	2.93	0.69
81	11	3.6	56	18.4	186	61.2	38	12.5	13	4.3	304	100.0	2.86	0.68
82	2	0.7	9	3.0	181	59.5	99	32.6	13	4.3	304	100.0	3.30	0.56
83	12	3.9	42	13.8	187	61.5	50	16.4	13	4.3	304	100.0	2.95	0.69
84	27	8.9	115	37.8	136	44.7	12	3.9	14	4.6	304	100.0	2.46	0.72
85 ¹	42	13.8	161	53.0	68	22.4	21	6.9	12	3.9	304	100.0	2.77	0.78
86 ¹	45	14.8	157	51.6	62	20.4	17	5.6	23	7.6	304	100.0	2.82	0.77
87	6	2.0	1	0.3	113	37.2	170	55.9	14	4.6	304	100.0	3.54	0.62
88	64	21.1	100	32.9	95	31.3	28	9.2	17	5.6	304	100.0	2.30	0.93
89 ¹	61	20.1	181	59.5	38	12.5	7	2.3	17	5.6	304	100.0	3.03	0.67
90	44	14.5	132	43.4	102	33.6	8	2.6	18	5.9	304	100.0	2.26	0.75

(table continues)

Table V2 (continued)

Item numbers	Strongly disagree		Disagree		Agree		Strongly agree		Missing		Total		Mean	Standard Deviation
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%		
91	36	11.8	83	27.3	143	47.0	24	7.9	18	5.9	304	100.0	2.54	0.82
92	10	3.3	72	23.7	175	57.6	30	9.9	17	5.6	304	100.0	2.78	0.67
93	38	12.5	81	26.6	144	47.4	20	6.6	21	6.9	304	100.0	2.52	0.81
94	29	9.5	64	21.1	147	48.4	47	15.5	17	5.6	304	100.0	2.74	0.85
95	35	11.5	63	20.7	131	43.1	39	12.8	36	11.8	304	100.0	2.65	0.89
96	36	11.8	89	29.3	118	38.8	38	12.5	23	7.6	304	100.0	2.56	0.88
97	23	7.6	66	21.7	165	54.3	34	11.2	16	5.3	304	100.0	2.73	0.77
98	36	11.8	124	40.8	109	35.9	19	6.3	16	5.3	304	100.0	2.39	0.79
99	12	3.9	55	18.1	186	61.2	36	11.8	15	4.9	304	100.0	2.85	0.68
100	17	5.6	47	15.5	171	56.3	54	17.8	15	4.9	304	100.0	2.91	0.76
101	20	6.6	75	24.7	154	50.7	37	12.2	18	5.9	304	100.0	2.73	0.77
102	17	5.6	80	26.3	159	52.3	29	9.5	19	6.3	304	100.0	2.70	0.73

(table continues)

Table V2 (continued)

Item numbers	Strongly disagree		Disagree		Agree		Strongly agree		Missing		Total		Mean	Standard Deviation
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%		
103 ¹	51	16.8	198	65.1	27	8.9	11	3.6	17	5.6	304	100.0	3.01	0.65
104	18	5.9	62	20.4	180	59.2	26	8.6	18	5.9	304	100.0	2.75	0.71
105	33	10.9	141	46.4	90	29.6	20	6.6	20	6.6	304	100.0	2.34	0.78
106	5	1.6	57	18.8	177	58.2	45	14.8	20	6.6	304	100.0	2.92	0.65
107	2	0.7	14	4.6	206	67.8	65	21.4	17	5.6	304	100.0	3.16	0.53
108	7	2.3	49	16.1	172	56.6	56	18.4	20	6.6	304	100.0	2.98	0.69
109 ¹	14	4.6	87	28.6	127	41.8	59	19.4	17	5.6	304	100.0	2.20	0.82
110	8	2.6	39	12.8	199	65.5	41	13.5	17	5.6	304	100.0	2.95	0.62
111 ¹	66	21.7	177	58.2	35	11.5	9	3.0	17	5.6	304	100.0	3.05	0.69
112 ¹	60	19.7	94	30.9	76	25.0	58	19.1	16	5.3	304	100.0	2.54	1.04
113	18	5.9	82	27.0	158	52.0	30	9.9	16	5.3	304	100.0	2.69	0.74
114	39	12.8	80	26.3	137	45.1	23	7.6	25	8.2	304	100.0	2.52	0.84

(table continues)

Table V2 (continued)

Item numbers	Strongly disagree		Disagree		Agree		Strongly agree		Missing		Total		Mean	Standard Deviation
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%		
115	6	2.0	20	6.6	177	58.2	84	27.6	17	5.6	304	100.0	3.18	0.64
116	25	8.2	39	12.8	138	45.4	82	27.0	20	6.6	304	100.0	2.98	0.88
117	51	16.8	85	28.0	113	37.2	33	10.9	22	7.2	304	100.0	2.45	0.92
118	33	10.9	57	18.8	135	44.4	48	15.8	31	10.2	304	100.0	2.73	0.89
119 ¹	77	25.3	165	54.3	38	12.5	9	3.0	15	4.9	304	100.0	3.07	0.72
120 ¹	45	14.8	185	60.9	51	16.8	5	1.6	18	5.9	304	100.0	2.94	0.64
121	49	16.1	138	45.4	87	28.6	12	3.9	18	5.9	304	100.0	2.22	0.77
122	9	3.0	46	15.1	193	63.5	35	11.5	21	6.9	304	100.0	2.90	0.64
123	0	0.0	26	8.6	196	64.5	61	20.1	21	6.9	304	100.0	3.12	0.54
124	17	5.6	64	21.1	161	53.0	34	11.2	28	9.2	304	100.0	2.77	0.74
125 ¹	90	29.6	172	56.6	16	5.3	4	1.3	22	7.2	304	100.0	3.23	0.62
126 ¹	95	31.3	150	49.3	24	7.9	13	4.3	22	7.2	304	100.0	3.16	0.76

(table continues)

Table V2 (continued)

Item numbers	Strongly disagree		Disagree		Agree		Strongly agree		Missing		Total		Mean	Standard Deviation
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%		
127	36	11.8	88	28.9	123	40.5	16	5.3	41	13.5	304	100.0	2.45	0.80
128	46	15.1	68	22.4	130	42.8	34	11.2	26	8.6	304	100.0	2.55	0.91
129	7	2.3	35	11.5	197	64.8	40	13.2	25	8.2	304	100.0	2.97	0.61
130	19	6.3	56	18.4	167	54.9	37	12.2	25	8.2	304	100.0	2.80	0.75
131	16	5.3	96	31.6	154	50.7	13	4.3	25	8.2	304	100.0	2.59	0.67
132	9	3.0	16	5.3	184	60.5	72	23.7	23	7.6	304	100.0	3.14	0.65
133	5	1.6	59	19.4	179	58.9	38	12.5	23	7.6	304	100.0	2.89	0.64
134	17	5.6	85	28.0	155	51.0	22	7.2	25	8.2	304	100.0	2.65	0.71
135 ¹	37	12.2	156	51.3	66	21.7	14	4.6	31	10.2	304	100.0	2.21	0.74
136	30	9.9	122	40.1	119	39.1	10	3.3	23	7.6	304	100.0	2.79	0.72
137	0	0.0	8	2.6	180	59.2	94	30.9	22	7.2	304	100.0	3.30	0.52
138 ¹	102	33.6	146	48.0	27	8.9	7	2.3	22	7.2	304	100.0	3.22	0.72

(table continues)

Table V2 (continued)

Item numbers	Strongly disagree		Disagree		Agree		Strongly agree		Missing		Total		Mean	Standard Deviation
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%		
139 ¹	45	14.8	98	32.2	87	28.6	52	17.1	22	7.2	304	100.0	2.48	0.97
140	0	0.0	3	1.0	179	58.9	100	32.9	22	7.2	304	100.0	3.34	0.50
141	38	12.5	92	30.3	129	42.4	17	5.6	28	9.2	304	100.0	2.45	0.81

Note. The items on the *Lineburg Change Questionnaire* are in Appendix M. The response categories were, 1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.

¹ Item was reverse coded: 1 = 4, 2=3, 3=2, 4=1.

APPENDIX W
DATA FROM THE REGRESSION ANALYSES

Table W1
Descriptive Statistics for the First Regression Analysis

	<i>M</i>	<i>SD</i>	<i>N</i>
Mean change of instructional strategies	.87	.40	304
Administrative Influence	2.76	.43	304
Pressure Influence	2.48	.38	304
Peer Influence	2.93	.52	303
Self/Family/Student Influence	3.08	.33	304
External Growth Influence	2.91	.38	303
Gender	.58	.49	301
Degree	.06	.24	304
Teacher Preparation	.79	.41	298
Areas of teaching	.60	.49	304
Certification	.93	.26	300
Years of experience	14.84	10.27	300
Endorsement	.98	.15	299

Table W2

Correlations for the Criterion Variable and Predictor Variables in the First Regression Analysis

	Mean change of instructional strategies	Years of experience	Administrative influence	Pressure influence	Peer influence	Self/family/student influence	External growth influence
Mean change of instructional strategies							
Years of experience	.00						
Administrative influence	.21**	-.03					
Pressure influence	.36**	.11*	.53**				
Peer influence	.12*	-.00	.42**	.34			
Self/family/student influence	.08	.10*	.06	-.00	-.00		
External growth Influence	.21**	-.02	.27**	.26**	.20	.17*	
Gender	.07	.01*	-.08	.02	-.03	.09*	.04
Degree	.01	.10	-.04	-.10*	-.06	-.06	-.06
Teacher preparation	.06	.26**	-.01	.12*	-.07	.04	.04
Areas of teaching	-.10*	-.10	-.07	-.14*	.07	.01	-.08
Endorsement	-.01	.02	.03	.03	.12*	.01	.07
Certification	-.00	.14*	-.04	-.05	-.14*	-.00	.09

(table continues)

Table W2 (continued)

	Gender	Degree	Teacher preparation	Areas of teaching	Endorsement	Certification
Degree	.08					
Teacher preparation	.15*	.00				
Areas of teaching	-.04	.02	-.06			
Endorsement	.05	.04	-.03	.10*		
Certification	.12*	.07	.17**	.05	.04	

* $p \leq .05$, ** $p \leq .01$

Table W3
Model Summary for the First Regression Analysis

Model	<i>R</i>	<i>R</i> square	Adjusted <i>R</i> square	Std. error of the estimate
1	.40	.16	.12	.38

Note. Predictor variables: Administrative influence, pressure influence, peer influence, self/family/student influence, external growth influence, gender, years of experience, degree, teacher preparation, areas of teaching, certification, and endorsement.

Table W4

Analysis of Variance (ANOVA) Table for the First Regression Model

	Sum of squares	<i>df</i>	Mean square	<i>F</i>	<i>p</i>
Regression	7.58	12	.63	4.45	.00
Residual	39.78	280	.14		
Total	47.36	292			

Note.^a Predictor were administrative influence, pressure influence, peer influence, self/family/student influence, external growth influence, gender, years of experience, degree, teacher preparation, areas of teaching, endorsement, and certification. The criterion variable was the amount of change in teachers' instructional practices.

Table W5

Regression Coefficients and Collinearity Statistics for the Regression of Change in Teachers' Instructional Practices on All Predictor Variables ($R^2 = .15$) for the First Regression Analysis

Predictor	Unstandardized coefficients		Standardized coefficients			Collinearity statistics	
	<i>b</i>	Std. error	Beta	<i>t</i>	<i>p</i>	Tolerance	<i>VIF</i>
(Constant)	-.57	.32		-1.63	.10		
Administrative influence	.00	.07	.00	.03	.97	.62	1.61
Pressure influence	.36	.07	.34	5.00	.00	.64	1.56
Peer influence	-.01	.05	-.01	-.13	.90	.75	1.33
Self/family/student Influence	.10	.07	.07	1.20	.24	.94	1.07
External growth influence	.12	.06	.11	1.90	.05	.85	1.18
Gender ¹	.03	.05	.04	.70	.49	.93	1.08
Years of experience	-.00	.00	-.05	-.89	.37	.87	1.15
Degree	.10	.09	.06	1.08	.28	.96	1.05
Teacher preparation	.01	.06	.01	.20	.84	.88	1.14

(table continues)

Table W5 (continued)

Predictor	Unstandardized coefficients		Standardized coefficients			Collinearity statistics	
	<i>b</i>	Std. error	Beta	<i>t</i>	<i>p</i>	Tolerance	<i>VIF</i>
Areas of teaching	-.03	.05	-.04	-.73	.46	.94	1.07
Certification	-.01	.09	.00	.04	.97	.91	1.10
Endorsement	-.10	.15	-.03	-.54	.59	.97	1.04

¹ Demographics were taken out after the first and second regression analysis. Three regression analyses were completed. The researcher found that some variables had too few people and they did not contribute to the regression equation. That left just the variables from the factor analysis which was the final run.

Table W6
Descriptive Statistics for the Second Regression Analysis

	<i>M</i>	<i>SD</i>	<i>N</i>
Mean change of instructional strategies	.87	.40	304
Administrative Influence	2.76	.43	304
Pressure Influence	2.48	.38	304
Peer Influence	2.93	.52	303
Self/Family/Student Influence	3.10	.33	304
External Growth Influence	2.91	.38	303
Degree	0.63	.48	304

Table W7

Correlations for the Criterion Variables and Predictor Variables in the Second Regression Analysis

	Mean change of instructional strategies	Administrative influence	Pressure influence	Peer influence	Self/family/student influence	External growth influence	Degree
Mean change of instructional strategies							
Administrative influence	.21**						
Pressure influence	.36**	.53**					
Peer influence	.12*	.42**	.34**				
Self/family/student Influence	.08	.06	-.00	-.00			
External growth influence	.21**	.27**	.26**	.20**	.17**		
Degree	-.02	-.17**	-.11*	-.03	.03	-.024	

* $p \leq .05$, ** $p \leq .01$

Table W8
Model Summary for Second Regression Analysis

Model	<i>R</i>	<i>R</i> square	Adjusted <i>R</i> square	Std. error of the estimate
1	.39	.15	.13	.38

Note. Predictor variables: Administrative influence, pressure influence, peer influence, self/family/student influence, external growth influence and degree.

Table W9

Analysis of Variance (ANOVA) Table for Second Regression Model

	Sum of squares	<i>df</i>	Mean square	<i>F</i>	<i>p</i>
Regression	7.36	6	1.23	8.72	.00
Residual	41.46	295	.14		
Total	48.82	301			

Note. ^a Predictor variables were administrative influence, pressure influence, peer influence, self/family/student influence, and external growth influence. The criterion variable was the amount of change in teachers' instructional practices.

Table W10

Regression Coefficients and Collinearity Statistics for the Regression of Change in Teachers' Instructional Practices on All Predictor Variables ($R^2 = .15$) for the Second Regression Analysis

Predictor	Unstandardized coefficients		Standardized coefficients			Collinearity statistics	
	<i>b</i>	Std. error	Beta	<i>t</i>	<i>p</i>	Tolerance	VIF
(Constant)	-.59	.28		-2.12	.04		
Administrative influence	.01	.06	.01	.10	.92	.63	1.60
Pressure influence	.36	.07	.34	5.25	.00	.69	1.45
Peer influence	-.02	.05	-.02	-.39	.70	.80	1.26
Self/family/student Influence	.10	.07	.06	1.08	.28	.97	1.04
External growth influence	.13	.06	.12	2.05	.04	.88	1.14
Degree	.02	.05	.02	.41	.68	.97	1.04

Table W11
Descriptive Statistics for the Third and Final Regression Analysis

	<i>M</i>	<i>SD</i>	<i>N</i>
Mean change of instructional strategies	.87	.40	304
Administrative Influence	2.80	.43	304
Pressure Influence	2.48	.38	304
Peer Influence	2.93	.52	303
Self/Family/Student Influence	3.08	.33	304
External Growth Influence	2.91	.38	303

Table W12

Correlations for the Criterion Variables and Predictor Variables in the Third and Final Regression Analysis

	Mean change of instructional strategies	Administrative influence	Pressure influence	Peer influence	Self/family/student influence	External growth influence
Mean change of instructional strategies						
Administrative influence	.21**					
Pressure influence	.36**	.53**				
Peer influence	.12*	.42**	.34**			
Self/family/student influence	.08	.06	-.00	-.00		
External growth Influence	.21**	.27**	.26**	.20**	.17**	

* $p \leq .05$, ** $p \leq .01$